

WHO WE ARE

Solvay is an advanced materials and specialty chemicals company, committed to developing chemistry that addresses key societal challenges. Solvay innovates and partners with customers worldwide in many diverse end markets. Its products are used in planes, cars, batteries, smart and medical devices, as well as in mineral and oil and gas extraction, enhancing efficiency and sustainability. Its lightweighting materials promote cleaner mobility, its formulations optimize the use of resources and its performance chemicals improve air and water quality.

Solvay is headquartered in Brussels with around 24,500 employees in 61 countries. Net sales were €10.1 billion in 2017, with 90% from activities where Solvay ranks among the world's top 3 leaders, resulting in an EBITDA margin of 22%. Solvay SA (SOLB.BE) is listed on Euronext Brussels and Paris (Bloomberg: SOLB.BB - Reuters: SOLB.BR) and in the United States its shares (SOLVY) are traded through a level-1 ADR program.

UNDERSTANDING SOLVAY

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MANAGEMENT REPORT

Corporate governance statement

Risk management





This report is also available online with expanded content, including interactive GRI Content Index: annualreports.solvay.com/2017/en

For greater insight into the Group, visit our corporate website:

www.solvay.com

ABOUT THIS REPORT

GOING FURTHER IN OUR INTEGRATED MANAGEMENT JOURNEY

Solvay's 2017 Annual Integrated Report gives an account of the progress we made last year in transforming ourselves into an advanced materials and specialty chemicals company. We are committed to sustainable and long-term value creation. Our Annual Integrated Report is based on the framework established by the International Integrated Reporting Council (IIRC) and reflects how we integrate sustainability into the management of our businesses, creating value for our customers and many other stakeholders.

Our ambition is to be a leading contributor to the reshaping of the global chemical industry and help deliver solutions that will meet the planet's sustainability challenges. We believe that collaboration makes a real difference, and we invite our stakeholders to contribute their skills, technologies, and resources. Creating sustainable value is more than a responsibility; it is also an opportunity. This is why in this year's report, we have asked our stakeholders for feedback on how we have been able to contribute to their long-term interests.

66 Our journey towards integrated reporting continues to evolve deliberately yet cautiously. With over 150 years of history, we are deeply aware of the importance of value that stands the test of time. Sustainability without strong profits is not sustainable, while strong profits to the detriment of sustainability undermine the longevity of a business.

Karim Hajjar, Member of the Executive Committee and Chief Financial Officer



The 2017 Annual Integrated Report builds on last year's report, and integrates feedback from several authoritative bodies, including the Global Reporting Initiative (GRI) and World Business Council for Sustainable Development (WBCSD). It is also aligned with GRI Standards and takes into account the Recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). The information provided also serves as a progress report on the implementation of the ten principles of the UN Global Compact and the Sustainable Development Goals (SDGs).







HOW TO APPROACH THIS REPORT

The "Understanding Solvay" section of this Report follows an integrated thinking approach, putting selected contents into the perspective of our vision and strategy, linking material information, and providing an outlook on the future. It focuses on priority topics for Solvay, telling the story of the Group's transformation, and presenting the objectives it has pursued over the last few years and its recent key achievements.

Links proposed in the Understanding Solvay section point to more detailed analyses in the Management Report. The latter also includes a focus on high materiality issues and a more detailed description of our business model.

Sections with this icon have been audited



Sections with the Sustainable Development Goals (SDGs) icon show how the individual goals are implemented

Further Reading & Features

Solvay's strategic objectives



Further reading in the report



Accounting policies

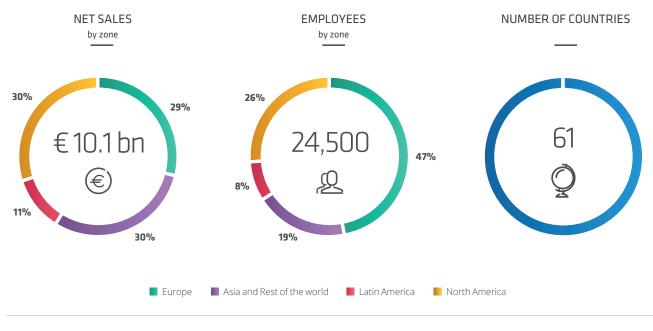


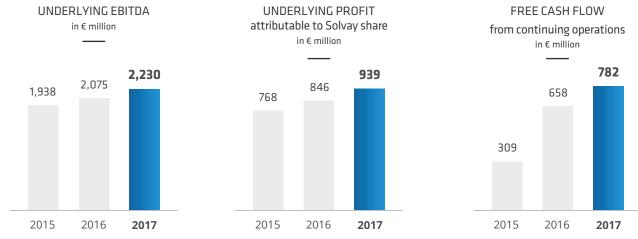
Further content online

2017 highlights

2017 KEY FIGURES

2017 and 2016 underlying and restated* information (except for environment and social data). 2015 pro forma figures.

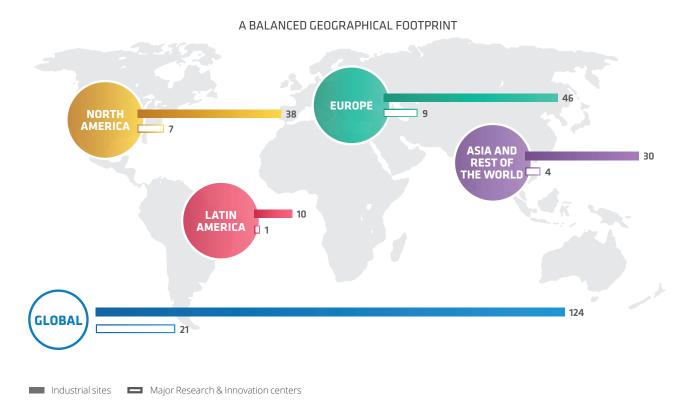




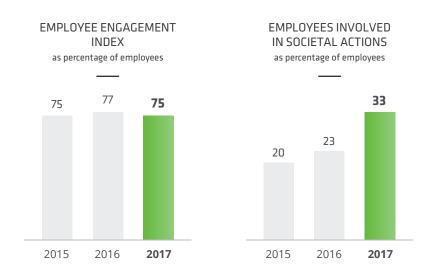


 $[\]hbox{* reflecting the reclassification in discontinued operations of the polyamide activities to be sold to BASF}$

¹Rate of accidents with medical treatment, with or without work stoppage







10 HIGHLIGHTS OF 2017

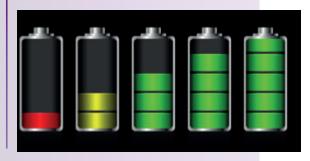
(D Polyamides business divestiture

We have entered into a binding agreement for the sale of our Polyamides business, a crucial step in transforming Solvay into an advanced materials and specialty chemicals company.



(☐) Acquisition of Energain™

We have acquired a battery-related technology which strengthens our capabilities in the development of high-voltage solutions for Li-ion batteries.



Partnership with the **Ellen MacArthur Foundation**

We joined the Ellen MacArthur Foundation as a Global Partner, raising the Group's opportunity to significantly contribute to accelerating the transition towards a circular economy.



Launch of Solvay Cares

True to our tradition of social protection, we have unveiled a bold initiative: a minimum level of company social benefits extending to all our employees, wherever they are in the world.



2017 Chemistry for the **Future Solvay Prize**

The 3rd Solvay Prize was awarded to Professor Susumu Kitagawa of Kyoto University, for his outstanding research in molecular architecture: gas-capturing cages that could help fight climate change.



(A new Solef® PVDF site in China

We have inaugurated a Solef® PVDF plant in China to meet booming demand for this thermoplastic polymer, a favored material for the lithium-ion batteries used in electric vehicles.



(□**)** New SolvaLite[™] composites

Our new SolvaLite™ composites harden much faster than traditional composites and are up to 40% lighter than metal, allowing lighter and more fuel-efficient vehicles.



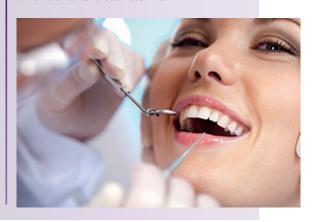
AgRho® N-Protect eco-friendly formulations

This family of products allows a better absorption of fertilizers by plants and thus reduces their use, increasing crop yields.



(□) Solvay Dental 360™

Solvay has entered into medical devices, building on its world-leading portfolio of high-performance polymers with Solvay Dental 360™, a new dental care business line.



(\square) My H_2O_2 comes to market

We have brought the breakthrough ${\rm myH_2O_2}$ concept to market: small, safe and robust satellite hydrogen peroxide production units intended for installation at customer sites.



SHAPING OUR FUTURE THROUGH INNOVATION

Throughout our 155-year history, we have always been driven by the strong belief that our role as a responsible chemist is to contribute to *Creating More Future* for our customers, for our people, and for society through innovative solutions and technologies. At Solvay, we believe that new technologies only count as progress if they are useful to each and every one of us.

Our people are the drivers of our transformation; their understanding of our environment allows us to anticipate and address our customers' needs. We recognize their talent, we empower them, and we help them thrive and develop. We pioneered employee welfare 155 years ago and are still perpetuating this heritage today, giving industrial relations a strategic role and implementing innovative social policies.

The ambition that defines Solvay is *Creating More Future*. Not only does this encapsulate what we strive to provide for our employees and our customers, it also expresses our humanist vision of science. Chemistry is the core of all industries and technologies, and we use innovation in chemistry to provide society with solutions for the future, addressing the issues of tomorrow.

Solvay is characterized by a passion for innovation, which we have inherited directly from our founder, Ernest Solvay. We believe in constantly pushing the boundaries of science and technology so we can contribute to shaping the future. Our commitment to innovation goes further still, shaping our approach to processes, business models, industrial relations, and much more.

More Future workshops

To spread our ambition and sustainability commitments among employees and make them a more important part of people's work practices, an internal onboarding campaign ran throughout 2017 in all countries. More than 16,000 employees participated in workshops designed to explain the Group's sustainable development objectives and to embark everyone. Teams at every site were asked to make concrete suggestions for improvements that would help their facilities contribute to meeting the Group's targets for safety at work, carbon intensity, providing sustainable solutions for our customers, employee engagement, and their involvement in societal actions.

Employees trained worldwide

16,000+

(Fostering human progress

The third Chemistry for the Future Solvay Prize was awarded to Professor Susumu Kitagawa of Kyoto University in November 2017 for his outstanding research in molecular architecture: gas-capturing cages which could help fight climate change.

The award of the Solvay Prize to Professor Kitagawa fits perfectly with its vocation of "fostering human progress", as established when it was created in 2013 to perpetuate the strong support for scientific research given by the founder of the Group, Ernest Solvay. Since then, every two years, a €300,000 prize aims to distinguish a major scientific discovery that "lays the foundation for the Chemistry for the Future". The previous laureate, Professor Ben Feringa, subsequently won the Nobel Prize for Chemistry in 2016 for his groundbreaking work on molecular motors.



Professor Susumu Kitagawa,Laureate 2017 "Chemistry for the future Solvay Prize"



We make smart investments in promising start-ups such as Multimechanics, an American software company whose virtual testing software allows us to innovate in new complex materials.

Nicolas Cudré-Mauroux, Group General Manager Research & Innovation

(Innovating to help our customers grow

Our Research & Innovation organization is geared to favor breakthrough innovation, which our customers require to maintain the pace of their own technological progress. 85% of the Group's R&I investments are directly managed by the GBUs while Corporate R&I is leading Solvay into new growth territories, incubating emerging competencies, and enhancing innovation excellence.

When it comes to innovation, speed is a keyword. The teams' ability to collaborate and to pull together as a Group allows us to react quickly. This year, for instance, corporate

and business teams worked together on the strategic acquisition of Energain $^{\text{TM}}$, a battery-related technology, strengthening Solvay's capabilities in the development of high-voltage solutions for Li-ion batteries. As a result, our solutions portfolio now includes a key battery component of electrolyte, ensuring higher performance and greater safety. Our flexibility, agility, and capacity to make rapid choice was decisive in the success of the operation.

Innovation in figures

R&I employees

2,100

Patent applications

284

R&I effort

€ 325

and start-ups

Allocated to funds

€80

STAKEHOLDERS SPEAK

Employees





In 2017, the Group signed four key collective agreements at global level with employee representatives from the major countries where we operate. With Solvay Cares, Solvay is one of the few companies to guarantee minimum social benefits for employees in all countries.

Keri Williams,Manager, Alpharetta site, Georgia, United States

KERI WILLIAMS

One of the things that I love most about working for Solvay is the value placed on the employee as a whole person, not just in relation to his or her work performance. I feel that employees' outside lives are respected and appreciated. The Solvay Cares program allowed me to enjoy an extended time with my new baby. This has meant so much to me and my family, and I am really grateful!

I have worked for other companies, but nowhere has been quite like Solvay. It's great to have management that promotes my professional development, which is a priority for the Group. I am proud to work for an organization with a rich legacy of innovation in so many different domains.

32.9
Average training hours per employee

14 full weeks under the Solvay Cares policy, which is unheard of in the US!

Solvay Cares covers four areas

Maternity, co-parent and adoption leave

14

weeks for mothers



Life insurance

up to 2
years of salary
for the family



Medical care

75%

coverage of expenses



Disability insurance

7

years of income



We are the only chemical company to run annual audits of local sites with IndustriALL, enabling social dialog at grassroots level and encouraging employees to speak up if they need to. >>>



ALBERT KRUFT

In 2017, we took our decade-long collaboration with IndustriALL, the global union for the chemicals industry, one step further. We believe good industrial relations helps us to reach solutions. At Solvay we have clear rules: employees are informed about strategic decisions and encouraged to give feedback. Understanding the Group's intentions helps instill trust and increases motivation.

We are proud of the Solvay Global Forum, which we formally created this year. This is an innovative and very efficient body that meets to discuss and propose improvements at Group level.

Albert Kruft,

Coordinator of the Solvay Global Forum of union representatives

ALBERT KRUFT

One of the most significant measures signed by the Global Forum is the Solvay Cares program, a pioneering initiative as it is the first time in the international chemicals industry that a program of this type has been signed with the unions.

We also fully support the Global Performance Sharing Plan, which was renewed this year. It makes all our employees feel they are recognized as part of the Solvay family.

Of course, there is room for improvement: for instance, offering employees the chance of becoming shareholders in the Group. That's what we are aiming for next!



100%

of employees covered by collective agreement

4

US sites visited by

Solvay Global Forum

1 week

meeting + Quartely calls / year

Global Performance Sharing Plan

€ 12

million in 2017

CHAIRMEN'S MESSAGE

In 2017, Solvay continued to make progress. Our solid results, supported by significant growth in volumes, put us on track to fully realizing the mid-term objectives set in 2016. This allows us to continue including our shareholders in the Group's growth, once again recommending an increase of more than 4% in the dividend.

Our good financial performance confirms once more the relevance of the portfolio transformation we have been undergoing since 2012. Today, Solvay is an advanced materials and specialty chemicals company, with a balanced presence on all continents. Some 70% of our portfolio consists of products from activities that

constitute our growth engines, and our revamped customer profile includes, first and foremost, major names in automotive, aerospace and electronics.

This is a success of which we can rightly be proud. It also opens the door to other opportunities, as we operate in a world that is going through a profound transformation further accelerated by the massive introduction of digital.

TRANSFORMING OUR ORGANIZATION

Our priority today is Growth. We need to bolster our capacity to innovate and to serve our customers more effectively so as to generate strong, sustainable growth. This is the essence of the organizational transformation that we have just launched. It aims to simplify and lighten the organization to better adapt to the rapidly evolving demands of our customers and to the new challenges created by the digital revolution.

To be successful, we need to transform our culture fundamentally, to encourage the spirit of initiative and to foster collaboration – both within the Group and with our external partners - in order to better serve our customers.



Nicolas Boël, Chairman of the Board of Directors

2018, A YEAR OF TRANSITION

Having taken up our posts at the same time, Jean-Pierre and I have shared six years of intensive transformation of the Group together. On behalf of the Board of Directors of Solvay and also in my own name, I would like to thank him for his remarkable contribution to changing the face of Solvay.

The Board of Directors, determined to pursue the strategy that has been implemented successfully over the last few years, is now speeding up the process of finding a successor to Jean-Pierre, which will consider candidates both from within the Group and from outside. Our goal is to complete the transition between now and the end of 2018. Until then, the Board will be able to count on the total commitment of its CEO to carry out the organizational transformation of the Group. Nicolas Boël

We believe in the power of symbols. This is why we launched the transformation of our head office in Brussels. We want it to be innovative, open to outside influences nurturing collaboration, with more space for Research and Innovation. In parallel, we are going to create a world-class R&I center in Lyon.

The Group's governance is adapting to these challenges. The new Comex, expanded and more representative of our cultural diversity and wealth of experience will contribute to the development of a customer-focused culture.



Watch Jean-Pierre Clamadieu's video annualreports.solvay.com/2017/en

SUSTAINABLE DEVELOPMENT SERVING OUR GROWTH

Jean-Pierre Clamadieu,

Our commitment to sustainable development is one of the drivers of our growth. In 2017, we surpassed the targets we set for our Group, with almost half of our sales already being generated by sustainable solutions and technologies, and with a carbon intensity that is declining year on year. Furthermore, we have launched Solvay Cares, a program that offers a minimum common level of social protection to all our employees worldwide. We are one of the few global groups to have instituted this type of initiative. We are proud to have done so in collaboration with our union representatives, which demonstrates the quality of the social dialog within the Group.

Nevertheless, there are still some areas where we need to do better, especially with respect to safety. While our overall results continue to improve year on year, we very much regret that a fatal accident occurred

2018 is likely to be a year of strong challenges for Solvay as we implement the transformation of the organization and continue to add value for our stakeholders. It will also be the year in which we will prepare for the transition announced a few weeks ago - and we will take this important $\,$ step in the life of the Group together.

Nicolas Boël,

Jean-Pierre Clamadieu,

Chairman of the Board of Directors Chairman of the Executive Committee and CEO

👫 After 15 years as CEO of Rhodia and then of Solvay, I have decided to accept an offer from the Engie group to become the chairman of its Board of Directors in May 2018. I will, however, continue to fulfill my role as CEO of Solvay while at the same time commencing my new duties, so as to allow an efficient transition at the helm of our Group. I will remain fully mobilized on our priorities, as we carry out a key stage in our transformation in 2018.

I have led the reorganization of the Group since 2012 with determination and enthusiasm, alongside the Board of Directors and its President to whom I give my warmest thanks for their trust and the quality of our relations. I would like also to thank the Solvay teams and my colleagues on the Executive Committee, without whom this transformation would not have been possible. 77 Jean-Pierre Clamadieu

A CUSTOMER-CENTRIC STRATEGY

2017 marked the opening of a new chapter in our history as we reached a key milestone in our transformation. With our portfolio upgrade largely completed, we are now focusing on the next step in our journey: fostering cultural change throughout the organization and speeding up our transformation thanks to digital, seeking to make Solvay more agile and customer-focused, with the capacity to innovate faster.

OUR NEW PROFILE

More global

Solvay has strengthened its geographic footprint. Each of the three key regions – the Americas, Europe, and Asia – generates around one third of the Group's net sales. Such balanced geographic distribution reduces the impact of adverse regulatory, economic, and political developments.

~1/3rd

Net sales in each main region

More sustainable

49% of our product portfolio consists of sustainable solutions for our customers, well on the way to exceeding our target of 50% by 2025, according to our Sustainable Portfolio Management (SPM) methodology. SPM is a tool that helps Solvay identify opportunities which will have a positive impact on our performance. It has enabled us to reorient our activities toward more sustainable and expanding markets.

~49%

Net sales with sustainable solutions



More balanced

More than one half of the Group's activities take place in markets expanding faster than growth in GDP. The portfolio transformation reached a key milestone in 2017, with the Group scaling back cyclical and low-growth businesses and divesting the polyamides business. By addressing a more diverse range of market segments, we are able to reduce our exposure to negative evolutions on our markets.

>50%

Net sales in GDP+ markets

More specialty

The breakdown in our activities today is approximately 40% Advanced Materials, 30% Advanced Formulations, and 30% Performance Chemicals. Roughly 70% of our net sales are generated by our growth engines.

Our activities are complementary: we operate a business model based on two growth engines (Advanced Materials and Advanced Formulations), backed up by a resilient cash contributor (Performance Chemicals) which enables us to generate capital to finance innovation.

~70%

Net sales from growth engines

With the portfolio transformation largely behind us, we are now driving cultural change within our company, getting rid of complexity and bureaucracy to free energies so that employees can really focus on what matters: our customers.

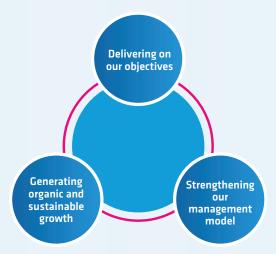
Pascal Juéry,
Member of the Executive Committee



OUR PRIORITIES FOR THE FUTURE

Delivering on our objectives

We are on track to deliver on our financial and extra-financial objectives; the growth and return on investment which we generate will ensure that we create sustainable value for our stakeholders. We will continue to deliver superior profit growth, allocate capital attentively, and maintain strong working capital discipline to grow cash generation and returns.



Generating organic and sustainable growth

The transformation of the organization will strengthen our business model, supporting the rapid growth and the innovation capabilities of our GBUs (Global Business Units). It will not only provide us with the ability and agility to develop market-oriented competitive solutions for our customers, it will also enable disruptive innovation and the creation of significant synergies at Group level.

We are focusing primarily on our growth engines – Advanced Materials and Advanced Formulations – and targeting organic EBITDA growth. Growth in these sectors is underpinned by innovation, our technological leadership, and our presence across diversified markets.

Strengthening our management model

After focusing on upgrading our business portfolio, our next challenge consists in adapting our organization to make it simpler, more agile, and more outward-looking, and thus better meet our customers' expectations. We are transforming the way we work, adapting our behaviors, driving a deep cultural change throughout the organization. Our digital transformation is under way, and there are already clear benefits. We are instilling a cultural change, based on customer focus, collaboration and entrepreneurship. Digital technologies will be an enabler for our transformation, boosting excellence in human resources, marketing and sales, supply chain, and industrial.

STAKEHOLDERS SPEAK

Customers





. Renner Sayerlack, a Brazilianbased multinational, is leader in the **Latin American market for paints** and varnishes for wood. One of our key customers in this market, it relies on Solvay for innovative solutions from renewable sources with low environmental impact.

Fabrizio Marini, Purchasing Manager, Renner Sayerlack

FABRIZIO MARINI

Like all companies that are benchmarks in their markets, Solvay applies the best and most innovative practices. We know that we can expect excellent service, strict quality control, and competitive costs.

Communication is key in our relationship with Solvay. There is great trust and transparency between our two companies' teams, whether in sales and purchasing or between our laboratories and technical staff – all the way up to senior management level.

11 Delivering differential value in our markets is a challenge. We are convinced that sustainability and respect for the environment will generate the greatest value for business. 77

What Renner Sayerlack and Solvay have in common is that we both make sustainable development a priority in all areas, developing sustainable technologies and safer and more eco-friendly systems, and taking care of our employees' well-being. This is key as we believe that the path of sustainability and respect for the environment will generate the greatest value for business.

New technologies and the amount of information available are speeding up the dynamics of business. This speed must be maintained and constantly improved in our relations and developments with Solvay.



ability to really understand what we are trying to convey, and to transform it into solutions that meet our needs. This is the result of building trust and transparency between us.

_____ UPM is a leading Finnish company in the forest-based bio-industry sector that is strongly committed to sustainable business. Solvay enjoys more than 40 years of history in supplying bleaching chemicals like hydrogene peroxide (H_2O_2) to UPM.

We hope Solvay will keep daring innovation projects on the agenda – if we stop exploring, we stop developing!

Risto Vartia,
Category Manager, Pulping Chemicals, UPM

RISTO VARTIA

Solvay has a long track record in supplying our industry and we have had a long business relationship. Consequently, Solvay understands our business and our needs very well and is a reliable supplier of one of our key raw materials.

We also work together on development projects, for example, in the areas of sustainability, safety, costs, and new products. The aim is to create new value for both companies.

We continuously pursue improvements in everything we do and expect the same from our business partners: achieving significant progress together requires open minds and the open collaboration of every player in the supply chain.

KEEPING PACE WITH CHANGING GLOBAL TRENDS

——— Our business environment is changing at an unprecedented pace. Powerful global trends are redefining our behaviors, needs, and expectations. These changes played a part in triggering our own far-reaching transformation.

The technological progress that our customers seek in order to address the new and emerging needs of their own customers relies heavily on the innovative capabilities of the chemical industry. We work in close collaboration with our customers, gaining a thorough understanding of their businesses that enables us to provide them with sophisticated and customized solutions that are often critical to their own product development programs.

Solvay continuously strives to become a strategic and agile partner for its clients, providing innovative and tailor-made solutions through a seamless customer experience. That is our priority for 2018. *

Augusto Di Donfrancesco,

Member of the Executive Committee



EVOLVING DEMOGRAPHY AND CONSUMER BEHAVIOR

Global population growth is accompanied by greater urbanization, which leads to increasing demand for access to basic services and technological advancement. The balance of economic power is shifting, with an expansion of the middle classes in Asia and Africa which is supporting demand for premium goods and services that enhance the individual's personal sense of well-being. These trends are transforming how we all interact, communicate, and travel.

By 2030

of the world's population is expected to live in cities.

2030

x2

the urban poulation in developing countries while the area covered by cities could triple.

2050

more than

The number of people over 60 will more than double and will represent more than 25% of the world's

Challenge for customers

Whether in the consumer electronics, food, or personal hygiene sector, end-users today expect manufacturers to offer them easy-to-use, multifunctional products that are unquestionably safe and sustainable. They increasingly want products not only to perform the functions for which they were designed, but also to contribute to their health and well-being. When it comes to sectors such as the automotive, construction, and aeronautics sectors, consumers expect the solutions used to be robust and sustainable, not only enhancing their quality of life but also helping reduce energy consumption.

Our response

Understanding our customers' needs is key. We seek to constantly improve our knowledge of their environments and we meet with key players in our markets (e.g., aeronautics, automotive, agri-foods, etc.) all around the world. During meetings like Tech Days, specialists in R&I, marketing and business experts from all relevant Group activities take part, demonstrating to our customers the added value and potential they can derive from Solvay as a multi-specialist, operating along the entire value chain. This allows us to develop innovative and competitive solutions precisely tailored to the present and future demands of our customers' end-users.

Our solutions

High temperature performance for batteries

To improve the storage capacity of renewable energies, LiTFSI is the best lithium salt for electrolytes. It can easily operate at high temperatures, allowing the development of energy-efficient hybrid vehicles with higher performance than combustion engine-powered cars.

(□) Our first multi-client Tech Day in China

In 2017, Solvay held its first multi-client Tech Day in Shanghai, China, attracting more than 100 customers, partners, and professionals from the agrochemical sector. The Group shared innovative solutions for the emerging agrochemical markets: its new technologies meet a growing need in crop nutrition and protection as well as an



increasing demand for safer and more efficient solutions, compatible with the new farming practices expected by our customers. This event allowed the Group not only to reinforce its relationship with customers and better understand their new needs and requirements, but also demonstrate the value of its multi-specialty model.

More than

100

customers, partners and professionals



INNOVATION ACCELERATION

Transforming how we live, work, and consume, the digital revolution has reshaped most of our industries and sped up innovation cycles to keep pace with the unheard-of rate of evolution in consumer expectations. Smart production systems both optimize the use of resources and reduce carbon emissions. Through the constant introduction of smarter technologies, industries will continue to develop, and in this context, competitiveness and sustainability rely on innovating to meet ever more challenging demands.

2024

89%

of new cars will have embedded connectivity (vs. 15% in 2014).

60%

annual growth rate in 3D printed products, the industry's fastest-growing segment.

2030

125 bn

connected devices worldwide, jumping 12% on average annually from 27 bn in 2017 to 125 bn.

Challenge for customers

To remain competitive in their own markets, manufacturers need to constantly improve the performance of their products while making their processes more efficient, enabling them to operate more responsibly and more sustainably. Achieving these goals frequently requires bold and disruptive innovations that take account not only of leading-edge scientific and technological research, but also of specific market realities.

Our response

Our scientists and engineers are focused on the specific needs of our customers. Thanks to our broad multi-specialty portfolio of technologies and our process of innovation excellence, we can provide the fastest response with best efficiency, shortening time to market in all aspects of the innovation process from ideation and market validation all the way to scale-up and intellectual property protection.

Our solutions Corporate R&I goes digital

We have decided to make a step change in Corporate R&I using digital technologies. Among them are Simulation & Modeling, in order to speed up time to market and focus on the most promising solutions, and Artificial Intelligence & Machine Learning, to boost selected business projects.



Our customers have increasing expectations of the partnership to drive customized innovation together. Our ability to understand their needs, our expertise in materials and chemistry, and our will to develop long-term collaboration and innovate with them will help them turn their challenges into solutions for more growth and a more sustainable planet.

Du Hua, Member of the Executive Committee



RESOURCE CONSTRAINTS AND DEMAND FOR SUSTAINABILITY

As demands rise, the finite resources we rely on are growing ever scarcer, the planet is under increased threat from climate change, and economic pressure is limiting the availability of land for food production. The need for sustainable solutions in all areas of industry to prevent and fight these changes has never been greater.

2030

more than

3.9 bn

people affected by water scarcity.

2030

-20%

available agricultural land per person.

2030

40%

increase in greenhouse gas emissions, leading to an average temperature rise

Challenge for customers

All our customers are focused on offering their own consumers increasingly energy-efficient and environmentally-friendly products and services. In the transport sector, manufacturers seek to comply with ever more stringent regulations on CO₂ and particulate emissions while meeting demands for safer and more fuel-efficient travel. In agri-foods, farmers and food processors urgently require greater agricultural yields and improved management of resources. The chemical industry is a key stakeholder in these developments: technological breakthroughs in industry often rely on groundbreaking innovations in chemicals.

Our response

Our solutions contribute to meeting tomorrow's sustainability challenges, whether by providing cleaner forms of energy to a growing number of consumers, satisfying the increasing demand for food, or creating cost-effective and urban-focused mobility solutions. Every solution we develop is assessed according to our Sustainable Portfolio Management (SPM) methodology. Applied to all our key processes, to our pipeline of innovations, and to our portfolio of existing products, it allows us to assess the alignment of each product in each market with sustainability imperatives.

Our solutions

Improvement in mineral refining

For the growing market of mining industries, Interox® hydrogen peroxide solution is a reagent offering attractive environmental characteristics which can enhance the recovery of metals, detoxify water effluents after metal extraction, and improve operational sustainability in water management.



(口) Solvay supports open innovation

Solvay has joined the World Alliance for Efficient Solutions founded by Bertrand Piccard, the initiator of the zero-emission plane Solar Impulse, which is based on the belief that through open innovation, clean technologies can bring a fully sustainable society closer. As a member of the Alliance, Solvay will interact with start-ups and inventors, helping transform their mobility and energy projects into reality through its experience, capacity and industrial know-how.



INNOVATIVE SOLUTIONS FOR OUR MARKETS

__ Thanks to our core technologies, expertise, and skills we have developed solid positions on seven distinct markets with high growth potential: consumer goods and healthcare; automotive and aerospace; resources and environment; agro, feed and food; electrical and electronics; building and construction; and industrial applications. Some 70% of our portfolio consists of products from activities that constitute our growth engines, and our revamped customer profile includes major names in automotive, aerospace, electronics and agrochemicals among others.



CONSUMER GOODS & HEALTHCARE

Improving the quality of life

Consumer behavior is changing as populations in mature economies age and the middle classes in Africa, Asia, and Latin America grow in size. Consumers want easy-to-use and multifunctional solutions that are tailor-made, safe, sustainable... and that benefit their health and well-being.



Consumer Goods

From smart textiles to personal care, our broad portfolio offers innovative, sustainable and competitive solutions. The world's first biodegradable yarn, Amni Soul Eco®, is one of our smart and sustainable products. Polycare® Split Therapy is a new formulation to repair split ends. Made from natural guar polymers, this technology is optimized to deliver perceivable and durable repair of split ends from the first use without compromising on sensorial performance. The bio-based solvent line Augeo® provides active and efficient solvency power for heavy cleaner formulations and homecare fragrances.

Healthcare

The industry's broadest selection of high-performance thermoplastics for implantable and non-implantable medical devices, our advanced medical-grade polymers include Radel® PPSU, with excellent impact strength, and Veradel® HC PESU, resistant to high temperatures. RhodaPhos® is a reagent providing high-purity, safely scalable phosphoramidite chemistry to enable the manufacture of oligonucleotides essential to the development of antisense drugs, which address severe genetic disorders such as Huntingdon's disease.



(\square) An innovative material for dentistry

Building on its high-performance polymers, Solvay has developed a new dental business line with an innovative material that replaces metal in removable partial denture frames. Solvay Dental 360™ brings two key advantages: it enables a digital workflow that accelerates the work of dental laboratories and dentists while offering patients more comfortable and natural-looking dentures than traditional metal frames.



AUTOMOTIVE & AEROSPACE Cleaner mobility

Growing concerns about sustainability and stringent regulations on CO_2 and particulate emissions are driving the automotive and aerospace industries to develop more sustainable mobility systems. We help make transportation cleaner, safer, and more energy-efficient.

Lightweighting

Solvay's materials allow manufacturers to build the lightest vehicles possible. Specialty polymers such as KetaSpire® PEEK, which has excellent mechanical properties at high temperatures, can replace metal. Among our aerospace solutions, Cycom® is a structural composite with excellent fire retardant and anti-corrosion properties.

Electrification

Batteries with higher energy density, greater power, and lower cost are vital for the future of electromobility. Meeting the highest requirements in terms of safety, temperature and chemical resistance, our solutions address the needs of the entire battery system. Our newly acquired Energain™ technologies, including electrolyte additives, salts, binders and separators, improve lithium-ion battery performance. Fluorinated materials offer higher stability, allowing batteries to work at higher voltages, to increasing range and reducing costs.

Powertrain efficiency

In all types of powertrains, the engine and transmission system are potential areas for significant energy efficiency improvements. Our solutions for air loop management and heating and cooling technologies, as well as those aiming at enhancing new drivetrain systems boost powertrain



performance. We provide effective thermal control solutions, optimized acoustic systems and corrosion protection for automobile powertrains. Nocolok® Flux, a high-quality fluxing agent used for brazing aluminum components, is an industry standard for aluminum heat exchangers.

Green technologies

Our silica products allow tire manufacturers to decrease rolling resistance by up to 25%, which equates to 7% less fuel consumption. The performance of the catalytic converters that minimize pollutant emissions from gasoline combustion is boosted by several of our chemical products, including Optalys®, which fits modern engines like hybrids or GDIs.

New composites that make cars more fuel-efficient

Replacing metal and solid plastic structures by composite materials in car manufacture makes vehicles lighter, reducing their fuel consumption and thus their emissions. SolvaLite™ composites are up to 40% lighter than metal and cure much faster than traditional composites. As such, they increase composite manufacturing efficiencies, making them cost-effective for high-volume production runs.





Solvay's sustainable solutions for the oil & gas, mining, energy generation, and energy storage sectors help its customers offer energy-efficient and environmentally-friendly products and services to their consumers.



Oil & Gas

Solvay offers the industry's widest range of oilfield additives including high-performance polymers such as friction reducers and Tiguar® guar derivatives that allow customers to stimulate wells with recycled water and under extreme conditions. Our Rhodibloc® cement additives provide superior fluid loss and gas migration control to ensure well integrity.

Mining

Fulfilling or exceeding the most stringent technical and environmental specifications, our specialty mining reagents help customers in the mining industry improve their productivity and reduce their operating costs for the recovery of many metals and minerals, especially copper, alumina, gold, silver, uranium, nickel, cobalt, and polymetallic ores. To enhance the recovery of metals and detoxify water elements after metal extraction, we supply Interox® hydrogen peroxide.

Energy solutions

Our solutions are used to produce and store renewable energies and to improve energy efficiency. We manufacture highly resistant films such as Halar® ECTFE that provide excellent UV protection for photovoltaic panels while enabling them to achieve high performance in solar energy capture. We are also focusing our attention on developing technologies that meet the specific needs of battery manufacturers, with a number of R&I projects underway.

Environmental protection

To make the planet a cleaner, healthier and safer place to live, our solutions support air and water treatment and soil remediation using filtration, gas separation, absorption, and chemical reactions. To meet the demands of waste-to-energy incineration, industrial boilers, cement manufacturing, etc., we provide Solvair® Solutions, a range of products and systems for air emission control and associated waste management. Our systems are used in particular for processing gaseous waste.



(口) Capturing heavy metals from wastewater

Tighter regulations and more frequent controls in Europe, North America and Asia put increased pressure on industrial sites to reduce the level of heavy metals in wastewater. With Capterall™, we offer a unique and complete solution – product, process and services – to capture a wide range of heavy metals from wastewater. The solution also reduces plants' freshwater consumption by recycling the water and reusing it in the process. Capterall™ is a highly efficient, cost-effective, pollution peak control and easy-to-deploy solution.





AGRO. FEED & FOOD

Sustainable living and environmental protection

The growing global population requires greater agricultural yields and better resource management. Solvay's unique portfolio of innovative solutions supports customers from farmers to food processors, helping them operate responsibly and sustainably.

Agriculture

We offer safe, eco-friendly solutions for agriculture that maximize efficiency and competitiveness while boosting quality and productivity across the value chain. The AgRho® N-Protect product family are advanced and eco-friendly formulations of nitrogen stabilizers. Applied to fertilizers, our solution increases crop yield by up to 20%, while reducing greenhouse gas emissions and improving water quality. We actively participate to the agriculture transformation by supporting new farming practices such as tailor made agrochemicals formulations for drone applications, combining benefits and value creation for farmers and consumers.

Feed

Solvay offers a range of highly efficient feed supplements for livestock used for the prevention and control of diseases. They also optimize the flow of nutrients that are essential for animal health. Making powdered content easier to process and transport, Tixosil® 38A is a silica product that helps powders flow. In the aquaculture industry, where parasitic diseases can seriously affect production, we have developed a solution made of oxygenated water, Paramove®, that removes sea lice from salmon, leaving only oxygen and water in the environment.



(\square) Seed and grain care

With increasing demand and a limited potential of cultivated area, safe and cost-effective yield increase is crucial for future developments in agriculture. AgRho® S-Boost is a breakthrough seed-applied technology based on naturally-derived macromolecules. It offers a root booster effect compatible with seeds, based on a biodegradable formulation and the related intake of nutrients. The formulation then acts as a vitamin booster to ensure rapid growth, healthy plants, and ultimately better yield.





Food

Helping the food industry endeavor to provide consumers with the healthier and more convenient food they increasingly demand, we offer manufacturers a wide range of products for food preparation, food preservation, healthier living, improved food quality, food safety, and taste enhancement. We have developed a range of Vanifolia® products, including one specifically designed to mask whey and pea protein off-notes, often employed by manufacturers to supply high protein content to nutrition, health, and wellness product lines.



ELECTRICAL & ELECTRONICS

Connectivity and energy efficiency

We work closely with manufacturers of electrical and electronic equipment to ensure that our advanced materials are fully geared to their needs, enabling them to develop new miniaturization technologies and offering them new perspectives in design, safety and energy performance.

Design & Connectivity

The increased miniaturization, conductivity and complexity of electrical components means greater demands on materials, especially for high temperature operation and dimensional stability. For structural components used in smart mobile devices, the Kalix® HPPA range provides high strength, rigidity, and a high-quality surface finish along with improved processing. In structural mobile electronic components such as housings, covers, chassis, and frames, where strength, rigidity, and aesthetics are important, our compounds with high glass content can replace metal.

Safety

Higher temperature resistance, more efficient fire protection and safety of use, the key requirements of modern electrical equipment, are provided by our wide range of polyamide solutions. In high-temperature automotive applications, our specialty polyamide Amodel® PPA can replace metals, offering particularly good resistance to continuous heat.

Process efficiency

Electronics markets require very pure, highly technical components. We provide chemicals and materials to meet the demanding technical requirements of this industry. With increasingly small device geometries, the need for advanced cleaning solutions to manufacture the future generation of semiconductors is growing very significantly. Interox® PICO hydrogen peroxide is the reference for semiconductor manufacturers.



BUILDING AND CONSTRUCTION

Sustainability and energy efficiency

Demand is growing for longer-lasting buildings that consume less energy and enhance their users' well-being. Our solutions focus on increasingly stringent environmental performance certification systems in passive residential and commercial buildings





(☐) A high-performance material for Li-ion batteries

Solef® PVDF – our partially fluorinated semi-crystalline polymer with excellent thermo-mechanical and chemical properties – is a favored material for the lithium-lon batteries used in electric vehicles: it brings many advantages to the industry when used as a binder in the formulation of electrodes as well as in the design of the separator.



Energy savings

Buildings represent 40% of the world's energy consumption and CO₂ emissions. We help develop solutions for energy-saving triple-glazed windows with Soda Solvay® soda ash, and for foam wall coverings to maintain comfortable temperatures in nearzero-energy housing. We also offer easy-to-use and very longlasting products for cooling and heating systems. Our Alve-One™ sustainable foaming solutions help producers of thermoplastics and elastomers achieve the specific properties they are seeking for their plastics, including insulation, strength, and lightweight.

Resource efficiency

Drinking water is becoming increasingly scarce in many countries, so the watering of plants, trees, and green facades in cities often relies on reused rainwater, creating a growing need for our plastic piping and fittings for water and drainage. Prolonging the life of construction materials, our Cyasorb Cynergy Solutions® B series UV stabilizers deliver exceptional UV and long-term thermal protection to polyolefins used in outdoor building and construction applications.

Protection & Safety

Solvay is a global leader in emulsion polymerization, enabling the conversion to water- based systems with specialty surfactants and monomers. APE¹ and VOC²-free products including Rhodasurf® and Aerosol® surfactant solutions help solve our customers' unmet needs.

- ¹ APE: Alkyl Phenol Ethoxylates
- ² VOC: Volatile Organic Compounds



INDUSTRIAL APPLICATIONS

Efficiency and value

With ever stricter regulations to conform to, manufacturers rely on innovations for more efficient processes and more competitive products. Our materials and solutions help them operate more responsibly and give their products longer lifetimes, creating more sustainable value.

Industrial & protective coatings

Solvay offers a wide range of binders, solvents, pigments and additives and it is constantly developing formulations to provide benefits based on surface modifications: enhanced surface wetting, improved adhesion to substrates, enhanced color development, strong corrosion protection, and resistance to aggressive fluids. For industrial cleaning, resin clean-up, foundry resins, paint stripping, and paints and coatings, we have an ecofriendly biodegradable solvent, Rhodiasolv® IRIS.



A combination of properties for highly demanding industries

Our solutions offer excellent resistance to UV irradiation, chemicals, fire and abrasion, and have applications in many industries. They are widely used in anti-corrosion applications as a lining or in self-supporting constructions (piping). Its excellent fire resistance properties and chemical resistance make Halar® ECTFE a product of first choice in wire and cable applications, in communication cable or specialty cable.





Enhanced adhesion on difficult surfaces

Sipomer® PAM and WAM series specialty monomers provide exceptional adhesion onto difficult substrates, such as aluminum, cold steel, glass, concrete, aged alkyd, wood, and plastic in waterborne systems. This range of products can boost binder performances in terms of adhesion and corrosion resistance. They also offer a viable solution for direct-to-metal applications.





Metal & surface treatment

We create ingredients and formulated products that modify and clean the surface of several metallic and organic substrates, improving the performance of finished products and enhancing their shelf life. The Supersol® lubricant for steel cord for more fuel-efficient tires exemplifies our environmentally responsible solutions.

Industrial equipment protection

The high demands of industrial equipment entail combining resistance to corrosion, temperature, and aggressive chemicals. Solvay has created and formulated specific polymer products that can even replace certain metals under particularly harsh conditions of use.

Printing, inks & adhesives

We develop additives and solvents for the formulation of inks and adhesives, both waterborne and solvent-based, as well as solvents for thinners, in full compliance with recently adopted HSE regulations.

STAKEHOLDERS SPEAK

Planet (Gvt & NGOs)





The Sustainable Development Goals (SDGs) represent the principal agenda for the governments and NGOs that constitute Solvay's "Planet" stakeholder. Of the 17 SDGs set by the United Nations, Solvay has chosen to focus on those on which it can potentially make the highest impact and which are the most closely in line with its sustainability objectives.

44 Private-sector companies such as Solvay can be agents and accelerators of change as we implement the SDGs, building a better future for the planet. ??

Solvay focuses on:















CAROLINE PETIT

We are pleased to see groups like Solvay, who have decided to make sustainability a priority. Private-sector companies can play a leading role, spreading ideas about sustainability in a creative way.

CAROLINE PETIT

Being an agent of change entails explaining the SDGs internally to raise the Group's own employees' awareness of sustainable development, ensuring that the goals are anchored in the choices they make.

Addressing gender balance in scientific professions is very important. It means creating an environment that encourages the recruitment of young female engineers and develops their career opportunities.

23% of women in the Group

106 nationalities represented at Solvay

11 The success story of the zero-emission plane Solar Impulse played a positive role in engaging worldwide media on the issues of sustainable development. **99**

——— Solvay joined the Ellen MacArthur Foundation as a Global Partner, the only one for the chemical sector, in early 2018. The Foundation works with its partners – all influential businesses across key sectors of the economy, to demonstrate circular innovation at scale.



We are delighted to welcome Solvay as a Global Partner of the Ellen MacArthur Foundation. The chemicals industry lies at the heart of the global economy, so holds great potential to spark system-level change in the move towards a restorative and regenerative circular economy.

HOW WE CREATE SUSTAINABLE VALUE

The value created by Solvay is based on more than financial performance alone. We are developing an agile, customer-centric organization and a stronger business model to create sustainable value for our stakeholders. Our approach is to optimize the use of our resources to create financial, environmental, social, and economic wealth.

RESOURCES WE USE

ECONOMIC INPUT¹



ENVIRONMENTAL INPUT



SOCIAL INPUT





OUR MARKETS

With a balanced portfolio – both in terms of markets and geography – we work in close partnership with our customers to develop innovative solutions that create sustainable value today and tomorrow.

Percentage of net sales per market:

Percentage of flet sales per market.				
17%	Consumer goods and Healthcare	6%	Electrical and Electronics	
23%	Automotive and Aerospace		Building and Construction	
	Resources and Environment		Industrial applications	
11%	Agro, Feed and Food	2170	applications	

AN ADVANCED MATERIALS AND SPECIALTY CHEMICALS COMPANY

We have leading positions on fast-growing markets where we provide innovative tailor-made solutions to our customers.

Advanced materials

Innovation-driven businesses in composites and specialty polymers, providing solutions for sustainable mobility, lightweighting, CO₂, and energy efficiency.

49% of Group Ebitda

Advanced formulations

Customized specialty formulations for surface chemistry and liquid behavior, maximizing yield and efficiency, and minimizing eco-impact.

21% of Group Ebitda

Performance chemicals

Leading positions in chemical intermediates through scale and technology, developing applications and industrial innovation for optimized costs.

30% of Group Ebitda

HOW WE DO BUSINESS

Three key behaviors

We focus on three key behaviors that give impulse to a new mindset and increase customer-centricity and our capacity to innovate faster: I trust, I take smart risks, I focus on customer needs.

Solvay Way

This defines the Group's approach to sustainability, governs all our operations, and ensures that we act responsibly at all times.

Code of Conduct

This lays down a series of principles that define the standards of ethics and integrity in the workplace, in doing business, and as a corporate citizen.

VALUE WE CREATE

ECONOMIC OUTPUT1



ENVIRONMENTAL OUTPUT

Greenhouse gas intensity

5.53
Kg Co₂ eq. per € EBITDA

Sustainable solutions (SPM)

49%
of Group sales

Air emissions
Nitrogen oxides
Nitrogen oxides

9.5
thousand tons
Sulfur oxides

4.6
thousand tons

SOCIAL OUTPUT



¹2017 underlying figures

⁵ Rate of accidents with medical treatment, with or without work stoppage



² Excluding perpetual hybrid bonds

³ Including perpetual hybrid bonds

⁴Estimate based on recommended dividend

OUR APPROACH TO RISK MANAGEMENT

——— Facing global economic and political uncertainty, evolving power balances, changing growth dynamics, shorter market cycles, greater sensitivity to climate change and energy transition issues, and rapid technological evolution, Solvay reviews all its risks annually to ensure it can achieve its strategic objectives while fully complying with laws, regulations, and the Solvay Code of Conduct. Solvay's risk management approach is always considered in the context of sustainability and enriched by stakeholder dialog. It enables us to anticipate and adapt to opportunities and risks in a volatile global marketplace.

As 2017 represented a milestone in our transformation, we paid attention specifically to assessing major projects linked to our portfolio upgrade – whether acquisitions, major capital investments, or transversal projects – with an appropriate risk assessment methodology, while carefully monitoring evolutions in our markets and our global environment. Along with risks linked to Solvay's industrial operations, the Group focuses on ethics and compliance, as well as climate-related risks.

EVOLUTION OF SOLVAY'S MAIN RISKS

We have designed a dynamic, highly-decentralized process where key players assess the risks in their areas of responsibility or expertise, at all levels of the Group. A dedicated dashboard is updated twice a year both for progress on mitigation actions and for new developments in the risk environment.

Criticality level	Risk	Trend in criticality level	Corresponding materiality aspects
High	Security	•	No significant link
1	Climate related physical risks	(-)	Greenhouse gas emissions Water and wastewater management
	Industrial safety		Accident and safety management Employee health and safety
	Transport accidents		Waste and hazardous materials management
	Ethics and Compliance	•	Management of legal, ethics & regulatory framework
	Climate transition risks*	N/A	Greenhouse gas emissions Energy management Sustainable business solutions
	Cyber-risk		Data security and customer privacy
Moderate	Chemical product usage		Hazardous materials management Sustainable business solutions

 $[*] emerging \ risk - newly \ developing \ or \ changing \ risk \ that \ may \ have \ a \ significant \ impact \ over the \ long \ term, \ which \ will \ need \ to \ be \ assessed \ in \ the \ future.$

(\square) Contributing to the transition to a climate-friendly economy

66 Beyond taking the necessary steps to anticipate and tackle climate-related risks, we believe that taking effective action will allow us to turn such risks into opportunities and a significant competitive advantage.

Vincent De Cuyper, Member of the Executive Committee and Climate Supervisor

Concerns over climate change are higher than ever today and companies must adapt to growing regulatory, environmental, and consumer pressures. Solvay focuses on two specific risks in this regard: climate transition risk and climate-related physical risks.

We develop concrete actions to contribute to the transition to a climate-friendly economy, among them:

- We align the transformation of our business portfolio with our climate commitments.
- We have appointed a Climate Supervisor at Executive Committee level, in charge
 of ensuring that climate related aspects are well considered in the Group's strategy
 and operations.
- Through our Sustainable Portfolio Management (SPM) tool, we are deeply committed
 to developing climate-positive solutions which will help our customers address climate
 issues. SPM criteria include climate-related criteria aligned to 2° C scenarios.
- We apply an internal price of €25 per ton of CO₂ equivalent to greenhouse gas
 emissions in all our investment decisions, so climate-related impacts form part of our
 strategic choices.

Solvay endeavors to identify, assess, and manage climate transition-related risks, as recommended by the Task Force on Climate-related Financial Disclosures (TCFD).



-24%

Reduction of Greenhouse Gas emission over two years

49%

Net sales generated by sustainable Solutions

26%

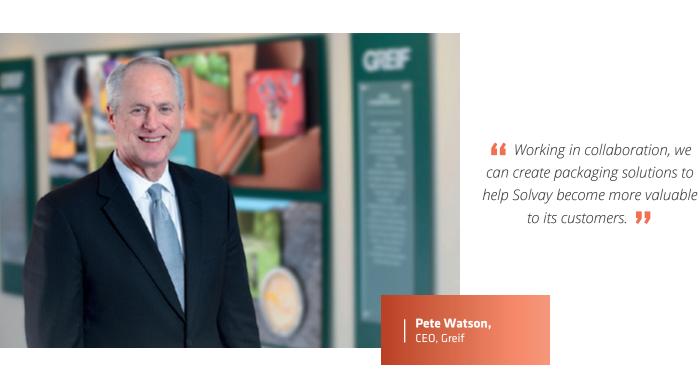
Solutions linked to climate change mitigation (lower greenhouse gas emissions and/or improved energy efficiency)

STAKEHOLDERS SPEAK

Suppliers



_____ Greif is one of Solvay's principal suppliers of industrial packaging. The American-based company recently received a Gold rating from EcoVadis for its sustainability performance. Solvay selected Greif for a Key Supplier Management program now being piloted.



PETE WATSON

I appreciate the quality of the dialog and relationship between Solvay and Greif. We have put together crossfunctional teams to solve problems, create value, and better understand each other's strategic needs.

We are one of Solvay's key suppliers, which points to a collaborative relationship in planning and setting goals. I appreciate the fact that Solvay allows us to assist it in achieving its sustainability goals. Being strongly challenged in this area has helped us progress, and we are now a gold-level performer in CSR ratings.

In the future, I hope we can further improve our dialog outside the sourcing/selling relationship and become more involved in Solvay's strategic thinking. This will allow us to collaboratively create more value for Solvay throughout its supply chain.

66 Solvay challenges us strongly in order to meet its needs. We're focused on what is important to Solvay. This will allow us to collaboratively create more value for Solvay throughout their supply chain.

FRÉDÉRIC COLIN,

Wood Purchasing Manager France, Egger Rambervillers

For the Egger Group, which manufactures decorative wood-based panels for the furniture industry, sustainable development is a fundamental principle. All our sites are integrated to create a closed circuit, from the tree to the finished product. This "win-win" partnership enables us to commercialize by-products of our activity (sawdust pellets) and to help Solvay reduce its environmental footprint, by using this biomass as fuel at its neighboring site in Dombasle.

CO₂ emissions reduced by 20.000 tons at Dombasle site in 2017

Our partnership with Solvay meets all our expectations: we share the same conviction and the same commitment with regard to the environment. We appreciate the spirit of collaboration and the good relations established with the Group, which are necessary to ensure that this is an enduring collaboration.

Frédéric Colin

"We stand for the responsible use of the raw material wood" - Egger Group (Austria)



TWO COMPLEMENTARY GOVERNANCE BODIES

Our commitment to sustainable value creation is embedded at the very core of our organization and governance structure. Acting in concert, our two governance bodies – Board of Directors and Executive Committee – are responsible for the Group's long-term strategic approach, pursuing the vision of Solvay's founder and implementing our transformation strategy. The Board of Directors is entrusted with steering Solvay's development strategy while advising the Executive Committee, which oversees its business operations.

Nicolas Boël, Chairman of the Board of Directors, and Jean-Pierre Clamadieu, Chairman of the Executive Committee and CEO, maintain regular and constructive dialog, sharing information and embodying Solvay's collaborative spirit at the highest level.

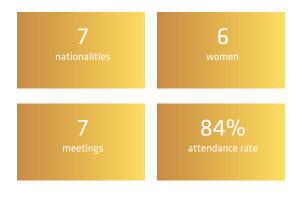
THE BOARD OF DIRECTORS STEERS SOLVAY'S STRATEGY

Solvay's Board of Directors promotes good governance practices that create a transparent dialog with the Group's stakeholders. It decides on general strategies and policies and supervises their implementation.

The 16 members of the Board of Directors come from a variety of backgrounds, and bring their experience, skills, and expertise in areas relevant to Solvay's strategy, its key markets, and the crucial challenges of its business environment.

Four specialized committees (Audit Committee, Finance Committee, Compensation Committee, and Nomination Committee) provide the Board with advisory opinions in their individual areas of competence. For such issues as Innovation, Strategy and Sustainability, the complete Board is involved and receives training through dedicated sessions and workshops. The Board thus devotes at least one meeting per year to an update on trends in global sustainable development issues, including climate change risks and opportunities.





During the period of transformation of Solvay, the Board has made sure that its governance has been agile enough to allow the Group to undertake its portfolio upgrade effectively, with meetings and frequent discussions to support the Group's decisions. In 2017, the Board also guided and supported Solvay's strategic transformation relating to the alignment of the organization with the Group's strategy, major capital expenditure projects, and the divestment of the Polyamides business.

(The Board visits Asian teams

To improve Board members' knowledge of the Group's operations in the field, site visits are regularly organized. In 2017, the Board visited the Group's R&I center in Seoul, South Korea, as well as two plants in China and South Korea. This trip gave Board members the opportunity to meet with local operational teams and to be confronted with the business and industrial reality of these Asian operations. In South Korea, for instance, the R&I center visit demonstrated the level of ambition of Korean industrial players and the importance of the partnerships Solvay has developed with them. This trip also demonstrated to Board members the potential impact of digital technologies on the Group's manufacturing activities.





I particularly appreciated our visit to a major customer – and I was very impressed by how much quality time our entire Board devoted to interacting with one of our customers' executives and top staff, almost half a day. You could hardly imagine a stronger message about customer orientation, which is critical to the future success of Solvay, and transparency, which is a core value of the Group.

Gilles Michel, Board member

Asia with Solvay – was a wonderful experience. I was particularly impressed with the dedication, loyalty, and enthusiasm of the staff and their understanding of and belief in the company's strategy, businesses, Solvay Way, and sustainable innovation. These extremely competent and industrious local teams will no doubt help us achieve our future growth plans for the region.



Rosemary Thorne, Board member

THE EXECUTIVE COMMITTEE OVERSEES BUSINESS OPERATIONS

As Solvay's principal executive organ of governance, the Executive Committee plays an entrepreneurial role and fosters operational agility.

An expanded, more diverse Executive Committee

In early 2018, Solvay announced that it has expanded its Executive Committee with three new members, in line with the Group's commitment to improve its customer focus to support its growth strategy. This new, more diverse team reflects the profoundly transformed Group, and offers a good mix of operational, international and customer experiences while bringing a focus on talent management.

7 members 5 nationalities

17 meetings

100% attendance rate



Jean-Pierre Clamadieu



Karim Hajjar



Vincent De Cuyper



Augusto Di Donfrancesco



Du Hua



Pascal Juéry



Cécile Tandeau de Marsac

The Executive Committee is collectively responsible for Solvay's overall performance and for protecting the Group's interests, ensuring that the Group is looking to the long term. It gives shape to the strategy, steers the Group's business portfolio, and ensures that value creation targets are met. Each member is responsible for overseeing a number of Global Business Units (GBUs), Functions, or Zones. Although Solvay's GBUs enjoy a high level of autonomy, the Executive Committee is responsible for optimizing the allocation of human, financial, and material resources to achieve the highest possible level of performance and value creation on a sustainable basis.

(Main achievements in 2017

In 2017, the Executive Committee focused on key milestones in the Group's transformation strategy, including completion of the sale of Acetow; divestment of Emerging Biochemicals and of the Polyamides business; and the definition and implementation of the transformation program aiming to make Solvay faster, simpler, and more customer-focused. It supported several strategic initiatives, such as the implementation of Salesforce, the CRM system, throughout the Group, and the development of major partnerships with customers at the highest level.

DRIVING SUSTAINABILITY

Sustainability is one of the essential driving forces of Solvay's overall strategy and performance and has long been deeply rooted at every level of the company, starting from the top level with Jean-Pierre Clamadieu's membership of the Executive Committee of the World Business Council for Sustainable Development (WBCSD).



BOARD OF DIRECTORS EXECUTIVE COMMITTEE

Definition of strategy and monitoring

- · Determine strategy
- Monitor execution, including results of the annual Solvay Way self-assessment
- Within the Executive Committee, the Climate Supervisor – first appointed in 2017 – ensures that climate issues are factored into every decision taken by the Group



CORPORATE SUSTAINABLE DEVELOPMENT FUNCTION

Coordination and supervision

- · Reports directly to the CEO
- Consolidates Solvay Way self-assessment
- Presents the results to the Board of Directors and the Executive Committee



SOLVAY Waly

CHAMPIONS AND CORRESPONDENTS

Deployment



EMPLOYEES

Day-to-day action

- Ensure the deployment of the Solvay Way process in all Solvay sites, GBUs and Corporate Functions
- Motivate their colleagues to fulfill precise objectives
- Set action plans to improve their processes and practices
- Assess the progress they have made
- Identify directions for improvement for each stakeholder group
- Design improvement plans to better include sustainability in their entities

(Solvay Way, our approach to sustainability

Solvay Way encompasses all aspects of the Group's sustainability approach to doing business. It ensures that social and environmental implications are integrated into the company's strategy, operations and decision-making, by translating our ambitions for more sustainable development into concrete actions and clear responsibilities.

SOLVAY Waly

6 stakeholders

23
Solvay Way commitments

48
Solvay Way practices



One of our most exciting challenges is to embark all our employees in the sustainability journey. Solvay Way was designed to make everyone understand, from managers to operators, how they can contribute to the Group's ambition: creating a sustainable value shared with our stakeholders. Solvay Way makes the connection between our stakeholders' rising expectations, the engagement of our employees, and the financial and extra-financial value we create.

Pascal Chalvon-Demersay, Group Chief Sustainability Officer

ENGAGING WITH OUR STAKEHOLDERS

66 Solvay supports the United Nations Global Compact principles. We are committed to continuing to advance these principles within our sphere of influence by incorporating them into our strategy, culture, and day-to-day operations. ""

Jean-Pierre Clamadieu, **Chairman of the Executive Committee and CEO**

In a fast-changing world, the Group's close relations with its stakeholders enable it to understand the present and future challenges that its customers face, as well as the trends that are shaping consumers' demands.

Solvay has identified six categories of stakeholders: customers, employees, investors, suppliers, local communities, and the planet (which includes governments and NGOs). Engaging with

them – and first and foremost with our employees – forms the basis of our strategy and actions and defines the frame in which we operate.

We take our roles as a chemicals producer, an employer, and a corporate citizen very seriously, and we want to promote this commitment worldwide.



Solvay is committed to the Responsible Care® World Charter, which aims to achieve excellence in health, safety, and environmental performance through continuous improvement in the safe handling of chemical substances.



In 2017, the Group renewed a Corporate Social and Environmental Agreement with IndustriALL, the global union for the chemical, extractive, and manufacturing industries, ensuring that basic labor rights and the Group's standards are respected for all its employees on all its sites.



True to its tradition of social protection, Solvay unveiled a bold initiative in 2017: Solvay Cares, a minimum level of company social benefits extending to all its employees, wherever they live.



As a signatory member of the UN Global Compact, Solvay commits fully to upholding its ten principles, which guarantee that companies meet fundamental responsibilities in the areas of human rights, labor, the environment, and anti-corruption.



Solvay has an impact and contributes to the UN Sustainable Development Goals (SDGs) through its daily business. We have chosen to focus on seven of these: SDGs 3, 4, 7, 8, 12, 13, and 17.

ISO 26000

The voluntary international standard ISO 26000 on social responsibility is our point of reference. Its stipulations, enshrined in Solvay Way, ensure that we act responsibly in every part of our business.

A BALANCED REMUNERATION POLICY

At all levels of the company, starting with the members of the Board of Directors and the Executive Committee, Solvay's balanced remuneration policy is closely linked to the successful implementation of its strategy and to meeting both financial and extra-financial goals. It reflects a balance between long term and short term.

A VARIABLE REMUNERATION COVERING 100% OF SOLVAY'S WORKFORCE

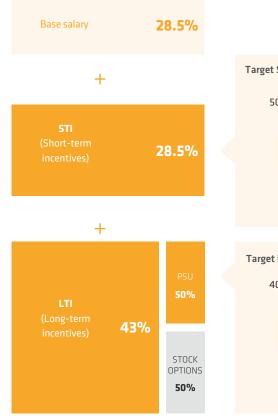
Covering both economic and sustainability objectives, Solvay's remuneration policy encourages the creation of sustainable value that stands the test of time while ensuring the achievement of short-term imperatives, which reflect the Group's global performance. 100% of our workforce have variable remuneration packages. Managers' short-term incentives are based on tailored targets, both financial and extra-financial. For the third year, all other categories of employees benefit from the Global Performance Sharing Plan, which incorporates economic and sustainable development targets. This program was negotiated with the Solvay Global Forum of union representatives.

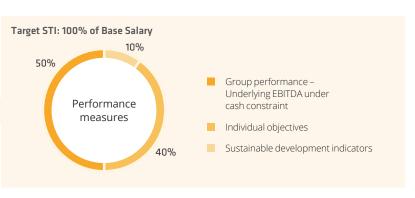
COMPENSATION OF THE CHAIRMAN OF THE EXECUTIVE COMMITTEE

In line with market practices, the compensation package of Jean-Pierre Clamadieu, Chairman of the Executive Committee, is balanced between a fixed base salary and both short-term incentives (STIs) and long-term incentives (LTIs). For the first time this year, in order to align LTIs with Solvay's broader definition of sustainable value creation, it included a metric on greenhouse gas intensity.

CEO remuneration

CEO total compensation at target for 2017







¹ new criteria applicable with effects from LTIs granted in 2017

SHORT TERM (THIS YEAR

STAKEHOLDERS SPEAK

Investors





_____ Candriam Investment Group, an asset management firm which is a pioneer in Socially Responsible Investment (SRI), analyzes not only Solvay's financial performance, but also its innovation strategy and its sustainability targets.

MARCO MISEREZ

When we analyze a company, we are particularly vigilant about its quality and competitive positioning, whether it is experiencing growth, its innovation policy, and its sustainability targets – all the factors that make it competitive and sustainable. Solvay meets these criteria, and that's why we include the Group in both our SRI and Innovation funds.

At Solvay, you realize that innovation is everywhere! If I had to pick just one innovation, it would be the solutions introduced by composite materials in the automotive sector, particularly in lightweighting. Although they are currently reserved for racing cars, they point to a genuine future trend.

MARCO MISEREZ

Solvay's management have a very clear strategy focused on specialty chemicals. Its family roots give it a great advantage because its support is assured on a long-term basis, and this allows it to take on such long-term investments as the Cytec acquisition.

We pay attention to the level of indebtedness of the Group. Solvay is clearly going in the right direction, particularly because of the transformation of its portfolio, which allows the creation of value over the economic cycle.

At Candriam we believe in innovation as a driver of growth and profitability, but more importantly in innovation that allows a company to have a sustainable competitive advantage.



Solvay General Assembly in 2017

€ 5.3 underlying net debt

66 Solvay's wide and diversified portfolio of activities in polymers and composite materials facilitates synergies and solutions offered to customers. 77

best-in-class company in the chemical sector in the coming years.

Tanguy du Monceau, Family shareholder



TANGUY DU MONCEAU

With Solvay Way, the Group has put sustainability at the core of its innovation-driven business, creating value for shareholders and for all stakeholders. The fact that employees benefit from a bonus linked to sustainability is very innovative. Taking the carbon footprint into account in the acquisition process as well as in product development is a great innovation, one that will be reinforced in the coming years. Governance, ethics, and transparency are key for us. It is important that the Group communicates what it is doing and how well it is doing accurately.

OUR SCORECARD

Des objectifs stratégiques pour stimuler la création de valeur durable

2017 and 2016 underlying and restated³ information (except for environment and social data). 2015 pro forma figures.

UNDERLYING EBITDA





Our 2017 performance

- Underlying EBITDA grew on average by 8.6% in the last two years¹ on a basis comparable with our mid-term objectives.
- Adverse forex conversion effects of -1.5% and scope effects of -0.7% related to small divestments meant that reported underlying EBITDA growth was 7.5%.
- This earnings growth is at the top end of our strategic objectives and a clear indicator of the progress driven by our enhanced portfolio.

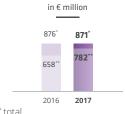
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- Volumes in Advanced Materials were up mainly in automotive, where Solvay continue to benefit from the replacement of metal with high-performance polymers, smart devices and growing application in the healthcare market.. Composites sales to aerospace ended the year slightly up, as the production ramp-up of the F-35 program and the LEAP engine compensated for the continuing decline in wide bodies.
- Advanced Formulations volumes grew, as 2017 marked a recovery year for the oil & gas market, and we have made great progress partnering with key industry customers, bringing them valuable solutions.

Key levers to achieve our objectives

- Volume growth driven by innovation and increased demand in key end-markets, including aerospace, automotive, electronics, batteries and healthcare as well as increased metal prices should stimulate higher demand in mining and modest peroxides growth.
- Excellence initiatives will support pricing power and offset inflation of fixed costs.

FREE CASH FLOW







Our 2017 performance

 Delivery on free cash flow is expected to exceed €2.4 billion cumulatively for 2016 - 2018 mid-term target, despite significant divestments. With €1.75 billion generated in the first two years, and more than €0.78 billion expected in 2018, Solvay is on track to materially exceed its free cash flow target on an equivalent portfolio basis.

Key levers to achieve our objectives

- · Stronger EBITDA underpinned by sustained organic growth
- · Reduced capital expenditure
- · Disciplined working capital management

CFROI





Our 2017 performance

 CFROI improved to 6.9%, bringing it to the same level as prior to the Cytec acquisition in 2015. This 0.8 percentage point improvement demonstrates the strong focus on improving returns

Key levers to achieve our objectives

- Focusing on growth in higher margin and less capital-intensive businesses.
- · Disciplined capital allocation.

Strategic objectives:







¹ at constant scope & forex

² Underlying EBITDA growth at constant scope and forex relative to 2016 conversion was 9.9%. As the scope and forex were already largely known at the time the mid-term objectives were set in the third quarter of 2016, the reported growth is taken for the calculation

³ reflecting the reclassification in discontinued operations of the polyamide activities to be sold to BASF

GREENHOUSE GAS INTENSITY





Our 2017 performance

- In 2017, our GHG intensity fell 4.4%, thanks to:
 - Ebitda improvement of activities for a significant part
 - New lasting emission reductions (150,000t CO₃) relating to our Solwatt energy and CO₂ efficiency program (deployed in 70 sites worldwide), new biomass-based heat production, and process improvement projects.
- · Over the last two last years, we have achieved a 24% reduction, exceeding our target for 2018.

Our challenge

- We remain more GHG-intensive than the average for the chemical industry.
- · Climate change and energy transition risks are high on the business and political agenda. It is imperative that businesses improve their environmental performance. While the 24% reduction in greenhouse gas intensity surpasses its objectives, Solvay remains vigilant and committed to improving over time.

Key levers to achieve our objectives

- · Continuously improve energy efficiency.
- Improve the CO₂ footprint of our energy mix through initiatives such as conversion to biomass firing or renewable electricity sourcing.
- · Reduce GHG emissions released from our chemical processing
- Apply an internal carbon price (€25 /metric ton of CO₂ eq.) to GHG emissions in all our investment decisions.
- · Include a metric on GHG intensity in senior management remuneration.



(\(\) New sources of renewable energy

In 2017, Solvay was involved in two new projects that reduce emissions by 100,000t CO₂ per year:

- · biomass-based heat production at a French plant, in addition to projects already initiated in Germany and Brazil.
- the Solvay Jasper solar farm in South Carolina, United States, which is planned to start in 2018.

500

15,000

SUSTAINABLE SOLUTIONS*





Our 2017 performance

- At the end of 2017, 49% of our net sales were classified as "Sustainable Solutions", significantly exceeding the objective, which reflects higher growth in this part of the portfolio.
- · Changes in the scope of the portfolio (positive impact of the Cytec acquisition and divestment of less aligned businesses) explain most of the progress; innovation programs aimed at developing more sustainable solutions also contributed.

Our challenge

· Circular Economy principles bring new challenges. Solvay's use of renewable raw materials and renewable energy is still low.

Key levers to achieve our objectives

- · The Sustainable Portfolio Management (SPM) analysis forms part of key business processes at Group and GBU level. It helps analyze the portfolio and allocate resources to upgrade its sustainability.
- All innovation and acquisition projects and Capex investments above €10 million are evaluated using the SPM tool to enhance their contribution to more sustainable and higher growth.



(口) Training our managers in sustainability

In 2017, to better leverage sustainability as a key lever of differentiation on our markets, we designed a specific training module for the Group's marketing and sales managers. Intended to help managers integrate sustainability into their mindset and everyday marketing practices, this program will be completed in 2018 by a module designed to help our salesforce engage our key customers and partners in sustainability topics, such as climate change, energy transition, and recycling: the objective is to identify and co-develop new business opportunities in these areas.

50

^{*} To be considered a sustainable solution, a product must serve in an application that demonstrates a lower environmental impact during its production phase together with a better social and environmental contribution along the value chain

EMPLOYEE ENGAGEMENT INDEX*





Our 2017 performance

- A "pulse survey" was carried out to ask all Solvay employees about their satisfaction at
 work. The participation rate was 81% (vs. 79% in 2016). Satisfaction and pride remain high.
 Key areas for improvement include greater recognition for work done, and sharing of best
 practices among entities.
- Stress prevention and management: four practices are in place at over 50% of sites, including access to an employee assistance program.
- Diversity & Inclusion initiatives focus on 3 areas: fostering awareness through numerous
 Diversity & Inclusion workshops and specific local actions; trainings and development
 programs focusing on inclusive behaviors and leadership by women; challenging HR
 processes, i.e. the hiring process, succession planning.

Our challenge

- Pursue our effort to improve inclusion and increase diversity (of gender and geographies) in our teams.
- Drive cultural change across the Group to increase customer focus and collaboration.
- · Improve our ways of recognizing employees' performance.

Key levers to achieve our objectives

- Stress prevention and management: more extensive practical tools and support will be available on sites.
- Diversity & Inclusion: we keep on implementing various initiatives.

() Creating a new employee experience



66 We have a robust annual process to assess the level of engagement of our teams. Over the years, it has become a tool that managers use to develop actions for improvement.

Employee engagement is key to making our transformation a success, as we are driving a cultural change to foster a trusting, collaborative, and entrepreneurial mindset throughout the Group. The launch of the Solvay Cares initiative created a lot of pride among our teams. We believe that, combining such innovative initiatives with digital tools, we will create an exciting employee experience and foster engagement.

There is room for improvement, however: increasing cultural and gender diversity in our teams remains a priority for Solvay.

Cécile Tandeau de Marsac, Member of the Executive Committee, Group General Manager Human Resources, French

^{*} Measures employee engagement according to Group's initiatives set to improve their well-being, including personal development, reward and recognition, inclusive culture, and work-life balance









OCCUPATIONAL ACCIDENTS AT GROUP SITES



2025 -50% of occupational accidents with MTAR < 0.50 compared to 2014

Our 2017 performance

- In 2017, one fatal accident occured at our facility in Devnya, Bulgaria.
- After a steady safety performance for two years, the number of medical treatment accidents fell 24% in 2017. However, the fatal accident in Bulgaria reminds us of the challenges we face.
- We focus on engagement as a way of reducing the number of people injured at our sites.
 Engagement activities we have pursued this year include Leadership Safety Visits (over 1,350 in 2017);
 Safety Days to stimulate interactions relating to HSE; and Safety Climate diagnostics, in which we discuss the onsite safety culture with employees.

Our challenge

· Eliminate all fatal and life-altering accidents.

Key levers to achieve our objectives

- Safety Leadership: spending less time reacting to accidents and more time encouraging and supporting our employees and contractors to make safety a normal part of how they perform their work.
- · Develop a shared understanding of the risks and mitigation measures for the Solvay Life Saving Rules.

(Using drones for industrial maintenance

A new use of digital technology is enabling the Aroma Performance GBU to reduce the cost of its routine maintenance inspections. The Saint-Fons plant, near Lyon in south-eastern France, has decided to trial the use of a drone to survey the roofs. This initiative eliminates safety risks, and avoids the costly and time-consuming erection of scaffolding. Using a drone, an inspection takes minutes instead of weeks to complete, and at a fraction of the cost.



EMPLOYEES INVOLVED IN SOCIETAL ACTIONS





Our 2017 performance

 70% of Solvay industrial sites have a Guidance Committee for societal actions.

Our challenge

- Measure the real impact of Solvay's local societal approach without excessive reporting burden.
- Embark and focus Solvay's employees on the four key topics defined.

Key levers to achieve our objectives

 As part of the Solvay Way practices, all the sites self-assess their progress in their approach to societal actions each year.

(\(\) Education for disadvantaged children in China

The Solvay Adream Center, a standardized classroom sponsored by Solvay, was officially opened in 2017 at Sanhewan Primary School, Yunnan Province, China. As part of our social responsibility actions, we are helping the school provide quality education and help children grow confidently and with self-esteem, in association with the Shanghai Adream Charitable Foundation. This project is supported by eleven of our plants and R&I (Research & Innovation) centers in China. All employees are encouraged to volunteer to teach in the Center, following a training program provided by an NGO.



Around
300
students concerned

11 sites and R&I centers involved

Strategic objectives:





 $[\]hbox{* Medical treatment accident rate, with or without work stoppage. Non-restated figures.}\\$

RECOGNITION FROM **RATINGS AGENCIES**

____ Solvay endeavors to perform strongly on both financial and extrafinancial indexes, striving at all times to earn and retain the confidence and support of all its stakeholders. We use feedback from ratings agencies as a benchmark and an indicator of our stakeholders' main concerns. This directly impacts on our own priorities.

OUR MAIN INDEXES

BEL 20

BEL 20 index

Solvay is a long-time component of the Brussels-based BEL 20 index.



Ethibel Sustainability index

Solvay has been reconfirmed as a constituent of the Ethibel Sustainability Index (ESI) Excellence Europe since September 20, 2017.



CAC 40 index

Solvay has been listed on the CAC 40 index, based in Paris, since September 2012, following the company's merger with Rhodia.



Euronext 100 index

EURONEXT This pan-European index is made up of the one hundred largest and most liquid stocks traded on Euronext. Solvay is currently one of eleven Belgian constituents of the index.



CDP (Carbon Disclosure Project)

An international organization, CDP analyzes how companies integrate climate change in their strategies. Solvay is in the middle range in its sector, scoring "B" in climate, water and forests.

- + internal carbon price, climate change risk
- targets not verified by SBTi



FTSE4Good index

Solvay has an absolute score on FTSE's ethical investment index of 3.8/5, and its score relative to its peers is 98%.

- + top 10% of "super-sector" companies
- o governance, climate change, health and safety, labor standards



EcoVadis supplier sustainability ratings

Solvay ranks Gold, with a score of 77/100.

(+) labor practices, fair business practices, environment, sustainable procurement



Oekom Research

Solvay is rated as a "Prime" company – with a score of B- - by the German ethical ratings agency, ranking among the leaders in chemicals.

- eco-efficiency, governance criteria
- water management, use of alternative raw materials, product stewardship, staff and supplier management

OUR MAIN INDEXES



RobecoSAM Dow Jones Sustainability Index (DJSI)

Solvay has joined the DJSI World Index and is ranked 11th

- materiality analysis, human rights policy, impact measurement and valuation.
- operational eco-efficiency, water-related risks, product stewardship management



Vigeo Eiris

Solvay is a constituent of the Euronext Vigeo World Index. Its performance is considered to be robust and stable.

- environmental strategy and eco-design, promotion of labor relations, nondiscrimination
- environmental impact of transport, waste management, development of green products & services, executive remuneration.

Other indexes

Solvay shares are incorporated in numerous other weighted stock market indexes, including the STOXX family (DJ Stoxx and DJ Euro Stoxx), the FTSE 300, and the MSCI index.

OUR OUTLOOK FOR 2018

At constant scope and relative to average 2017 forex levels, Solvay expects full year underlying EBITDA to grow 5% to 7% organically, mainly driven by Advanced Materials and Advanced Formulations.

Advanced Materials

Advanced Materials to grow by double-digits, driven by broad-based demand expansion in its key
end-markets, including aerospace, automotive, electronics, batteries and healthcare, and supported
by operational excellence.

Advanced Formulations

 Advanced Formulations to grow at a high-single-digit, driven by an increased demand in mining, some further improvement in oil and gas, and positive net pricing;

Performance Chemicals

 Profitability will be impacted by current higher energy prices that will weigh on soda ash margins, despite operational excellence and growth in Peroxides.

Free cash flow from continued operations is expected to exceed the 2017 level of €782 million.

An integral part of our sustainable value creation is the targeted improvement in extra-financial objectives. After the strong delivery in 2017, we expect to continue to improve our **greenhouse gas intensity**, and to further enhance the prominence of **sustainable solutions** in our portfolio.

Watch Jean-Pierre Clamadieu's video annualreports.solvay.com/2017/en

STAKEHOLDERS SPEAK

Local communities





Helena Onaga,Coodinator of the Chemical Course,
ETEP Technical Public School, Paulinia, Brazil

EducAção is a training program for chemistry teachers run by volunteers at the Solvay Paulínia unit in Brazil. It transforms Solvay's plants and laboratories into classrooms, and has reached out to more than 2,000 students.

HELENA ONAGA

I teach chemistry in a public school in the state of São Paulo, Brazil. Because most teachers spend all their time in the classroom, they have little contact with recent advances. I had the idea of workshops for teachers in a chemical company. I suggested this to the community relations coordinator of a Solvay plant in my city, Paulínia, two years ago. He agreed and assembled a team of volunteer trainers at the unit. Now around twenty chemistry teachers from two technical schools attend monthly training sessions in

Solvay employees pass on a lot of knowledge to us, helping us deepen the knowledge we pass on to students.

the Solvay laboratories and production areas. We address topics related to the new techniques used in production, analysis and environmental control such as effluent treatment and waste disposal. We had high expectations, and the EducAção program has enabled us to keep up-to-date on advances in chemistry and improve our classes.

Alongside this, Solvay organizes annual visits to the plant for our students, and the guides are usually alumni of our schools. This is a very positive experience for the young people, who can dream: "One day I could work at Solvay, too".



Quite a lot of Solvay's trainees in chemistry come from the schools taking part in the program, meaning it's valuable for both the young people and Solvay.

teachers from two schools trained in 2017

25 site employees involved 14 training modules

2,000 + students impacted



WANDERSON LELIS

Participating in the program and sharing a little knowledge was extremely gratifying. Through practical examples from the industry, teachers could see correlations between the courses they teach and applications in high-performance industries, such as automotive and aerospace. This helps them make their courses more concrete for the students, raising their interest and discouraging them from dropping out of school.

1 am proud to work in a company that helps young people understand how studying at school can help them get on in life. ??

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CORPORATE GOVERNANCE STATEMENT

1. INTRODUCTION

Solvay SA – headquartered in Belgium – is committed to the highest governance principles and seeks to consistently enhance corporate governance performance, emphasizing transparency and promoting a sustainable culture of long-term value creation.

Solvay's governance bodies are responsible for the Group's long-term approach, pursuing the vision of Solvay's founder, and implementing the strategy. The Board of Directors is entrusted with steering Solvay's development strategy while advising the Executive Committee, which oversees its business operations.

This Corporate Governance Statement applies the recommendations of the 2009 Belgian Corporate Governance Code's "comply or explain" principle. It includes information on Solvay's share capital, shareholders and investor relations, governance bodies, Compensation report, risk and internal control, and external auditor. Solvay fully respects the rules described in this Corporate Governance Statement.

The Board of Directors of Solvay adopted a Corporate Governance Charter (the "Charter") on December 13, 2016. The Charter is available on the Solvay's website and describes the main aspects of the Solvay group's corporate governance, including its governance structure and the internal rules of the Board of Directors, the Executive Committee, and other committees set up by the Board of Directors.

In accordance with this principle, none of the rules described in this Corporate Governance Statement depart from the 2009 Belgian Corporate Governance Code.

2. CAPITAL, SHARES AND SHAREHOLDERS

2.1. Capital and shares

2.2. Shareholders

2.2.1. Major shareholder

Solvay's main shareholder is Solvac SA, which holds more than 30% of Solvay's share capital.

Solvac SA is a public limited liability company established under Belgian law whose shares are traded on Euronext Brussels exchange.

Solvac has approximately 13,000 shareholders. Among them, more than 2,000 persons are related to the founding families of Solvay and Solvac. These persons hold approximately 77% of Solvac shares.

2.2.2. Shareholder structure

The following table shows the current shareholder structure based on the notifications made to the Company and to the Belgian Financial Services and Markets Authority ("FSMA") by the shareholders specified below, according to the Belgian law of Wednesday, May 2, 2007 on the notification of significant shareholdings, or according to Solvay's bylaws, or Article 74 of the Belgian law of April 1, 2007 on public acquisition bids, and on more recent information from public disclosures.

	Date	Number of shares	% of total
Solvac	July 29, 2016	32,511,125	30.71%
		2,632,690	
Solvay Stock Option Management	July 4, 2016	(+559,374 purchase options)	3.01%

1) Shares for which notifications have been filed

According to regulations on financial transparency, the shareholders' requirement is to disclose interest to Solvay when participation exceeds the threshold of 3%.

- Solvac: On August 1, 2017, Solvac gave notice that it holds 30.71% (32,511,125 shares) of Solvay's share capital.
- Solvay Stock Option Management SPRL, an indirect subsidiary
 of Solvay, notified Solvay on Wednesday, November 15, 2017
 that its shareholding amounted to 3.001% of the 105,876,416
 shares issued by Solvay, representing 2,472,641 shares and
 709,874 purchase options. These purchase options are part
 of the Group's strategy of hedging risk linked to stock options
 granted by Solvay to senior executives of the Group.

• Blackrock Inc. gave notice on November 8, 2017, that it holds a 3.95% interest (3,545,803 shares and 632,744 equivalent financial instruments) in the share capital of the Company.

The latest transparency notifications are available on the website.

2) The shares for which no transparency notifications have been filed with Solvay or the FSMA are held by:

- individual shareholders who hold shares directly in Solvay,
- institutional shareholders.

At the Ordinary Shareholders' Meeting held on Tuesday, May 9, 2017, shares were deposited and votes cast in respect of 58.58% of Solvay SA's capital.

3. RELATIONS WITH SHAREHOLDERS AND INVESTORS

3.1. Performance of Solvay share

Solvay shares are listed on two exchanges:

- Euronext Brussels, the primary listing where the share is part of the BEL20 index,
- Euronext Paris, where Solvay joined the CAC40 index on September 21, 2012.

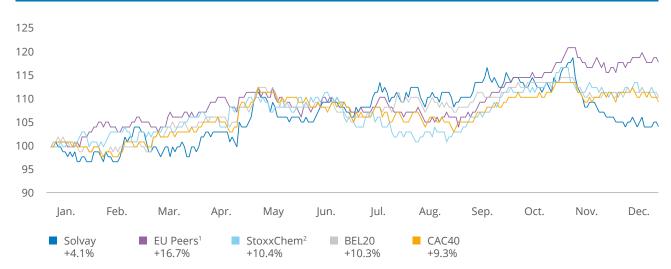
Solvay shares are also traded over the counter (OTC) as a Level 1 sponsored American Depository Receipt (ADR) as of October 1, 2016.

During 2017, the average price was €118.53 while the 52-week range was €107.70 – €131.25 per share. Average daily trading volume as reported by Euronext was 245,621 shares in 2017, compared with 335,719 shares in 2016.

Solvay share prices and trading volumes from January 1, 2017 to December 31, 2017



Solvay share compared with indexes from January 1, 2017 to December 31, 2017



¹ EU Peers: Akzo, Arkema, BASF, Clariant, DSM, Evonik, Lanxess

² Stoxx Chem: Bayer, BASF, Air Liquide, Linde, Akzo Nobel, Koninklijke DSM, Solvay, Covestro, Symrise, Arkema, Umicore, Brenntag, Lanxess, Evonik, K+S, Fuchs Petrolub Pref, IMCD

The share price evolved in an upward trend from the beginning of the year until the third quarter earnings announcement on November 8. Year-to-date performance as of November 7 was ahead of the StoxxChem 600 index (c.13%). Solvay's third quarter results, although in line with market expectations, were seen as less impressive, triggering temporary profit-taking towards the end of the fourth quarter after ten months of strong performance.

3.2. Engaged financial communication

Solvay facilitates an open dialog with the investment community, thereby building a long-term relationship based on credibility and trust. Solvay's aims to provide accurate information in a transparent, timely, and meaningful manner to accompany the investment community in their understanding of Solvay business and strategy leading to a fair valuation by the market.

Based on the FSMA (Belgian Financial Services and Markets Authority), on MiFID2 (Markets in Financial Instruments Directive), on Market Abuse Regulation (MAR), and on the (General Data Protection Regulation), Solvay defines and implements disclosure principles and processes to govern the interactions and communications with the financial markets. Solvay takes great care to stay updated on regulations to maintain strict compliance. Solvay also takes care to treat all stakeholders equally.

Executive Committee members interact with various members of the investment community, including buy and sell-side analysts, portfolio managers, and retail shareholders in a timely and effective manner throughout the year (Roadshows, One-on-One Meetings, Conferences, Capital Markets Day, etc.). In 2017, the committee members devoted considerable time and effort to communicating with and meeting face to face with the investment community in the U.S.

Extensive information about Solvay business operations, strategy, and financial performance may be found in a wide variety of regulatory filings, such as press releases, the Annual Integrated report, quarterly reports, financial press releases, and presentations. All of these publications are readily available in French, Dutch, and English in the Investors section of www.solvay.com and on request from the Investor Relations Department.

3.3. Roadshows and meetings for institutional stakeholders

Roadshows are organized with senior Group managers throughout the year, in addition to attending key industry conferences around the world. These face to face interactions enable dialog with the investment community on Solvay's strategy and business performance.

In 2017, in between roadshows and conferences in 60 cities around the world and reverse roadshows at corporate headquarters in Brussels, Solvay's leaders participated in 19 events and had 83 interactions with sell-side and buy-side analysts and portfolio managers to discuss Solvay's strategic priorities. Actively engaging in dialog with investors about Solvay's strategy and performance in both financial and extra-financial indicators is an integral part of Solvay's key objectives.

Solvay also holds conference calls with senior management every quarter to comment on the Group's results.

3.4. Individual investors

Solvay's objective is to enhance its visibility and attractiveness to all kinds of stakeholders by improving shareholders' awareness of Solvay's equity story and by improving the relationship based on trust and interactions.

Every shareholder has access to clear, comprehensive, transparent information tailored to his or her individual needs through Solvay's Investors' Club or through direct contacts with Solvay reference shareholders. Information that is prepared and used is published on the Solvay website to guarantee that no benefit can be gained from privileged access.

An annual communication program is defined and validated by Solvay executives, which offers in particular:

- Regular information about Solvay, including press releases, amendments to by-laws, dividend payments,
- A calendar of upcoming events, including the Annual Shareholders' Meeting, a quarterly "Solvay in Action" enewsletter explaining the Group's strategy and main achievements through, for example, interviews and videos,
- Invitations to events in which Solvay will participate.

In 2017, Solvay regularly hosted events such as meetings with senior managemen, experts and visits to company sites, including:

- Antwerp Investors' Day organized by the Flemish Federation of Investment Clubs and Investors, VFB (Vlaamse Federatie van Beleggingsclubs en Beleggers), attended by more than 1,500 participants annually. An Executive Committee member held a meeting and Q&A with around 400 individual investors,
- Finance Avenue organized in Brussels by the De Tijd and L'Echo, attended by 3,600 participants,
- Several founding families and private banking events.

In addition, Solvay's share registration service responds to all queries and requests for information.

4. BOARD OF DIRECTORS AND BOARD COMMITTEES

The Charter defines the role and mission, functioning, size, composition, training, and evaluation of the Board of Directors. The internal rules of the Board of Directors are attached to the Charter.

4.1. Board of Directors

4.1.1. Structure and composition





The mandates of Mr. N. Boël, Mr. J-P. Clamadieu, Mr. B. de Laguiche, Mr. H. Coppens d'Eeckenbrugge, Mrs. E. du Monceau, Mrs. F. de Viron and Mrs. A. Moraleda were renewed for a four-year term at the Ordinary Shareholders' Meeting of May 9, 2017 so the mandate will expire at the end of the Ordinary Shareholders' Meeting to be held in May 2021.

Mrs. A. Lemarchand was appointed as a board member for a four-year term at the Ordinary Shareholders' Meeting of May 9, 2017; her mandate will expire at the end of the Ordinary Shareholders' Meeting to be held in May 2021.

At the end of the Ordinary Shareholders' Meeting of Tuesday, May 8, 2018, the following mandates will expire:

- Rosemary Thorne
- Gilles Michel

- · Denis Solvay
- Bernhard Scheuble.

At the same Ordinary Shareholders' Meeting, the Board of Directors will propose:

- Renewing the mandates of Mrs. Rosemary Thorne and Mr. Gilles Michel for another four years,
- Appointing Mr. Philippe Tournay as director for a four-year term to replace Denis Solvay, who has decided not to stand for a new term.
- Appointing of Mr. Matti Lievonen as a new independent director for a four-year term to replace Bernhard Scheuble.

The number of Board members will temporarily be 16 until the Ordinary Shareholders' Meeting of 2019, when the term of Yves-Thibault de Silguy will expire.

At December 31, 2017 the composition of the Board is as follows:

- 15 of the 16 directors on the Board are non-executive
- 11 of the 16 directors have been recognized as independent by the Ordinary Shareholders' Meeting, according to the criteria defined by the Belgian law and further refined by the Board of Directors
- seven different nationalities,
- Six of the 16 Board members are women,
- Board meeting attendance is high: 84.13%.

> Year of first appointment

Presence at Board meetings in 2017



Nicolas Boël
Belgian

№ 1998 🖾 7/7

Born in: 1962

Solvay SA mandates: Chairman of the Board of Directors, Chairman of the Finance Committee and Chairman of the Compensation Committee, Member of the Nomination Committee

Expiry date of directorship: 2021

Diplomas and activities outside Solvay: MA in Economics (Université catholique de Louvain, Belgium), Master of Business Administration (College of William and Mary, USA). Director of Sofina.

Presence at Board meetings in 2017



Jean-Pierre Clamadieu⁽¹⁾ French № 2012 🖾 7/7

Born in: 1958

Solvay SA mandates: Chairman of the Executive Committee and CEO, Director and Member of the Finance Committee

Expiry date of directorship: 2021

Diplomas and activities outside Solvay:

Engineering degree from the École des Mines (Paris, France). Director of Axa, Faurecia. Chairman of Cytec Industries Inc.



Bernard de Laguiche French/Brazilian № 2006 🖾 7/7

Born in: 1959

Solvay SA mandates: Member of the Executive Committee until September 30, 2013, Director, Member of the Finance Committee and Member of the Audit Committee since May 13, 2014

Expiry date of directorship: 2021

Diplomas and activities outside Solvay: MA in Economics and Business Administration, HSG (Universität St. Gallen, Switzerland). MBA in Agribusiness, University of São Paulo (USP ESALQ). Managing Director of Solvac SA, Chairman of the Board of Peroxidos do Brasil Ltda, Curitiba (Brasil), Board member of Le Pain Quotidien Brasil Ltda, Sao Paulo and Luxembourg, Founder and President of Grupo Ortus SA, Curitiba (Brasil), President of Agro Mercantil Vila Rica Ltda, Parana (Argentina).



Jean-Marie Solvay Belgian № 1991 🖾 6/7

Born in: 1956

Solvay SA mandates: Director, Member of the

Innovation Board

Expiry date of directorship: 2020

Diplomas and activities outside Solvay:

Advanced Management Programme - Insead. CEO of Albrecht RE Immobilien GmbH & Co. KG., Berlin (Germany), Chairman of the Board of the International Solvay Institutes. Member of the Board of the Innovation Fund, Brussels



Denis Solvay Belgian № 1997 🖾 4/7

Born in: 1957

Solvay SA mandates: Director, Member of the Compensation and Nomination Committees

Expiry date of directorship: 2018

Diplomas and activities outside Solvay:

Business engineering – Solvay Business School (Université Libre de Bruxelles, Belgium). Abelag Holding, SA. Voluntary Director of the healthcare institute ANBCT and Queen

Elisabeth Music Chapel

(1) Employed full time by the Solvay Group.

☑ Presence at Board meetings in 2017



Prof. Dr. Bernhard Scheuble German № 2006 🖾 7/7

Born in: 1953

Solvay SA mandates: Independent Director, Chairman of the Audit Committee

Expiry date of directorship: 2018

Diplomas and activities outside Solvay:

MSc, Nuclear Physics & PhD, Display Physics (Albert-Ludwigs-Universität Freiburg, Germany). Former Chairman of the Executive Committee of Merck KGaA, (Darmstadt, Germany) and former member of the E. Merck OHG Board of Directors



Charles Casimir-Lambert
Belgian

№ 2007 ☑ 7/7

Born in: 1967

Solvay SA mandates: Independent Director, Member of the Audit Committee

Expiry date of directorship: 2019

Diplomas and activities outside Solvay:

MBA Columbia Business School (New York, USA)/London Business School (London, UK), Master's degree (lic.oec.HSG) in economics, management and finance (Universität St. Gallen, Switzerland). Management of family's global interests.



Hervé Coppens d'Eeckenbrugge Belgian № 2009 🖾 7/7

Born in: 1957

Solvay SA mandates: Independent Director, Member of the Finance and Audit Committees

Expiry date of directorship: 2021

Diplomas and activities outside Solvay: MA in Law from the Université catholique de Louvain (Belgium), Diploma in Economics and Business, ICHEC (Belgium) Until June 30, 2013, Group Director Petercam SA, Director of Vital Renewable Energy Company LLC (Delaware). Independent Director, VISONARITY AG (Basel,

Stwitzerland).



Born in: 1948

Solvay SA mandates: Independent director, Member of the Compensation Committee and Chairman of the Nomination Committee, Member of the Finance Committee

Expiry date of directorship: 2019

Diplomas and activities outside Solvay: MA in Law from the Université de Rennes (France), DES in public law from Université de Paris I (France), graduate of the Institut d'Études Politiques de Paris and the École Nationale d'Administration (France) Vice-Chairman and Lead Director of the VINCI group, Director of LVMH, Chairman of the Supervisory Board of Sofisport (France), Director of VTB bank (Moscow, Russia), and Chairman of YTSeuropaconsultants

☑ Presence at Board meetings in 2017



Born in: 1950

Solvay SA mandates: Independent Director, Member of the Compensation and Nomination Committees

Expiry date of directorship: 2021

Diplomas and activities outside Solvay: MA in Applied Economics from the Université catholique de Louvain (Belgium). Chair of the Board and Chair of the Remuneration and Nomination Committee of UCB SA, Member of the Board of Directors of La Financière de Tubize SA, Member of the Corporate Governance Commission.



Born in: 1955

Solvay SA mandates: Independent Director, Member of the Compensation and Nomination Committees

Expiry date of directorship: 2021

Diplomas and activities outside Solvay:

Doctorate of Science (Université catholique de Louvain, Belgium). Master in Sociology (Université catholique de Louvain, Belgium). Professor at the Faculty of Psychology and Education Sciences and Louvain School of Management (Université catholique de Louvain, Belgium), Academic Member of the Center of Research Entrepreneurial Change and Innovative Strategies, of Interdisciplinary Group of Research in Socialization, Education and Training, of the Interdisciplinary Research Group in Adult Education at the Université catholique de Louvain (Belgium). Chairman and Director AISBL EUCEN – European Universities Continuing Education network.



Born in: 1964

Solvay SA mandates: Independent Director, Member of the Compensation and Nomination Committees

Expiry date of directorship: 2021

Diplomas and activities outside Solvay:

Degree in Industrial Engineering, ICAI (Universidad Pontifica Comillas, Spain) PDG, IESE Business School (Universidad de Navarra, Spain). Former General Manager of IBM Spain, Portugal, Greece, Israel and Turkey Former Chief Operating Officer, International Division (Spain) and Acting CEO, Scottish Power (UK) of Iberdrola Member of the Boards of the following listed companies: Airbus SE (The Netherlands), Faurecia (until oct.2017) (France), Caixabank SA (Spain), Vodafone plc (UK). Member of the Consejo rector of Consejo Superior of Investigaciones Cientificas. Member of the Spanish Royal Academy of Economics and Financial Sciences

Presence at Board meetings in 2017



Born in: 1952

Solvay SA mandates: Independent Director, Member of the Audit Committee

Expiry date of directorship: 2018

Diplomas and activities outside Solvay:

Honours Degree in Mathematics and Economics from the University of Warwick (UK). Fellow of the Chartered Institute of Management Accountants FCMA and CGMA Fellow of the Association of Corporate Treasurers FCT Former Chief Financial Officer of J. Sainsbury, Bradford & Bingley, and Ladbrokes Member of the Board and Chair of Audit Committee of Merrill Lynch International (UK) and Smurfit Kappa Group (Ireland). Former Independent Director of Royal Mail Group Cadbury Schweppes, Santander UK and First Global Trust Bank (UK)



Gilles Michel
French

⇒ 2014 ☑ 6/7

Born in: 1956

Solvay SA mandates: Independent Director, Member of the Finance Committee

Expiry date of directorship: 2018

Diplomas and activities outside Solvay:

École Polytechnique (France). École nationale de la statistique et de l'administration économique (ENSAE) (France). Institut d'Études Politiques (IEP). Former CEO Ceramics & Plastics, Saint-Gobain, France. Former Member of the Management Board, PSA, France. Former CEO, Fonds stratégique d'Investissement (FSI), France. Chairman & CEO, Imerys, France (listed). Independent Director IBL



Marjan Oudeman
Dutch

≥ 2015 ☑ 7/7

Born in: 1958

Solvay SA mandates: Independent Director, Member of the Audit Committee since May 12, 2015

Expiry date of directorship: 2019

Diplomas and activities outside Solvay: Law

degree, Rijksuniversiteit Groningen (the Netherlands). Summer Program American Law, Columbia University (New York, USA), Universiteit van Amsterdam and Universiteit Leiden (the Netherlands). Masters Degree in Business Administration, Simon E. Business School, University of Rochester (New York, USA), and Erasmus Universiteit Rotterdam (the Netherlands). Member of the Board of Statoil ASA. Member of the Board of SHV Holdings N.V., the Netherlands. President of the Executive Board Universiteit Utrecht (the Netherlands)until July 2017. Member of the Supervisory Board of Koninklijke Concertgebouw, the Netherlands. Chairman of the Board of Ronald McDonald Children's Fund. Member of the Supervisory Board of the Rijksmuseum, the Netherlands. Since April 2017, Member of the Supervisory Board of Aalberts Industries NV.

Presence at Board meetings in 2017



Born in: 1954

Solvay SA mandates: Independent Director

Expiry date of directorship: 2021

Diplomas and activities outside Solvay:

Engineering degree from the École Chimie Tech and MIT (France), MBA of INSEAD (France), Former Chief Executive officer of Lafarge Chaux, Former Executive Chairman of Steetley Dolomite (UK), Director of Saint Gobain and BioMérieux.

4.1.2. Functioning of the Board of Directors



In 2017, the Board held seven meetings. Each director's attendance is shown in the table in section 4.1.1. Structure and composition.

During 2017, the Board of Directors' discussions, reviews and decisions focused on the annual review of Group strategy, strategic projects (acquisitions, divestments, capital expenditures, etc.), quarterly financial reporting, approving quarterly financial statements and proposing a dividend to the AGM, Board Committee reports, corporate Governance, corporate social responsibility and sustainability policy and strategy, risk management, compensation policy and the long-term incentive plan, Board and management succession planning, intragroup restructuring, and the reports and resolution proposals to the General Meeting.

There were no transactions or contractual relationships in 2017 between the Group and its Board members giving rise to conflicts of interests.

4.1.3. Evaluation

In 2016, the Board of Directors concluded an evaluation by an independent competent third party hired to advise the Board on how it can better follow best practices. Evaluations like this are done every two to three years and focus primarily on Board composition, how it functions, disclosures and interactions between the Board and executive management, and the composition and functioning of the Committees it creates. Board members were invited to provide input on these points during questionnaire-based interviews performed by Spencer Stuart, an external consultant.

The next evaluation of the Board of Directors will be started in 2018

4.1.4. Training







In 2017, a number of key executives made presentations to the Board on operational and functional topics, making sure the Board stays familiar and informed on topics that are relevant and important for the Group beyond those requiring immediate decisions.

The Board of Directors also visited industrial and research sites: the Solvay Research and Innovation center in Seoul (South Korea) and two plants in South Korea and China. This trip gave the opportunity to the Board members to meet with the local operational teams and to be confronted with the business and industrial reality of these Asian operations of the Group.

The Board of Directors devotes at least one meeting per year to an update on trends in global sustainable development issues (including climate change risks and opportunities) and how they affect the Group, so that it can properly and consistently factor those issues into Solvay's operations.

4.2. Board committees

The Board of Directors has set up the following permanent specialist Committees: Audit Committee, Finance Committee, Compensation Committee, and Nominations Committee.

The terms of all of the various Committee members will expire on Tuesday, May 8, 2018, on the date of the Ordinary Shareholders' Meeting. They will be renewed for a two-year period ending on the date of the Ordinary Shareholders' Meeting in 2020.

As at December 31, 2017, the composition of the four Board Committees 2017 was as follows:

	Audit Committee	Finance Committee	Compensation Committee	Nominations Committee
Mr. Nicolas Boël		Chairman	Chairman	Member
Mr. Jean-Pierre Clamadieu		Member		
Mr. Bernard de Laguiche	Member	Member		
Mr. Denis Solvay			Member	Member
Prof. Dr. Bernhard Scheuble	Chairman			
Mr. Charles Casimir Lambert	Member			
Mr. Hervé Coppens d'Eeckenbrugge	Member	Member		
Mr. Yves-Thibault de Silguy		Member	Member	Chairman
Mrs. Evelyn du Monceau			Member	Member
Mrs. Françoise de Viron			Member	Member
Mrs. Amparo Moraleda Martinez			Member	Member
Mrs. Rosemary Thorne	Member			
Mr. Gilles Michel		Member		
Mrs. Marjan Oudeman	Member			

The composition, role, responsibilities, and procedures of these four boards are described in an Appendix to the Charter.

4.2.1. The Audit Committee Composition:

- All members are non-executive directors, a majority of whom are independent,
- The directors must fulfill the competency criterion by virtue of the training and the experience they gained in previous functions (see section 4.1.1 regarding the composition of the Board of Directors),
- The secretary is a member of the Group's internal legal staff.

Meetings:

- Six in 2017, including four before the Board meetings scheduled to consider the publication of periodic results (quarterly, semiannual and annual),
- Meeting attendance was 100%.

Activities:

- Review and consider reports from the Chief Financial Officer, the head of the Group Internal Audit, and the auditor in charge of the external audit (Deloitte, represented by Mr. Michel Denayer),
- Examine the quarterly report by the Group General Counsel on significant ongoing legal disputes and reports on tax and intellectual property disputes.
- Meet alone with the auditor in charge of the external audit whenever such a meeting is deemed useful,

- Meet once a year with the Chairman of the Executive Committee and CEO (Mr. Jean-Pierre Clamadieu); all other Board members are invited on that occasion to discuss the major risks facing the Group,
- Monitor and assess risk exposure as well as the effectiveness of controls and mitigation plans.

4.2.2. The Finance Committee Composition:

- Six members,
- Mr. Karim Hajjar (Executive Committee member and CFO) is invited to attend the Finance Committee meetings,
- The Secretary is Mr. Michel Defourny, Group Corporate Secretary.

Meetings:

- This Committee met four times in 2017,
- Meeting attendance was 95.8%.

Activities:

- Gives an opinion on financial matters such as the amounts of the interim and final dividends, the levels and currencies of indebtedness, monitoring the credit strength of the Group's balance sheet, hedging foreign exchange and energy risks, the hedging policy for the long-term incentive plans, the content of financial communication, and financing major investments,
- Finalizes the preparation of the press releases announcing quarterly results,
- When called upon, it gives opinions on Board policies on the above matters.
- Makes all recommendations to the Board of Directors.

4.2.3. The Compensation Committee Composition:

- A majority of members are independent,
- The Compensation Committee has the expertise necessary to perform its mission,
- The Chairman of the Executive Committee is invited to meetings, except in the case of matters that concern him personally,
- The Secretary is Mr. Michel Defourny, Group Corporate Secretary.

Meetings:

- Meetings are prepared by the Group General Manager Human Resources, who attends the meetings,
- · One meeting was held in 2017,
- Meeting attendance was 83.3%.

Activities:

The Compensation Committee fulfills the duties imposed on it by Article 526 quarter section 5 of the Companies Code.

It advises the Board of Directors on:

- the Company's compensation policy and principles,
- the compensation levels for members of the Board of Directors and the Executive Committee,
- the Chairman of the Executive Committee's compensation, short-term incentives and long-term incentives, and performance assessment
- Allocation of long-term incentives (performance share units and stock options) to the Company's senior manager.

It prepares the annual compensation report for the Corporate Governance Statement and receives a yearly report about the compensation of General Management.

4.2.4. The Nominations Committee Composition:

- The majority of members are non-executive independent directors
- The Chairman of the Executive Committee is invited to meetings, except in the case of matters that concern him personally,
- The Secretary is Michel Defourny, Group Corporate Secretary.

Meetings:

- Three meetings were held in 2017,
- Meeting attendance was 94.4%.

Activities:

The Nomination Committee gives its opinion on appointments to the Board of Directors (chairman, new members, renewals, and committees), to Executive Committee positions (chairmanship and members), and to general management positions.

5. EXECUTIVE COMMITTEE

The role, responsibilities, composition, procedures and evaluation of the Executive Committee are described in detail in the Charter. In addition, the internal rules of the Executive Committee are attached to the Charter.

As at December 31, 2017, the Executive Committee was composed of the following five members.

>> Year of first appointment

Presence at meetings in 2017



Born in: 1958

Term of office ends: 2019

Diplomas and main Solvay activities:

Engineering degree from the École des Mines (Paris). Chairman of the Executive Committee and CEO.

Presence at meetings in 2017



Vincent De Cuyper Belgian № 2006 ☑ 15/15

Born in: 1961

Term of office ends: 2018

Diplomas and main Solvay activities:

Chemical engineering degree (Catholic University of Louvain, Master's in Industrial Management (Catholic University of Leuven), AMP Harvard Executive Committee member



Karim HajjarBritish

№ 2013 ☑ 15/15

Born in: 1963

Term of office ends: 2019

Diplomas and main Solvay activities: BSC (Hons) Economics (The City University, London). Chartered Accountancy (ICAEW) Qualification. Executive Committee member and CFO.



Roger Kearns
American

⇒ 2008 ☑ 15/15

Born in: 1963

Term of office ends: 2018

Diplomas and main Solvay activities:

Bachelor of Science – Engineering Arts (Georgetown College – Georgetown), Bachelor of Science – Technology – Atlanta), MBA (Stanford University). Executive Committee member.



Pascal Juéry
French

⇒ 2014 ☑ 15/15

Born in: 1965

Term of office ends: 2018

Diplomas and main Solvay activities:

Graduate of the European Business School of Paris (ESCP – Europe). Executive Committee member.

On May 1, 2017, July 1, 2017, and January 1, 2018, the Board of Directors renewed the respective two-year terms of Vincent De Cuyper, Roger Kearns, and Pascal Juéry as members of the Executive Committee. Their new terms therefore expire respectively on May 1, 2019, July 1, 2019, and January 1, 2020.

6. COMPENSATION REPORT



Stakeholder engagement

Solvay actively reached out to its shareholders to discuss its approach to governance, including compensation matters. This is part of the Company's ongoing shareholder engagement program which Solvay will continue to undertake as part of its commitment to build upon this constructive dialog with its shareholders

The increased disclosure in this year's Compensation Report surrounding Solvay's short-term and long-term incentives reflects the input received from Solvay's shareholders. Solvay believes that these changes, together with the existing compensation practices, have resulted in a compensation structure that incentivizes the executive team to deliver sustained long-term performance in a transparent manner, whilst ensuring that Solvay continues to uphold its key principle of rewarding the executives for performance.

In terms of Solvay's overall compensation structure, the Compensation Committee's annual review confirmed that the current pay mix and design remains appropriate. Accordingly, no changes to the overall structure of pay offered to Solvay's executives were considered necessary.

6.1. Governance

The compensation report for the corporate governance has been prepared by the Compensation Committee.

6.2. Board of Directors compensation

Solvay SA directors are remunerated with fixed emoluments, the common basis of which is set by the Ordinary Shareholders' Meeting, and any complement thereto by the Board of Directors on the basis of Article 26 of the bylaws, which states that:

- "Directors shall receive emoluments payable from overhead costs; the Shareholders' Meeting shall determine the amount and terms of payment";
- "That decision shall stand until another decision is taken";

- "The Board of Directors shall be authorized to grant directors with special duties (the Chairman, vice-Chairmen, directors charged with day-to-day management, members of the Executive Committee) fixed emoluments in addition to those provided for in the above paragraph";
- "Each of the Directors responsible for day-to-day management is also entitled to variable compensation determined by the Board of Directors on the basis of their individual results and of the consolidated results of the Solvay Group";
- "The sums referred to in the two preceding sub-sections are also paid out of overhead costs".

6.2.1. Board of Directors individual compensation

- The Ordinary Shareholders' Meetings of June 2005 and May 2012 (for Board attendance fee) decided to set directors' pay, starting from the 2005 financial year, as follows:
 - an annual gross fixed compensation of €35,000 per director and additionally an individual attendance fee of €4,000 gross per Board meeting attended,
 - €4,000 gross for members of the Audit Committee and €6,000 gross for its Chairman for each meeting of the committee attended,
 - €2,500 gross per member of the Compensation Committee, Nominations Committee and Financial Committee and €4,000 gross for the chairmen of these committees for each meeting attended, on the understanding that a director sitting on both the Compensation Committee and the Nominations Committee does not receive double compensation,
 - no attendance fees for the Chairman of the Board, the Chairman of the Executive Committee and the executive directors taking part in these committees.
- For the Chairman of the Board, the Board of Directors used its authorization under Article 26 of the bylaws to grant an additional yearly fixed compensation of €250,000 gross, unchanged since 2012, by reason of the workload and the responsibility attached to this.
- Non-executive directors do not receive variable compensation linked to results or other performance criteria. More specifically, non-executive directors are not entitled to annual bonuses, stock options or performance share units, or to any supplemental pension scheme.
- The Company reimburses directors' travel and expenses for meetings and when they exercise their Board and Board Committee functions.

The Chairman of the Board is the sole non-executive director for whom the Group provides administrative support (including the provision of an office, use of the General Secretariat, and a car). The other non-executive directors receive logistical support from the General Secretariat as and when needed. The Company also provides customary insurance policies covering Board of Directors' activities in carrying out their duties.

The Compensation Committee expects no major changes in the structure of the compensation packages for the Board Members for the next two years (2018 and 2019).

6.2.2. Amount of the compensation and other benefits granted directly or indirectly to directors (executive and non-executive) by the Company or by an affiliated company

Gross compensation and other benefits granted to directors

Compensation

		2017		2016
In€	Total gross amount including fix fees	Board of Directors and Committees attendance fees	Total gross amount including fix fees	Board of Directors and Committees attendance fees
N. Boël				
Fixed emoluments + attendance fees	63,000	28,000	67,000	32,000
"Article 26" supplement	250,000		250,000	
D. Solvay	56,000	21,000	74,500	39,500
J-P. Clamadieu	63,000	28,000	67,000	32,000
J-M. Solvay	59,000	24,000	67,000	32,000
A. Poirier ⁽¹⁾	34,572	12,000	0	0
B. de Laguiche	97,000	62,000	101,000	66,000
B. Scheuble	99,000	64,000	99,000	64,000
C. Casimir-Lambert	87,000	52,000	91,000	56,000
H. Coppens d'Eeckenbrugge	97,000	62,000	101,000	66,000
E. du Monceau	70,500	35,500	74,500	39,500
Y-T. de Silguy	81,000	46,000	85,000	50,000
A. Moraleda	66,500	31,500	66,500	31,500
F. de Viron	70,500	35,500	74,500	39,500
G. Michel	66,500	31,500	77,000	42,000
R. Thorne	87,000	52,000	91,000	56,000
M. Oudeman	87,000	52,000	87,000	52,000
	1,434,572	637,000	1,473,000	698,000

⁽¹⁾ From May 9, 2017.

6.3. Executive Committee compensation 6.3.1. Solvay compensation philosophy

Solvay's compensation policy aims to ensure that its Executive Committee is rewarded according to its success in contributing to Solvay's long-term objectives of becoming a more resilient, more sustainable, and more innovative multi-specialty Group with high added value.

The Solvay Compensation Structure is designed in line with the following principles:

- Total compensation is designed to be competitive in the relevant market, so as to attract, retain, and motivate the high caliber executives needed to deliver the Group's strategy and drive business performance.
- Short-term and long-term variable compensation is tied directly to the achievement of strategic objectives to drive sustainable performance and recognize excellent results.
- Compensation decisions are compliant and equitable, and balance cost and value appropriately.

6.3.2. Compensation structure

Every year, the Compensation Committee obtains compensation data relating to the international market from Willis Towers Watson, a globally recognized compensation consultant.

Solvay's compensation structure for its Executive Committee is designed in accordance with the "pay-for-performance" approach approved by the Board of Directors, focusing on the Company's short-term and long-term performance. The level and structure of the compensation packages are aligned with market practices for similar functions at comparable companies.

Solvay's frame of reference for assessing relevant competitive practice is a selection of European chemical and industrial manufacturing companies whose international operations, annual revenues, and headcount are reasonably close to its own. The Company periodically reviews the composition of this peer group to ensure that it continues to reflect Solvay's strategic direction.

The peer group is currently composed of 17 European multinational companies incorporated in six different European countries (Belgium, France, Germany, Netherlands, Switzerland, and the UK) and active in the chemical and/or the industrial sectors.

- Umicore
- Air Liquide
- Arkema
- Michelin
- Saint Gobain
- Vallourec
- BASF
- Bayer
- Evonik

- Lanxess
- Akzo Nobel
- DSM
- Rolls Royce
- GKN
- BAE Systems
- · Johnson Matthey
- Syngenta

Overall, Solvay seeks to position itself at or around the relevant market median for base salary and benefits. Variable compensation, both short-term and long-term, is designed to provide top quartile pay if executives deliver superior performance.

The Compensation Committee expects no major changes in the structure of the compensation packages for the Chairman and the members of the Executive Committee for the next two years (2018 and 2019).

Compensation structure components:

	Fixed Compensation and Benefits				
	Annual Base Salary	Pension and Benefits	Short Term Incentive	Performance Share Units (*)	Stock Options (*)
Performance Period			1 year	3 years	3 years
Performance Measures			 Underlying EBITDA Sustainable Development Individual Objective 	Underlying EBITDA growth CFROI % Greenhouse Gas Intensity Reduction	Share Price

(*) The corresponding number of stock options (SOP) is determined at grant date, based on the fair market value of the SOP. The PSU value is the closing share price on the grant date.

Base salary

The base salary reflects the individual's experience, skills, duties, and responsibilities, and the contribution of the individual and role within the Group. It is paid monthly.

Base salary is reviewed annually and may increase considering a number of factors, including: (1) comparable salaries in appropriate comparator groups; (2) changes within the scope of the role; and (3) changes in the Group's size and profile.

Pension and other benefits

The primary purpose of pension and insurance plans is to establish a level of security for Solvay employees and their dependents with respect to age, health, disability and death. The benefits offered aim to be market-competitive, driving employee engagement and commitment in Solvay business.

Short-term incentive (STI)

Short-term incentives are linked partly to Group performance and partly to individual performance to drive and reward the overall annual performance of executives. Their short-term incentives have maximum award limits and are denoted as a multiple of their respective base salaries.

Performance is assessed on an annual basis using a combination of pre-determined Group and individual performance targets set at the start of the year, as approved by the Compensation Committee. More specifically, the performance measures are:

- Group performance measured against annual underlying EBITDA (under a specific Free Cash Flow constraint) and Sustainable Development indicator.
- Individual performance: measured against a set of predetermined annual objectives, approved by the Board of Directors.

Long-term incentive (LTI)

Long-term incentives consist of a 50/50 mix of stock options (SOP) and performance share units (PSU). Each annual LTI plan is subject to prior Board approval.

The Executive Committee (or the Board of Directors for the Executive Committee members) retains the right to exercise discretion, both upwards and downwards, of 50% of the target, to ensure that the level of award payable is appropriate and fair for special or unique achievements or circumstances, or to acknowledge insufficient performance. Where discretion is exercised, the 50/50 split principle between SOP and PSU grants will be respected and the rationale for the use of such discretion will be disclosed.

Stock options

The Compensation Structure offers a competitive LTI vehicle mirroring Belgian market practice. The stock option plan gives each beneficiary the right to buy Solvay shares at a strike price corresponding to the fair market value of the shares upon grant. They will only generate a potential gain for the beneficiaries if the stock price rises.

The use of stock options aims to incentivize Solvay's executives to work towards achieving robust sustainable returns for shareholders while offering the Company a robust retention tool. Under Belgian law, unlike other jurisdictions, taxes on stock options need to be paid by the executives at the time of grant. Therefore Solvay, like other Belgian companies, sets no additional performance criteria for determining the vesting of stock options, which nonetheless need to be held for a three-year vesting schedule.

Every year, the Board of Directors determines the volume of stock options available for distribution, based on an assessment of the economic fair value at grant using the Black Scholes financial formula. The total volume of options available is then allocated to the top executives of the Company based on the importance of their individual contribution/position to the success of the Solvay Group.

Key features:

- Options are granted at the money (or fair market value),
- Options become exercisable for the first time after three (3) full calendar years following grant,
- · Options have a maximum term of eight years,
- Options are not transferrable inter vivos,
- The plan includes a bad leaver clause.

Performance Share Units (PSU)

The PSU ensure alignment with market best practices, helping Solvay to remain competitive and to attract and retain key executives while offering a performance-contingent vehicle to incentivize executives to help deliver Solvay's long-term strategic objectives.

The PSU are settled in cash. They vest after three years from the date of grant and only if a combination of pre-set performance objectives are met (i.e. underlying EBITDA Growth, CFROI, and Greenhouse Gas Intensity Reduction). The minimum payout can vary from zero if the minimum performance required or "threshold" is not met, to 80% if the minimum performance "threshold" is met, and up to a maximum of 120% for a performance exceeding the pre-set stretch performance target.

Each year, the Board of Directors determines the budget available for distribution based on the closing value of Solvay's share at grant date. The total volume of PSU available is then allocated to the executives based on their expected ability to contribute substantially to the achievement of Solvay's long-term strategic objectives.

Key features:

- The plan is purely cash-based and does not encompass any transfer of shares to beneficiaries. As such, it does not dilute the shareholders' interests,
- The vesting of the awards is based on meeting pre-set performance targets for: (1) Underlying EBITDA growth (40% of the award), (2) CFROI (40% of the award), and (3) Greenhouse Gas (GHG) intensity reduction (20% of the award) (*),
- The performance period is measured over three years,
- Condition of employment up to achievement of performance targets,

 Payout in cash based on the value of Solvay shares at vesting date

At its sole discretion, the Executive Committee (or the Board of Directors for executive members) assesses the achievement of the targets, and the Executive Committee (or the Board of Directors for executive members) may also re-evaluate the targets in cases of material change of perimeter or other unexpected circumstances. With regard to the latter, such discretion will not be used as a matter of routine and, if used, the rationale for the use of such discretion will be disclosed.

2014-16 LTI performance share units payout

Target & Performance actuals

	Threshold	Target	Maximum	Actual	Actual %	Total actual %
CFROI (%) - 50%	6.3%	6.6%	6.9%	6.53%	95.0%	97%
EBITDA (m€) - 50%	2,380	2,530	2,680	2,519	98.0%	9/%

Payout

The conjunction of the performance achievement at 97%, the share price differential (grant share price vs. share price at vesting) and the total dividends over thee years (€10.15 per unit) has generated a payout of 111% of the target PSU amount.

6.3.3. Chief Executive Officer

The remuneration package of the Chairman of the Executive Committee (or the CEO) is in full compliance with Article 520 ter of the Companies' Code and is set by the Board of Directors based on recommendations by the Compensation Committee.

Under Article 520 ter of the Companies Code, from 2011 onwards, in the absence of statutory provisions to the contrary or express approval by the General Meeting of Shareholders, at least a quarter of variable compensation must be based on predetermined performance criteria that are objectively measurable over a period of at least two years, and at least another quarter should be based on pre-determined performance criteria that are objectively measurable over a period of at least three years.

CEO Compensation Structure Base salary

The base salary of the Chairman of the Executive Committee remains unchanged at $\{0.1, 0.1\}$ million and is positioned at the market median of Solvay's peer group of 17 European companies.

Pension & benefits

Regarding the CEO's extra-legal pension rights, given his selfemployed status in Belgium, the CEO has his own separate contractual agreement, with pension, death-in-service, and disability rules that reflect the contractual conditions that prevailed in Rhodia prior to the acquisition by Solvay.

Short-term incentive

The short-term incentive target is set at 100% of base salary, with a maximum of 150%. Payout of short-term incentive is based on the achievement of pre-defined performance targets based on:

- for 50% of the award the Group's underlying EBITDA (under a specific Free Cash Flow constraint),
- for 10% of the award the Group's Sustainable Development indicators. These indicators include, but are not limited to, Solvay's inclusion in extra-financial indexes and progress made on the internal sustainable development reference system, Solvay Way. Solvay Way defines the Group's approach to sustainability and covers all the Group's management systems,
- for 40% of the award individual objectives such as portfolio management (divestments/acquisitions), Research & Innovation (R&I) strategy, and People Engagement.

^(*) new criteria applicable with effect from LTIs granted in 2017

Long-term incentive

The long-term incentives offered to the CEO comprise a 50/50 mix of stock options and PSU, with an annual economic value target set at 150% of the base salary and a maximum guidance set at 200% of such base salary.

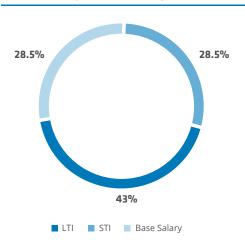
2017 Award

In 2017, the face value of his overall LTI award totaled €1.65 million, in line with his LTI target of 150% of base salary. The actual gain on the PSU at the payout date will depend upon on the level of achievement of the performance targets set under the plan as well as of the performance of Solvay shares on the stock market. The resulting numbers of stock options and PSU are calculated using the Black Scholes model.

	Annual Base	Х	Target award	=	Grant Value
LTI – Perf. Share Units	€ 1,100,000	Х	(150% / 2)	=	€ 825,000
LTI – Stock Option	€ 1,100,000	Х	(150% / 2)	=	€ 825,000
LTI – Total					€ 1,650,000

The design of the Solvay long-term incentive plan offered to the CEO is subject to the final approval of the Board of Directors. Solvay's commitment to offering its CEO a competitive yet challenging compensation package is demonstrated by the pay mix he is offered, with close to 70% of his pay being subject to the delivery of a sustainable value creation performance.

CEO total compensation at target for 2017



Amount of compensation paid and other benefits granted directly or indirectly to the Chairman of the Executive Committee

Based on the Board of Directors' assessment of the extent to which he achieved his individual pre-set objectives and whether the Group achieved its collective economic and sustainable development indicators, the actual 2017 compensation package of the Chairman of the Executive Committee was as follows:

Compensation paid and other benefits granted to the Chairman of the Executive Committee

In€	2017	2016
Base compensation	1,100,000	1,100,000
Variable compensation (Short Term Incentive) ⁽¹⁾	1,639,000	1,325,000
2014-16 Performance Share Units (Cash) ⁽²⁾	888,805	406,879
Pension and death-in-service and disability coverage (costs paid or provided for)	728,241	698,601
Other compensation components ⁽³⁾	16,652	15,279

- (1) Delivered either in cash or in warrants or in share options based on the Euronext Index SICAV.
- (2) Includes share price differential and dividends.
- (3) Company vehicle.

Short-term incentive calculation

The annual incentive target remained set at 100% of the base salary, with a maximum of 150%.

Each performance measure can vary from 0% to 200% achievement but the maximum total payout is capped at 150% of the target.

Performance Measures		% of the STI	Achievement	Payout factor
Underlying EBITDA (under cash constraint)		50%	138%	69%
Sustainable Development		10%	181%	18%
Individual Objectives	Strategy People Model	40%	154%	62%
Total		100%		149%

	Threshold	Target	Maximum	Actual Achievement	Actual Achievement in % ⁽¹⁾
Underlying EBITDA – Target	2.400	2.200	2.500	2.466	1200/
and Actuals (M€)	2,190	2,390	2,590	2,466	138%

⁽¹⁾ The scores 0% and 200% are defined using a range of -/+200M€ with a target set at 2,390M€. With 2466M€ underlying EBITDA achieved in 2017 before polyamide reclassification in discontinued operations, the Economic incentive scores is 138% vs target.

			Target Performance				Final
	Base salary	Χ	incentive	X	factor	=	Award ⁽¹⁾
STI	€ 1,100,000	Χ	100%	Х	149%	=	€ 1,639,000

⁽¹⁾ Delivered in April 2018 either in cash or in warrants or in share options based on the Euronext Index SICAV

The 2017 STI of the CEO corresponds to 149 % of his Base Salary, i.e. close to the maximum of 150 % of Base Salary, as assessed by the Compensation Committee and approved by the Board. This outcome is the result of:

- Group performance: underlying EBITDA under cash constraint and Sustainable Development indicators,
- Individual performance: pre-set annual objectives,
 - Strategy: finalization of portfolio strategic moves (sale of Polyamide activities), closing of sale of stake in Vinythaï and Acetow.
 - Optimization and functioning of the organization: strategic rationale and process design,
 - Talent development: Cytec management cross-fertilization, Executive Committee individual members development plan and evolution.

2014-16 PSU payout

	2014 16 DCLI				
	2014-16 PSU				
	target award	X	Payout Factor	=	Cash Payout
Total Perf. Share Units Payout (cash)	€ 800,000	X	111%	=	€ 888,805

6.3.4.Other members of the Executive Committee

Pension and other benefits

The Executive Committee members are entitled to retirement, death-in-service, and disability benefits on the basis of the provisions of the plans applicable in their home countries. Other benefits, such as medical care and company cars or car

allowances, are also provided according to the rules applicable in the host country. The nature and magnitude of these other benefits are largely in line with median market practice.

Short-term incentive

Target in % of base salary	Performance Measures	% of the STI
70%	Underlying EBITDA (under cash constraint)	60%
	Sustainable Development	10%
	Individual Objectives	30%
	Total	100%

The target short-term incentive for the members of the Executive Committee is 70% of base salary, with a maximum of 140% of base salary. Payout of short-term incentive is based on the achievement of pre-defined performance targets based on:

- for 60% of the award the Group's underlying EBITDA (under a specific Free Cash Flow constraint)
- for 10% of the award the Group's Sustainable Development indicators. These indicators include, but are not limited to, Solvay's inclusion in extra-financial indexes and progress made on the internal sustainable development reference system, Solvay Way. Solvay Way defines the Group's approach to sustainability and covers all the Group's management systems,
- for 30% of the award the individual performance of the manager as measured against a set of predetermined objectives.

The actual annual incentive can vary from 0% in cases of poor performance to 200% of the target in cases of outstanding collective and individual performance.

Long-term incentive

	Performance Shares Units (PSU's)	Stock Options
Executive Committee	Target Grant	Target Grant
	€ 250,000	€ 250,000

Total amount of compensation paid and other benefits granted directly or indirectly to the other members of the Executive Committee by the Company or an affiliated company

Compensation paid and other benefits granted to the other Members of the Executive Committee

In€	2017 ⁽¹⁾	2016 ⁽²⁾
Base compensation	2,337,909	2,259,531
Variable compensation (Short Term Incentive) ⁽³⁾	2,288,777	1,802,934
Performance Share Units (Cash) ⁽⁴⁾⁽⁵⁾	1,111,189	406,880
Pension and death-in-service and disability coverage (costs paid or provided for)	742,561	672,567
Other compensation components ⁽⁶⁾	139,490	118,151

- (1) V. De Cuyper, R. Kearns, K. Hajjar, P. Juéry
- (2) V. De Cuyper, R. Kearns, K. Hajjar, P. Juéry.
- (3) Delivered either in cash or in warrants or in share options based on the Euronext Index SICAV
- (4) Includes share price differential and dividends
- $\hbox{(5)} \quad \text{K. Hajjar not included in 2016 payout relative to plan 2013-15 (joined after the 2013 LTI grant)} \\$
- (6) Representation allowance, luncheon vouchers, company car

Variable compensation consisted of an annual incentive based on the performance achieved relative to pre-set collective Group economic and sustainable development performance objectives, and on the performance of the manager as measured against a set of pre-determined individual objectives.

The remuneration package of the members of the Executive Committee is in full compliance with Article 520 *ter* of the Companies' Code.

Executive Committee members receive stock options and performance share units as explained above.

Executive Committee members' expenses, including those of its Chairman, are governed by the same rules as apply to all Group management staff, i.e. the justification of all business expenses, item by item. Private expenses are not reimbursed.

In the case of mixed business/private expenses (e.g. cars), a proportional rule is applied in the same way as to all management staff in the same position.

In the area of insurance, the Company takes out the same type of cover for Executive Committee members as it does for its senior managers.

Pensions and retirement and death-in-service coverage for Executive Committee members are based in principle on the provisions of the schemes applicable to senior executives in their base countries.

6.4. Stock options and PSU allotted in 2017 to Executive Committee members

In 2017, at the proposal of the Compensation Committee, the Board of Directors allotted stock options to approximately 70 Group senior executives. The exercise price amounts to €111.27 per option, with a three-year vesting period. Executive Committee members were granted a total of 79,551 options in March 2017, compared with 208,260 options in 2016.

In combination with the stock option plan, the Board of Directors granted performance share units to approximately 450 Group executives, for a possible payout in three years' time if pre-set performance objectives (underlying EBITDA growth, CFROI, and GHG Intensity reduction) are met. Executive Committee members were granted a total of 16,349 PSU in March 2017 compared with 23,425 PSU in 2016 (2).

Country	Name	Function	Number of Options ⁽¹⁾	Number of PSU's ⁽²⁾
Belgium	Clamadieu, Jean-Pierre	Chairman of the Executive Committee	35,002	7,193
Belgium	De Cuyper, Vincent	Member of the Executive Committee	12,728	2,616
Belgium	Kearns, Roger	Member of the Executive Committee	10,607	2,180
Belgium	Hajjar, Karim	Member of the Executive Committee	10,607	2,180
Belgium	Juéry, Pascal	Member of the Executive Committee	10,607	2,180
TOTAL			79,551	16,349

- (1) Stock options: Black Scholes fair value for 2017 grant was at €23,57
- (2) PSU's share price for 2016 grant was at €114,70

Stock Options held in 2017 by Executive Committee Members

	Stock-options				31/12/2017			
Country	Name	Held at 31/12/2016	Granted in 2017	Exercised in 2017	Expired in 2016	Held	Exercisable	Non exercisable
Belgium	Clamadieu, Jean-Pierre	253,825	35,002	65,188	0	223,639	37,430	186,209
Belgium	De Cuyper, Vincent	85,027	12,728	13,087	0	84,668	30,565	54,103
Belgium	Kearns, Roger	143,791	10,607	28,728	0	125,670	44,397	81,273
Belgium	Hajjar, Karim	56,021	10,607	0	0	66,628	0	66,628
Belgium	Juéry, Pascal	69,812	10,607	0	0	80,419	28,437	51,982
TOTAL		608,476	79,551	107,003	0	581,024	140,829	440,195

6.5. Key provisions of Executive Committee members' contractual relationships with the Company and/or an affiliated company, including the provisions relating to compensation in the event of early departure

Executive Committee members, including its Chairman (or CEO), have directorships in Group subsidiaries as a function of their responsibilities. Where such directorships are compensated, they are included in the amounts given above, regardless of whether the position is deemed to be salaried or undertaken on a self-employed basis under local legislation.

Executive Committee members will not benefit from any contractual departure indemnity linked to the exercise of their office. In case of early termination, only the legal system applies.

Mr. Jean-Pierre Clamadieu's contract does not include a contractual indemnity in case of early termination except a 24-month non-competition clause.

Executive Committee members' contracts currently do not contain a clause providing a right of claw-back of variable compensation in cases of erroneous financial information.

7. MAIN CHARACTERISTIC OF RISK MANAGEMENT AND INTERNAL CONTROL SYSTEMS



Solvay leaders and managers are accountable for the adequacy of the risk management and internal control framework in their respective entities (businesses, functions).

The Internal Audit & Risk Management Department (IA/RM) advises and ensures that leaders are well supported. The team is in charge of setting up a comprehensive and consistent system of risk management and internal control across the Group.

Solvay has set up an internal control system designed to provide a reasonable assurance that (i) current laws and regulations are respected, (ii) policies and objectives set by general management are implemented, (iii) financial and extra-financial information is accurate, and (iv) internal processes are efficient, particularly those contributing to the protection of its assets.

The five components of the internal control system are described below.

7.1. The control environment

As the foundation of the internal control system, the control environment promotes awareness and compliant behavior among all employees. Its various elements create a clear structure of principles, rules, roles, and responsibilities, while demonstrating general management's commitment to compliance.

- The Solvay Management Book lists guiding principles and defines the roles and responsibilities of the Executive Committee, Global Business Units, and functions.
- The Code of Conduct is available on Solvay's website More information can be found in the Charter on Corporate Governance
- An Ethics Helpline, managed by a third party, enables employees to report potential Code of Conduct violations if they cannot go through their managers or through the Compliance organization, or if they wish to remain anonymous. More information can be found in the Charter on Corporate Governance.
- Standardized processes are in place for financial and nonfinancial activities.

7.2. The risk assessment process

The process of risk management takes into account the organization's strategic objectives and is structured into the following phases:

- Risk analysis (identification and evaluation)
- Decision on how to manage the critical risks
- Implementation of risk management actions
- Monitoring of those actions.

The approach to designing internal controls for major processes includes a risk assessment step defining which key control objectives to tackle. This is the case in particular for processes at subsidiary, shared service, GBU, or corporate level, leading to the production of reliable financial reporting.

More information on Enterprise Risk Management, including a description of the Group's main risks and the actions taken to avoid or reduce them, can be found in the "Risk management" section

7.3. Control activities

Solvay uses a systematic approach to designing and implementing control activities for the most relevant Solvay processes.

After a risk analysis and a risk assessment phase, the controls are designed and described by the corporate process managers with the support of the Risk Management team. The controls descriptions are used as a reference for the internal control assessment and roll-out across the Group.

At each level of the Group (corporate, Shared Services platforms, and GBUs), the manager operating the process is responsible for the control execution.

An annual internal control plan (indicating which issues and controls are to be priorities for the coming year, as well as the roll-out plan) is validated each year by an Internal Control Steering Committee chaired by the Group CFO and comprising all function general managers.

Solvay implements policies, processes, and red lines applicable to all employees in the following domains: management control, financing and cash flow, financial control, financial communication, tax, and insurance policies. Control activities are defined for all these financial processes and in major cross-Group projects, like acquisitions and divestitures. Furthermore, an online Financial Reporting Guide explains how the IFRS rules should be applied throughout the Group.

Financial elements are consolidated monthly and analyzed at every level of responsibility in the Company (Solvay Business Services, the finance director of the entity, Group Accounting and Reporting, and the Executive Committee). Elements are analyzed using various methods, such as a variance analysis, plausibility and consistency checks, ratio analysis, and comparison with forecasts.

Besides the monthly reporting analysis prepared by Group Controlling teams, the Executive Committee thoroughly reviews GBU performance every quarter in the context of business forecast reviews.

7.4. Information and communication

Group-wide information systems are managed by Solvay Business Services. A large majority of Group operations are supported by a small number of integrated ERP systems. Financial consolidation is supported by a dedicated tool.

All financial reporting procedures and internal controls ensure that all material information disclosed by Solvay to its investors, creditors, and regulators is accurate, transparent, and timely, and that it fairly represents the Group's most relevant developments, financial fundamentals, and performance.

The Group Accounting and Reporting department circulates written detailed instructions to all financial actors involved before each quarterly closing.

The publication of the quarterly financial results is subject to various checks and validations carried out in advance:

- The Investor Relations team designs, develops, and issues messages and information about the Group with the needs of financial markets in mind. It does so under the supervision and control of the Executive Committee,
- The Audit Committee ensures that financial statements and communications by the Company and the Group, conform to generally accepted accounting principles (IFRS for the Group, Belgian accounting law for the Company),
- The Board of Directors approves the consolidated periodic financial statements and those of Solvay SA (quarterly – consolidated only, semiannual and annual) and all related communications.

7.5. Internal control monitoring

The Audit Committee is in charge of monitoring the effectiveness of internal control systems. It supervises the work of Internal Audit and Risk Management with regard to financial, operational, and compliance monitoring. It is kept informed of the scope, programs, and results of the internal audit work, and it verifies that audit recommendations are properly implemented. The role and responsibilities of the Audit Committee are further detailed in the Charter.

The content of internal audit assignments is planned and defined on the basis of a risk analysis; due diligence focuses on the areas perceived as having the highest risks. All the consolidated entities within the Group are inspected by Internal Audit at least every three years. Internal Audit recommendations are implemented by management.

Other entities carry out similar activities in very specific areas. For example:

- The Health Safety & Environment department carries out health, safety, and environmental audits,
- Solvay's Business Services Compliance and Risk Management department conducts information system audits, in coordination with Internal Audit,
- The Ethics and Compliance department coordinates investigations of potential Code of Conduct infringements.

8. EXTERNAL AUDIT

The audit of the Company's financial situation, its financial statements, and the conformity of those statements – and the entries to be recorded in the financial statements in accordance with the Companies Code and the bylaws – are entrusted to one or more auditors appointed by the Shareholders' Meeting from among the members, either natural or legal persons, of the Belgian Institute of Company Auditors.

The responsibilities and powers of the auditor(s) are set by law.

- The Shareholders' Meeting sets the number of auditors and their emoluments in accordance with the law. Auditors are also entitled to reimbursement of their travel expenses for auditing the Company's sites and administrative offices.
- The Shareholders' Meeting may also appoint one or more alternate auditors. Auditors are appointed for three-year renewable terms, which may not be revoked by the Shareholders' Meeting other than for good reason.

The Audit mandate of Deloitte, represented by Michel Denayer, was renewed at the Ordinary Shareholders' Meeting of Tuesday, May 10, 2016, for a new term of three years (Shareholders' meeting 2019). The Meeting also appointed Deloitte, represented by Corine Magnin, as alternate auditor for three years.

The yearly 2017 audit fees for Solvay SA were set at €1.2 million. They include the audit of the statutory and consolidated accounts of Solvay SA. Additional audit fees for Solvay affiliates in 2017 amount to €5.0 million. Supplementary non-audit fees of €1.8 million were paid in 2017 by Solvay affiliates and consisted of the following:

- a. Invoiced by the statutory auditor of the Group:
 - Other assurance missions: €1.1 million,
- b. Invoiced by other Deloitte entities:
 - Other assurance missions: €0.1 million,
 - Tax advisory and compliance: €0.35 million,
 - Other advisory missions: €0.25 million.

9. ITEMS TO BE DISCLOSED PURSUANT TO ARTICLE 34 OF THE BELGIAN ROYAL DECREE OF 14 NOVEMBER 2007

According to Article 34 of the Belgian Royal Decree of November 14, 2007, the Company hereby discloses the following items:

9.1. Capital structure and authorizations granted to the Board

As at December 21, 2015, the capital of the Company amounted to \leq 1,588,146,240 represented by 105,876,416 ordinary shares with no par value, fully paid up.

All Solvay shares are entitled to the same rights. There are no different classes of shares.

9.2. Transfer of shares and shareholders' arrangements

Solvay's bylaws do not contain any restriction on the transfer of its shares.

The Company has been informed that certain individual shareholders who hold shares directly in Solvay have decided to consult one another when questions of particular strategic importance are submitted by the Board of Directors to the Shareholders' Meeting. Each of these shareholders, however, remains free to vote as he or she chooses. None of these persons, either individually or in concert with others, reaches the initial 3% transparency notification threshold.

Solvay is not aware of any other voting agreements among its shareholders or of the existence of a concert between its shareholders.

9.3. Holders of securities with special control rights

There are no such securities.

9.4. Control mechanism of any employee share scheme where the control rights are not exercised directly by the employees

There is no employee share scheme with such a mechanism.

9.5. Restrictions on the exercise of voting rights

Each Solvay share entitles holders thereof to exercise one vote at Shareholders' Meetings.

Article 11 of the Company's bylaws provides that the exercise of voting rights and other rights attached to shares that are jointly owned, or of which the usufruct and bare ownership rights have been separated or are pledged, are suspended pending the appointment of a single representative to exercise the rights attached to the shares.

The voting rights attached to the shares in Solvay held by Solvay Stock Option Management are, as a matter of law, suspended.

9.6. Appointment, renewal, resignation and dismissal of directors

The bylaws of the Company provide that the Company is to be managed by a Board of Directors composed of no less than five members, their number being determined by the Shareholders' Meeting (Article 14).

Directors are appointed by the Shareholders' Meeting for four years (and may be reappointed).

The Board of Directors submits directors' appointments, renewals, resignations or dismissals to the Ordinary Shareholders' Meeting for approval. It also invites such Shareholders' Meetings to vote on the independence of the directors fulfilling the related criteria, having first sought the advice of the Nominations Committee, whose mission is to define and assess the profile of any new candidate using its criteria for appointment and for specific competences.

The Ordinary Shareholders' Meeting decides on proposals made by the Board of Directors in this matter by a simple majority.

If a directorship becomes vacant during a term of office, the Board of Directors may appoint a new member, subject to ratification by the next Ordinary Shareholders' Meeting.

9.7. Amendment of Solvay's bylaws

Amendments to the Company's bylaws must be submitted as a resolution to the Shareholders' Meeting, at which at least 50% of the share capital or Solvay must be present or represented, and in principle must be passed by a 75% majority of the votes cast.

If the attendance quorum is not met at the first Extraordinary Shareholders' Meeting, a second Shareholders' Meeting may be convened and will decide without any attendance quorum requirement.

For certain other matters (e.g. amendment of the purpose of the Company), higher voting majorities may apply.

9.8. Powers of the Board of Directors, in particular to issue and buy back shares

9.8.1. Powers of the Board of Directors

The Board of Directors is the highest management body of the Company.

It is entrusted with all the powers that are not reserved, by law or under the bylaws, to the Shareholders' Meeting.

The Board of Directors has kept responsibility for certain key areas for itself and has delegated the remainder of its powers to an Executive Committee (further detailed in the Charter).

In all matters for which it has exclusive responsibility, the Board of Directors works in close cooperation with the Executive Committee, which in particular is responsible for preparing most of the proposals for decisions by the Board of Directors.

9.8.2. The Board's authorizations to issue and buy back shares

The Board of Directors was authorized, until December 31, 2016, to increase the registered capital by contributions in cash up to a maximum of €1.5 billion, of which a maximum amount of €1,270,516,995 will be allocated to the "capital" account and the remainder to the "issuance premium" account in the framework of the acquisition of Cytec Industries Inc. Said acquisition was completed on December 9, 2015, and in order to finance part of it, the Board of Directors proceeded with a share capital increase for an amount of €317,629,245 by issuing 21,175,283 new ordinary Solvay shares, with an issuance premium of €1,182,216,050. This special authorization is therefore no longer relevant.

The Shareholders' Meeting has currently not authorized the Board of Directors to acquire or dispose of Solvay's own shares.

9.9. Significant agreements or securities that may be impacted by a change of control of the company

The Ordinary Shareholders' Meeting of May 10, 2016 approved the change of control provisions relating to the December 2015 euro-denominated senior and hybrid bonds and the USD-denominated senior notes issued to finance the acquisition of Cytec and the general corporate purposes of the Solvay Group.

9.10. Agreements between the Company and its directors or employees providing for compensation if directors resign or are good leavers, or in the case of a public takeover bid.

Not applicable

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RISK MANAGEMENT

1. INTRODUCTION

In a context of global economic and political uncertainty, evolving power balances, changing growth dynamics, shortening market cycles, rapid technological evolution, and increased sensitivity and expectations related to climate change and energy transition, Solvay believes that effectively monitoring and managing risks is key to achieving its strategic objectives.

2. RISK MANAGEMENT PROCESS

The risk assessment process – endorsed by Solvay's Board – helps the Group achieve its business objectives, both financial and extra-financial, while respecting laws, regulations, and the Solvay Code of Conduct.

Solvay's Enterprise Risk Management (ERM) approach – a key mechanism to achieve short, medium, and long-term objectives

Solvay's business is diverse, entrepreneurial, and international. Operations face a number of significant risks. Accordingly, Solvay has designed a dynamic process in which key players assess the risks in their area of responsibility and/or expertise.

All GBUs conduct risk assessment as an integral part of their annual strategic review process

Risk analysis

Solvay's systematic risk management approach is integrated within its strategy, business decisions, and operations. It ensures that Group leaders proactively identify, assess, and manage all potentially significant risks. Risk assessment helps create value in the short, medium, and long term, and always takes sustainability into consideration. Two of the four main impact types used to assess risks reflect our growing sensitivity to extra-financial issues, namely impacts on people and on the environment. The other two – economic and reputational impacts – directly affect the Group's operational and financial performance. In line with Solvay's strategic objectives, risks are then categorized as follows: "main risks" (rated as the most critical), "emerging risks", and "other risks".

Economic Impact on Impact on the Impact on impact people environment reputation

Deciding how to manage critical risks

Both day-to-day and strategic decision-making take all key risks and opportunities fully into account using financial and extrafinancial criteria.

Implementation of risk management actions

Risk management is a key success factor for Solvay because it allows us to mitigate risks associated with the solutions we provide. Improvements to Solvay's Enterprise Risk Management methodology are allowing individual GBUs and Functions – and the Group as a whole – to more effectively prioritize risks and focus their risk response. A dedicated dashboard is updated twice a year to reflect both progress on mitigating actions and new developments in the risk environment.

Monitoring of risk management actions

Critical risks for the Group are closely monitored by the Group Risk Committee – members of the Executive Committee are appointed as Risk Sponsors – to ensure that these risks are adequately addressed. Particular attention is paid to cross-checking the analysis with the materiality analysis performed by the Sustainable Development Function.

A sound risk management system embedded at all levels of the Group

GBUs and Function leaders are accountable for the identification, monitoring and management of the key risks in their domain. Risk management is therefore strongly embedded in the day-to-

day running of each entity and operational managers can react rapidly in the event of changing circumstances. The risk management process is a valuable mechanism for GBUs and Functions to guide priorities and to raise the likelihood of achieving their business goals.

1		2	3	4	5
GLOBAL BUSINESS UNITS	FUNCTIONS	LEADERSHIP COUNCIL ¹	GROUP RISK COMMITTEE ²	EXECUTIVE COMMITTEE	BOARD OF DIRECTORS
 Reviews and uporisk matrix Defines risk own mitigation of mo 	ers to lead	Identifies a list of Group risks – the most relevant ones – to be submitted to an assessment phase	Assesses, decides on and closely monitors these Group risks	Each of these Group risks is sponsored by an Executive Committee member	Oversees and endorses

CORPORATE RISK DEPARTMENT

Supports and coordinates risk management throughout Solvay

- 1 Executive Committee, GBU Presidents, Function General Managers, Zone Presidents, and Solvay Business Services General Manager
- $2\ Executive\ Committee\ and\ General\ Managers\ of\ the\ Human\ Resources,\ Industrial,\ Legal,\ and\ Sustainable\ Development\ functions$

As to the Group level risks, they are managed with the contribution of the Leadership Council for identification, the Group Risk Committee for assessment, and the Executive Committee members for sponsorship for treatment and risk response. The Audit Committee meets, once a year, with the Chairman of the Executive Committee and the CEO and other members of the Board to discuss the major risks facing the Group. During the year, the Audit Committee benefits from Risk Owners' presentations on Group risks, for example on industrial safety, security, cyber risk, ethics, and compliance.

Assessing major projects linked to Solvay's transformation

An appropriate risk assessment methodology is applied to significant projects, whether acquisitions, major capital investments, or transversal projects.

Internal control is one aspect of risk management. Please refer to the Corporate Governance section of this Annual Report for a detailed description of Solvay's risk management and internal control system.

Crisis Preparedness operates a structured network within the Group. Assigned members perform tasks and implement programs to ensure the readiness of their business units and functions. These programs include crisis simulations, media training for potential spokespersons, maintenance of key databases, and analysis of relevant internal and external events. The risks identified through the Enterprise Risk Management approach influence the scenarios used in the simulations

3. SOLVAY'S MAIN RISKS

The Group Risk Committee has assessed the impact and level of control of the Group risks, using a four-level scale for each criterion.

Four main types of impact were considered: economic impact, impact on people, impact on the environment, and impact on reputation.

The level of control was assessed by considering the following questions:

- Are the mitigating/controlling actions defined?
- Are the actions implemented, fully or partially?
- Is the effectiveness of those actions monitored?

Criticality level is determined by the combination of the risk's two ratings (impact and level of control) at the time of the assessment.

Criticality level	Risk	Trend in criticality level	Corresponding materiality aspects
High	Security	•	No significant link
	Climate related physical risks	→	Greenhouse gas emissions Water and wastewater management
	Industrial safety		Accident and safety management Employee health and safety
	Transport accident		Waste and hazardous materials management
	Ethics and Compliance	$\overline{\bullet}$	Management of the legal, ethics & regulatory framewor
	Climate transition risk*	N/A	Greenhouse gas emissions Energy management Sustainable business solutions
\downarrow	Cyber-risk		Data security and customer privacy
Moderate	Chemical product usage		Hazardous materials management Sustainable business solutions

^{*} Emerging risk: newly developing or changing risk that may, over the long term, have a significant impact which will need to be assessed in the future.

The description of the risks relevant to Solvay and the risk-reduction actions the Group takes are listed below. The mitigation efforts described do not guarantee that risks will not materialize or impact the Group, but they show how Solvay proactively manages risk exposures.

Security



Risk description

Intentional attacks on Solvay sites, information and people with the intent to cause harm, damage, or negative consequences.

Prevention and mitigation actions

- Solvay has a threat-based and compliance-based security approach to protecting sites, information, and people.
- A Group Security Director coordinates all security activities globally in order to ensure efficient security risk mitigation.

- The Executive Committee has endorsed the creation of two governance bodies:
 - a Security Board, chaired by the CFO and another Executive Committee member, and
 - a Security Coordination Working Group, chaired by the Group Security Director, which aims to run a continuous security threat monitoring program and an optimized security program for the Group.

2017 main actions

- Continuation of the Group's cyber-security initiatives in Solvay Business Services (SBS).
- Launch of a Group-wide physical security program, focusing initially on the Group's high-risk industrial sites. Vulnerabilities have been identified and will be mitigated in 2018.
- Adoption of a Group Security Policy, embedding security in the Group's governance rules.

Climate related physical risk



Risk description

Climate change increases the severity of extreme natural events, generates chronic deviations in mean temperatures and precipitation patterns, and causes sea levels to rise. This could impact Solvay's sites and supply chain. These impacts could manifest themselves as one or more of the following consequences:

- · Inability to operate plants,
- · Damage to assets,
- · Difficulty in supplying customers,
- Disruption in the supply of raw materials, energy or utilities.

Prevention and mitigation actions

This risk has a long-term horizon; nevertheless, Solvay is creating a consistent mitigation plan, the details of which are as follows:

- Build a methodology (type of impacts to be taken into account

 major events, permanent changes, environmental, socio-economic impacts level of impact, location, etc.),
- Consider the following impacts:
 - More frequent and more extreme natural events such as floods and storms
 - Regulatory impact (intake water temperature, return water temperature)
 - Sea level rise
 - Drought/Hydric stress => update previous study
 - Deploy the methodology on the industrial footprint and supply chain flows.

2017 main actions

Regulations impact (intake water temperature, return water temperature) => assessment concluded that this item is not a high impact issue

Industrial safety



Risk description

- A major accident such as a fire, explosion, or loss of containment may result in fatalities, life-altering injuries, harm to the environment, or harm to local communities,
- Any fatality or life-altering injury not related to a major accident.

Prevention and mitigation actions

Occupational safety and process safety are priorities. The Group has a long record of good safety performance and has made significant progress by actively sharing good practices.

Occupational safety:

All fatal and life-altering accidents are preventable. Despite the continuous decrease of the number of medical treatment accidents (MTA) on its sites, Solvay has reached a plateau in terms of the number of high severity incidents (fatalities and life-altering accidents).

The focus is now on the engagement level as a means of keeping people safe and save lives. The main Solvay engagement activities are the following: Safety Days, Safety Leadership Visits, Behavior Based Safety, Best Practice Sharing, and Personal Safety Objectives.

Solvay implements the "Solvay Life Saving Rules" (SLSR) which cover the activities which, when not performed safely, can and have resulted in fatalities and life-altering injuries within the Group.

Moving off the plateau requires an enhanced approach to Safety Leadership. In 2017, Solvay developed a "Safety Climate Assessment", based on the Dov Zohar methodology, to determine the maturity level of the safety culture at site level.

Solvay initiated a collaborative process to develop a shared perception of life-threatening activities covered by the "Solvay Life Saving Rules", with the goal of developing a common risk mitigation approach across all Solvay sites.

Safety results are reviewed monthly by GBUs and at the Executive Committee level.

Process safety management:

Solvay applies a preventative risk-based approach founded on systematic process safety risk analyses and management of change processes.

2017 main actions

Process Safety:

- 78% of all sites have had a process hazard assessment in line with Group requirements within the last five years (2017 target – 70%; 2020 target – 100%),
- No high-risk situations (Level 1 risk sheets) older than one (1) year

Occupational safety:

- Progressive implementation of the "Safety Climate Assessment" in the sites,
- Common mitigation measures (minimum requirements) for Solvay Life Saving Rules defined. Refinement and roll-out during the first half of 2018 at all Solvay sites,
- Evaluated different approaches to Safety Leadership. The selected approach will be introduced in 2018, beginning with senior leadership in the Industrial Family.

Transport accident



Risk description

An accident in connection with hazardous chemical transportation poses the risk of injury to neighbors or the public.

Prevention and mitigation actions

- Solvay follows the transport safety recommendations of associations such as CTEF (Comité Technique Européen du Fluor), and programs such as Responsible Care®
- · Optimization of transport routes,
- Global selection process for dangerous goods transporters, relying on selected and audited haulers,
- Assessment of transporters handling Solvay's "high concern dangerous goods",
- Dangerous goods safety advisors network,
- Corrective actions, and
- Worldwide emergency assistance from the Carechem (external emergency chemical helpline service) in the event of an accident.

2017 main actions

Pursuing Solvay transport safety program to reinforce preventive actions.

Ethics and compliance





Risk description

Risk arises from a potential failure to comply with:

- · Solvay's Code of Conduct,
- · Supporting policies and procedures,
- Laws and regulations in the jurisdictions in which Solvay operates.

Examples:

- Failure to implement good governance in a joint venture,
- · Direct or indirect involvement in human rights violations,
- Intentional misstatement of financial reporting, corruption and by-passing of internal controls.

Prevention and mitigation actions

Solvay's Code of Conduct, policies and procedures:

- Applicable to employees, critical suppliers, and majority-owned joint venture partners,
- Several training courses & communication actions to address behavioral risks.

Special training courses to mitigate specific risks:

- · Anti-bribery and anti-corruption,
- · Anti-competition,
- Human Rights in Business Policy: implementation, governance and training.

Group-wide Speak Up program for reporting non-compliance, either directly to management or to third-party Helpline.

2017 main actions

- Almost 80% of employees trained on Solvay's Code of Conduct,
- More languages/dialects added to web-based training catalog for Code of Conduct.
- New Human Rights Policy adopted and published; internal Steering Committee appointed to oversee implementation and compliance, and Human Rights training for sensitive populations,
- Anti-bribery and anti-corruption (ABAC) training of more than 1,000 leaders and employees in sensitive positions.

Climate transition - emerging risk





Risk description

The lack of a Group strategy to address climate-related transition risks (as defined by TCFD^[3]), wider environmental challenges, and future resource scarcity could cause damage to Solvay reputation, business losses, undervaluation and difficulty attracting long-term investors.

Climate transition risks stem from various causes:

- Policies and legal context: regulations and actions to limit CO₂
 emissions, for example increasing the price of greenhouse gas
 (GHG) emissions,
- Technology: unsuccessful investment in new, lower-emission technologies,
- Markets: lack of adaptation to changing customer behavior,
- Reputation: negative stakeholder attitudes if their climate change concerns are not addressed effectively.

Apart from greenhouse gas emissions (GHG), Solvay activities' environmental impacts come from:

- Use of raw materials from fossil or non-renewable resources.
- Energy consumption,
- Water use,
- Waste production (solid or liquid, hazardous or safe),
- NO_x, SO_x, Volatile Organic Compound (VOC) or dust emissions.

Prevention and mitigation actions

- Solvay's strategy focuses on businesses with higher added value and less environmental exposure,
- Every year, the Sustainable Portfolio Management (SPM) tool assesses the environmental exposure of our sales and our innovation projects portfolio. SPM includes climate-related criteria aligned on 2°C scenarios,
- The Carbon Intensity action plan has a 40% reduction target for 2025 (reference year 2014).

2017 main actions

 Appointment of an Executive Committee Supervisor for climate and the start of work on a comprehensive climate strategy roadmap, A new plan and 2020 targets for air emissions (SO_x, NO_x, VOC), water usage, and hazardous waste.

Cyber risk



Risk description

Information and cyber risk includes the theft, manipulation, or destruction of information, and the inability to ensure service continuity or to protect confidential, critical, or sensitive information.

Prevention and mitigation actions Cyber security program

Solvay's cyber security and confidential information loss-prevention program:

- Independent assessments, including penetration tests are conducted by external experts
- Solvay Business Services (SBS) has renewed its ISO 9001: 2015
 quality management program for all its activities, and obtained
 its ISO 27001: 2013 certification which encompasses
 cybersecurity for the majority of its information systems
 activities
- Training on information systems security policies and best practices has been completed for all SBS information systems professionals
- End-user security training remains mandatory for all employees. Cybersecurity tips are published regularly to increase employee awareness.

A significant cyberattack could result in the loss of critical business information and/or could negatively impact the company's operations and results. Therefore the Company will continue to solidify its cyber defenses to manage the evolving cyber threat landscape.

Insurance

Solvay is insured against the potential financial impact of a cyber event with respect to assets, business interruptions, and cases of fraud

2017 main actions

- Solvay continues to enhance its overarching cyber security strategy and governance, develop the corporate information security program, and explore other functions/capabilities to enrich the company's security posture and ability to respond to a cyber-related threat,
- Certification for all Solvay Business Services (SBS).

Chemical product usage



Risk description

- Solvay's exposure stems from the possibility of injury to or health impact on third parties or damage to their property caused by the use of a Solvay product, as well as from the resulting litigation.
- Inappropriate use of one of Solvay products in a customer's plant, or use in applications or markets for which the product is not designed (inappropriate use), or use by the customer that is not endorsed by Solvay.
- The possible consequences of a faulty product include exposure to liability for injury or health impairment and damage, and to product recalls. Product liability risk is generally higher for products used in healthcare and food & feed applications.
- The possibility of an authorization for the use of a marketed product being refused due to its SVHC (substance of very high concern) character.

Prevention and mitigations actions

- Solvay Safety Data Sheets (SDS) ensure harmonized content by implementing a common worldwide SAP system for the Group.
- SDS are constantly maintained and distributed worldwide for all products to all customers in the appropriate languages.
 Global Business Units ensure that SDS are revised at least every three years, for all products they put on the market,
- Recall procedures are developed and deployed as prescribed by the product stewardship programs.
- Insurance reduces the financial impact of a product liability risk, including for first-party and third-party product recalls.

2017 main actions

The Solvay "Product Safety Management Process" (PSMP) identifying risks relating to products marketed by Solvay has been updated to integrate new regulatory requirements and additional potential risk causes (legal, supply chain, etc.). All GBUs are implementing this process with a specific focus on prioritizing the required risk assessments in the products portfolio and on regularly deploying risk assessments for the most sensitive product applications.

4. OTHER RISKS

Market and growth - strategic risk Description

Solvay's exposure to developments in its markets or its competitive environment, and the risk of making erroneous strategic decisions.

Prevention and mitigation actions

- Systematic and formal analysis of markets and marketing challenges with respect to investments and innovation project ramp-ups,
- Development of GDP+ growth markets: Automotive & Aerospace, Resources & Environment, Electrical & Electronics, and Agro, Feed & Food,
- Development of customized, mission-critical solutions with Solvay key accounts. Adaptation of operations to new energy and CO₂ markets,
- Stronger focus on cash conversion and generation,
- Initiate cessions of Vinythaï, Acetow and Polyamide businesses which were under sustainability and cyclicality radar screen.

Supply chain and manufacturing reliability risk

Description

Risks related to raw materials, energy, suppliers, production, storage units, and inbound/outbound transportation.

Prevention and mitigation actions

For manufacturing reliability:

- · Insurance,
- Geographic distribution of production units around the world,
- Group property loss prevention program focusing on the prevention and mitigation of damage to assets and loss of profit due to fire, explosion, accidental chemical release, and other adverse events.

For supply chain:

- Third-party CSR assessment and adherence to the Solvay Supplier Code,
- Ownership of mines and quarries of trona, limestone, and salt,
- Programs to reduce energy consumption.

Project selection and management

Description

- Allocation of resources to projects (capital expenditure, mergers and acquisitions) misaligned with Solvay's growth strategy,
- Major project facing difficulties with the risk of not reaching its objectives.

Prevention and mitigation actions

- Governance for medium-sized projects (extension of the methodology used for major capital projects to GBUs),
- Investment Committee providing the Executive Committee with an analytical view of capex allocation efficiency and capex plan,
- Capex Excellence methodology for project portfolio on smaller projects,
- Performance analysis after implementation

The combination of these actions has led to much better control over EBITDA conversion into cash and a conversion level comparable to similar companies in the industry.

Regulatory, political and legal risk Description

- · Changes in legislation and regulations,
- Solvay's exposure to circumstances where the normal exercise of public authority is disrupted,
- Exposure to actual and potential judicial and administrative proceedings. (Important Litigation section).

Prevention and mitigation actions

- Balanced global presence to reduce the impact of adverse regulatory and political developments,
- A Government and Public Affairs department working continuously with public national and European authorities, as well as through the local Belgian embassy,
- Financial provisions are made based on Solvay's awareness of legal risk.

Financial risk

Description

- Liquidity risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements),
- Foreign exchange risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements),
- Interest-rate risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements),
- Counterparty risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements),

- Pension obligation risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements),
- Tax litigation risk (see note F32 Financial instruments and financial risk management to the consolidated financial statements).

Prevention and mitigation actions

A prudent financial profile and conservative financial discipline:

- Group's Investment Grade status: Baa2/P2 rating (stable outlook) by Moody's and BBB/A2 rating (stable outlook) by Standard & Poor's in 2017,
- Solvay promotes transparent and regular discussions with leading rating agencies.

Strong liquidity reserves:

- As of the end of 2017, the Group has €1.1 billion in cash and equivalents (namely, other current financial instruments), as well as €3.0 billion of committed credit facilities (a multilateral revolving credit facility of €2.0 billion, and an additional €1.0 billion from bilateral revolving credit facilities with key international banking partners).
- The Group has access to a Belgian Treasury Bill program for €1 billion, and alternatively, to a US commercial paper program for US\$500 million.

Currency hedging policy:

 Solvay monitors the foreign exchange market closely and takes hedging measures, principally for terms shorter than one year and generally not exceeding 18 months.

Interest rate hedging policy:

 The Group locks in the majority of its net indebtedness at fixed interest rates. Solvay monitors the interest rate market closely and enters into interest rate swaps whenever they are deemed appropriate.

Monitoring of Group counterparties' ratings:

For its treasury activities, Solvay works with banking institutions
of the highest creditworthiness (selection based on major
rating systems) and minimizes the concentration of risk by
limiting its exposure to each of these banks to a certain
threshold.

 For its commercial activities, Solvay's external customer risk and cash collection are monitored by a strong network of credit managers and cash collectors located in the Group's various operating regions and countries. Their controls are supported by a set of detailed procedures and managed through Corporate and GBU Credit Committees. These loss mitigation measures have led, over the past few years, to a record low rate of customer defaults.

Pension governance and pension plan optimization:

- Pension governance: Solvay has set guidelines for maximizing its influence over local pension fund decisions within the limits provided by domestic laws,
- Pension plan optimization: reducing the Group's exposure to defined-benefit plans by either converting existing plans into pension plans with a lower risk profile for future services or closing them to new entrants,
- A global ALM (Asset Liability Management) analysis of the Group's pension plans, representing about 90% of the Group's gross or net pension obligations, is performed every three years to identify and manage corresponding risks on a global basis.

Control processes for tax regulation compliance and transfer pricing policies:

- Control processes for tax regulation compliance include monitoring procedures and systems, thorough internal reviews, and audits performed by reputable external consultants,
- Transfer pricing policies, procedures and controls are aimed at meeting the requirements of the authorities,
- Solvay's Tax department pays close attention to the correct interpretation and application of new tax rules to avoid future litigation.

2017 main actions:

- Early repayment of ~€360 m of expensive bonds maturing in the next years and of €1.1 billion bonds maturing in 2017,
- Refinancing of the multilateral credit facility of €2 bn,
- Refinancing of the shareholders loans of the 50/50 Saudi joint venture with Sadara for €265 m (100%),
- Issuance of a new global statement of investment principles addressed to our Pension Trustees worldwide and applicable to the Group's Pension related assets,

 Deployment of a Guarantee management tool group-wide allowing for a comprehensive inventory of outstanding guarantees across entities, enhancing visibility and control as well as facilitating appropriate management.

Occupational diseases and pandemic risk Description

Work-related diseases recognized as resulting from exposure to occupational hazards, with generally repeated exposure.

Prevention and mitigation actions

- A strong worldwide program monitors occupational disease and performs a comprehensive assessment of compliance with occupational hygiene standards,
- Definition of conservative exposure limits, with a specific focus on nano-materials, and SVHCs and health-related applications of Solvay products,
- · Advanced risk-based medical surveillance,
- Global pandemic preparedness plan covering all plants and businesses.

Environmental risk

Description

Managing or remediating historical soil contamination at a number of sites and complying with future changes in environmental legislation

Prevention and mitigation actions

- ISO 14001 or equivalent integrated HSE management systems implemented at all manufacturing sites,
- Policies and risk control programs applied in all production units,
- Sites with a history of soil contamination carefully monitored and managed,
- Risk characterization approach rolled out at every affected site,
- · Local regulatory monitoring.

IT risk

Description

Inability to ensure continuity of services or to provide information services adapted to the needs of the business.

Prevention and mitigation actions

- Dedicated data network and regional internet gateways managed by trusted service providers,
- Annual IT audit program to ensure compliance with the information system security policies.

IMPORTANT LITIGATION



With its variety of activities and its geographic distribution, the Solvay Group is exposed to legal risks, particularly in the areas of product liability, contractual relations, antitrust laws, patent disputes, tax assessments, and HSE matters. In this context, litigation cannot be avoided and is sometimes necessary so as to defend the rights and interests of the Group.

The outcome of proceedings cannot be predicted with certainty. It is therefore possible that adverse final court decisions or arbitration awards could lead to liabilities (and expenses) that are not covered or not fully covered by provisions or insurance, and that could have a material impact on the revenues and earnings of the Group.

Ongoing legal proceedings involving the Solvay Group that are currently considered to involve significant risks are outlined below. The legal proceedings described below do not constitute an exhaustive list.

The fact that litigation proceedings are reported below is unrelated to the merits of the cases. In all the cases cited below, Solvay is defending itself vigorously and believes in the merits of its defenses.

For certain cases, Solvay has created reserves/provisions in accordance with the accounting rules to cover financial risk and defense costs (see "Provisions for litigation to the consolidated financial statements" of the present document).

Antitrust proceedings



In 2006, the European Commission imposed fines against Solvay (including Ausimont SpA, acquired by Solvay in 2002) for alleged breaches of competition rules in the peroxygens market for which Solvay was fined.

Joint civil lawsuits were filed before the Court of Dortmund (Germany) in 2009 against Solvay and other manufacturers based on an alleged antitrust violation, claiming damages from the manufacturers on a joint and several basis. The value of the claims reduced after several settlements is worth €63 million (excluding interest) after settlements were reached between the plaintiff and most of the defendants. Several questions on the jurisdiction of the Court of Dortmund have been submitted to the European Court of Justice, and proceedings before the Court of Dortmund are pending.

In Brazil, Solvay is facing administrative claims related to alleged cartel activities in various markets. CADE (the Brazilian antitrust authority) issued fines against Solvay and others in May 2012 relating to Hydrogen Peroxide activity and in February 2016 related to perborate activity (Solvay's shares of these fines amount to €29.6 million and €3.99 million respectively). Solvay has filed a claim contesting these administrative fines before the Brazilian Federal Court.

HSE-related proceedings















In October 2009, the public prosecutor of the Criminal Court of Alessandria (Italy) charged several individuals (including employees and former employees of Solvay and Ausimont SpA, now Solvay Specialty Polymers Italy) in relation to alleged criminal violations of environmental laws and public health legislation. The provisional claims of civil parties admitted to the trial amounted to about €105 million.

In December 2015 the Assize Court of Alessandria sentenced three local Solvay managers to imprisonment and awarded civil damages of around €400k. This judgment was appealed and is currently pending.

As of the end of 2016, 17 civil proceedings have been brought before the Civil Court of Livorno (Italy) by past workers and relatives of deceased workers at the Rosignano site seeking damages (provisionally quantified at $\[\in \]$ million) in relation to diseases allegedly caused by exposure to asbestos. Three of the 17 proceedings have been dismissed so far.

Pharmaceutical activities (discontinued)

In the context of the sale of the pharmaceutical activities in February 2010, the contractual arrangements have defined terms and conditions for the allocation and sharing of liability arising out of the activities before the sale.

Subject to limited exceptions, Solvay's exposure for indemnifications to Abbott for liabilities arising out of sold activities is limited to an aggregate amount representing €500 million and is limited in duration.

This includes indemnification against certain potential liabilities for the US Qui Tam litigation focusing on promotional and marketing practices that allegedly influenced sales of the drugs ACEON®, LUVOX®, and ANDROGEL®, and more recently filed testosterone replacement therapy (TRT) litigation also focusing on the drug ANDROGEL®. These claims are proceeding at varying rates of resolution.

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BUSINESS REVIEW

1. OVERVIEW OF THE CONSOLIDATED RESULTS

Key financial figures

			IFRS ⁽¹⁾			Underlying	
In € million	Notes	2017	2016	% yoy	2017	2016	% yoy
Net sales	B1	10,125	9,569	5.8%	10,125	9,569	5.8%
Net operating costs, excluding depreciation & amortization	B2	_	_	n.m.	(7,894)	(7,493)	(5.4)%
EBITDA	B3	2,029	1,932	5.1%	2,230	2,075	7.5%
EBITDA margin	B3				22%	22%	0.3pp
Depreciation, amortization & impairments	B4	(1,054)	(1,074)	1.9%	(704)	(672)	(4.7)%
EBIT		976	858	14%	1,527	1,403	8.8%
Net financial charges	B5	(298)	(334)	11%	(394)	(464)	15%
Income taxes	B6	197	68	n.m.	(299)	(272)	(10)%
Tax rate	B6				27.5%	30.3%	(2.8)pp
Profit (loss) from discontinued operations	B7	241	82	n.m.	159	240	(34)%
(Profit) loss attributable to non-controlling interests		(56)	(53)	3.9%	(54)	(61)	(11)%
Profit attributable to Solvay share		1,061	621	71%	939	846	11%
Basic earnings per share (in €)	B24	10.27	6.01	71%	9.08	8.19	11%
of which from continuing operations	B24	7.97	5.34	49%	7.59	6.02	26%
Dividend ⁽²⁾	B25	3.60	3.45	4.3%	3.60	3.45	4.3%
Capex	B8	(822)	(981)	16%	(822)	(981)	16%
of which from continuing operations	B8	(716)	(839)	15%	(716)	(839)	15%
Cash conversion	B8				68%	60%	8.3pp
Free cash flow	B9	871	876	(0.5)%	871	876	(0.5)%
of which from continuing operations	B9	782	658	19%	782	658	19%
Net working capital	B10	1,414	1,396	1.3%	1,414	1,396	1.3%
Net working capital/sales	B10				-	_	(1.5)%
Net debt ⁽³⁾	B11	(3,146)	(4,356)	28%	(5,346)	(6,556)	18%
Underlying leverage ratio	B11				2.17	2.60	(0.43)
CFROI ⁽⁵⁾	B12				6.9%	6.3%	0.6рр
Research & innovation ⁽⁵⁾	B13				(325)	(350)	7.0%
Research & innovation intensity ⁽⁵⁾	B13				3.2%	3.2%	

- (1) A full reconciliation of IFRS and underlying income statement data can be found in section 5 of the Business Review.
- (2) Recommended 2017 dividend, pending General Shareholders meeting on May 8, 2018.
- (3) Underlying net debt includes the perpetual hybrid bonds, accounted for as equity under IFRS.
- (4) Ratio of underlying net financial debt to underlying EBITDA, adjusted for discontinued operations.
- (5) CFROI (Cash Flow Return On Investment) and Research & Innovation reference figures are provided on a non-restated basis.

Historical key financial data

			<i>F</i>	As published		
In € million		2013	2014	2015 ⁽¹⁾	2016	2017
Income statement data						
Sales	а	10,367	10,629	11,047	11,403	10,891
Net sales	b	9,938	10,213	10,578	10,884	10,125
Underlying EBITDA		1,663	1,783	1,955	2,284	2,230
Underlying EBITDA margin	d	17%	17%	18%	21%	22%
IFRS EBIT	е	647	652	833	962	976
Underlying profit for the period	f				907	992
IFRS profit for the period	g	315	13	454	674	1,116
Underlying profit attributable to Solvay share	h	507	622	680	846	939
IFRS profit attributable to Solvay share	i	270	80	406	621	1,061
Cash flow data						
Capex	k	(810)	(987)	(1,037)	(981)	(822)
of which from continuing operations		(708)	(861)	(969)	(929)	(716)
Cash conversion	m = (c+l)/c	57%	52%	50%	59%	68%
Free cash flow	n	524	656	387	876	871
Balance sheet data						
Net working capital	р	1,217	1,101	1,557	1,396	1,414
Net working capital/sales	$q = \mu(p/a)^{(2)}$	12.9%	13.5%	13.4%	15.3%	13.8%
Underlying net debt ⁽³⁾	r = s+t	(2,302)	(1,978)	(6,579)	(6,556)	(5,346)
Perpetual hybrid bonds	S	(1,200)	(1,200)	(2,200)	(2,200)	(2,200)
IFRS net debt	t	(1,102)	(778)	(4,379)	(4,356)	(3,146)
Total equity	u	7,453	6,778	9,668	9,956	9,752
Equity attributable to non- controlling interests	V	378	214	245	250	113
Perpetual hybrid bonds in equity	W	1,194	1,194	2,188	2,188	2,188
Equity attributable to Solvay share	X = U-V-W	5,881	5,369	7,234	7,518	7,451
Underlying leverage ratio ⁽⁴⁾	y = -r/c	1.4	1.1	2.8	2.6	2.2
Other key data						
CFROI	A	6.9%	6.9%	6.9%	6.3%	6.9%
Research & innovation	В	(280)	(287)	(320)	(350)	(325)
Research & innovation intensity	C = -B/b	2.8%	2.8%	3.0%	3.2%	3.2%

^{(1) 2015} data are not presented on pro forma basis, i.e. excude Cytec.

⁽²⁾ Average of the quarters.

⁽³⁾ Underlying net debt includes the perpetual hybrid bonds, accounted for as equity under IFRS.

⁽⁴⁾ The 2016 underlying leverage ratio is calculated based on the underlying EBITDA including the discontinued operations Acetow and Vinythai. The 2015 underlying leverage ratio is calculated based on the underlying pro

The table above presents the historical figures of the Group as published at the reference date. These data have not been affected by possible subsequent restatements due to perimeter changes, IFRS/IAS standards evolution, etc.

Over the reference periods, the following main changes have occurred:

 2012: Latin American chlorovinyls activities (Indupa) presented as discontinued and assets held for sale

• 2013

- European chlorovinyls activities presented as discontinued and assets held for sale
- Acquisition of Chemlogics, consolidated as from November 1

• 2014:

- Application of IFRS 11
- Eco Services activities presented as discontinued and assets held for sale, and divested on December 2

• 2015:

- European chlorovinyls activities contributed to the Inovyn joint venture (50% Solvay, 50% Ineos) on July 1
- Acquisition of 100% of the shares of Cytec Industries Inc. on December 9. Cytec opening balance sheet has been fully consolidated within the Solvay group as from December 31, 2015. Cytec's results and cash flows for the period between December 9 and December 31 are not material, except for acquisition-related expenses presented as portfolio management and reassessment. Consequently, Cytec did not contribute to the Group's profit or cash flows in 2015.

• 2016:

- Divestment of Solvay's share in Inovyn joint venture on July 7
- Acetow and Vinythai businesses presented as discontinued operations and as assets held for sale
- Divestment of Latin American chlorovinyls activities (Indupa) on December 27

• 2017:

- Vinythai transaction completed end of February
- Acetow transaction completed end of May
- Divestment of Polyamide business classified as discontinued operations and assets and liabilities held for sale at the end of September 2017.

2. PREPARATION BACKGROUND

Comparability of results

Following the announcements in December 2016 of the divestment of the Acetow and Vinythai businesses and in September 2017 of plans to divest the Polyamide business, these have been reclassified as discontinued operations and as assets held for sale. For comparative purposes, the full year 2016 income statement has been restated. The Vinythai transaction was completed end of February 2017 and the Acetow transaction end of May 2017.

Reconciliation of underlying Income Statement indicators

Besides IFRS accounts, Solvay also presents underlying Income Statement performance indicators to provide a more consistent and comparable indication of Solvay's economic performance. These figures adjust IFRS figures for the non-cash Purchase Price Allocation (PPA) accounting impacts relating to acquisitions, for the coupons of perpetual hybrid bonds classified as equity under IFRS but treated as debt in the underlying statements, and for other elements to generate a measure that avoids distortion and facilitates the appreciation of performance and comparability of results over time. More information in section 5 of the Business review.

Alternative performance metrics (APM)

Solvay measures its financial performance using alternative performance metrics, which can be found below. Unless otherwise stated, 2016 and 2017 data are presented on a restated basis, after discontinuation of Acetow, Vinythai and Polyamide. Solvay believes that these measurements are useful for analyzing and explaining changes and trends in its historical results of operations, as they allow performance to be compared on a consistent basis.

- Tax rate = Income taxes / (Result before taxes Earnings from associates & joint ventures – Interests & realized foreign exchange results on the RusVinyl joint venture). The reason for the adjustment made to the denominator regarding associates and joint ventures is that these contributions are already net of income taxes.
- Research & Innovation measures the total cash effort in research and innovation, regardless of whether the costs were expensed or capitalized. It consists of research & development costs from the income statement before netting of related subsidies and royalties, and where depreciation and amortization are replaced by related capital expenditure. Research & innovation intensity is the ratio of research & innovation to net sales.

- Free Cash Flow measures cash flow from operating activities, net of investments. It excludes any M&A or financing related activities, but includes elements like dividends from associates and joint ventures, pensions, and restructuring costs. It is defined as cash flow from operating activities (excluding cash flows from expenses incurred in connection with acquisitions of subsidiaries) and cash flow from investing activities (excluding cash flows from or related to acquisitions and disposals of subsidiaries and other investments, and excluding loans to associates and non-consolidated investments, as well as related tax elements and recognition of factored receivables).
- Capital expenditure (capex) is cash paid for the acquisition of tangible and intangible assets.
- Cash conversion is a ratio used to measure the conversion of EBITDA into cash. It is defined as (Underlying EBITDA + Capex from continuing operations) / Underlying EBITDA.
- Net working capital includes inventories, trade receivables and other current receivables, netted with trade payables and other current liabilities.
- (IFRS) net debt = Non-current financial debt + Current financial debt Cash & cash equivalents Other financial instrument receivables. Underlying net debt represents the Solvay share view of debt, reclassifying as debt 100% of the hybrid perpetual bonds, classified as equity under IFRS. Leverage ratio = Net debt / Underlying EBITDA of last 12 months. Underlying leverage ratio = Underlying net debt / Underlying EBITDA of last 12 months.
- Cash Flow Return On Investment measures the cash returns
 of Solvay's business activities. Movements in CFROI levels are
 relevant indicators for showing whether economic value is
 being added, though it is accepted that this measure cannot be
 benchmarked or compared with industry peers. The definition
 uses a reasonable estimate of the replacement cost of assets
 and avoids accounting distortions, e.g. for impairments. It is
 calculated as the ratio between recurring cash flow and
 invested capital, where:
 - Recurring cash flow = Underlying EBITDA + Dividends from associates and joint ventures - Earnings from associates and joint ventures + Recurring capex + Recurring income taxes;
 - Invested capital = Replacement value of goodwill & fixed assets + Net working capital + Carrying amount of associates and joint ventures;
 - recurring capex is normalized at 2% of the replacement value of fixed assets net of goodwill values
 - Recurring income tax is normalized at 30% of (Underlying EBIT – Earnings from associates and joint ventures)

Description of the operational segments

Advanced Materials

As a leader in markets with high entry barriers and strong returns on investment, Advanced Materials offers high-performance materials for multiple applications primarily in the automotive, aerospace, electronics, and health markets. In particular, it provides sustainable mobility solutions, reducing weight and improving CO₂ and energy efficiency.

Specialty Polymers

With over 1,500 products, Specialty Polymers offers the widest range of high performance polymers in the world, allowing tailor-made solutions such as pushing the limits of metal replacement in the electronics, automotive, aircraft, and healthcare industries. The GBU has unparalleled expertise in three technologies: aromatic polymers, high barrier polymers, fluoropolymers.

Composite Materials

Composite Materials is a top-tier supplier to the aerospace engineered materials market known for its expertise in design materials and process engineering to deliver innovative customer solutions that maximize technology capability and simplify manufacturing. We deliver optimal material solutions to address our customer's most challenging demand for new high-performance materials to improve durability and production. Besides the aeronautics sector it also serves applications in wind energy, sports, sailing boats, and notably automotive, where the lightweighting properties create substantial development potential.

Special Chem

Special Chem produces fluor and rare-earth formulations for automotive, semi-conductor, and lighting applications. With its industrial know-how, global presence, and R&I proximity, Special Chem has positioned itself as a strategic partner for the automotive sector as a producer of materials used in emission control catalysis and aluminum brazing, and as a producer of cleaning and polishing materials for electronics.

Silica

Silica focuses on highly dispersible silica, used primarily in fuel-efficient and performance tires. It develops innovative solutions for global tire manufacturers, as well as Silica ranges for many other market segments, such as toothpaste, food, industrial products, and rubber articles.

Advanced formulations

As one of Solvay's growth engines, the Advanced Formulations serves primarily the consumer goods, agro and food, and energy markets. It offers customized specialty formulations that impact surface chemistry and alter liquid behavior to optimize efficiency and yield, while minimizing environmental impact.

Novecare

Novecare develops and produces formulations that alter the properties of liquids. It offers solutions to the oil and gas industry using the world's largest chemicals portfolio. Novecare also provides specialty solutions for certain industrial applications, agricultural, and coatings markets.

Technology Solutions

Technology Solutions is a global leader in specialty mining reagents, phosphine-based chemistry, and solutions for stabilization of polymers. Its portfolio includes world class, leading-edge technologies and unrivalled technical service and applications expertise that support our customers in developing tailor-made solutions, in particular for mining, where Solvay's products allow customers to extract metal concentrates from increasingly more complex and depleted ores.

Aroma Performance

Aroma Performance is the world's largest integrated producer of vanillin for the food and flavors & fragrances industries and for synthetic intermediates used in perfumery, pharmaceuticals, agrochemicals, and electronics.

Performance Chemicals

Performance Chemicals operates in mature and resilient markets and has leading positions in chemical intermediates. Success is based on economies of scale and state-of-the-art production technology. It serves mainly the consumer goods and food markets. As from Q3 2017, Performance Chemicals also encompasses the remaining business activities previously included in the Functional Polymers segment: following the signing of the binding agreement with German chemical company BASF for the sale of its Polyamides business in September, 2017, those polyamide activities, which constituted the major part of Functional Polymers, were reclassified to discontinued operations. Comparative periods have been reworked accordingly: fourth quarter 2016 net sales increased by €22 million and underlying EBITDA by €2 million; full year net sales went up €121 million and underlying EBITDA €23 million.

Soda Ash & Derivatives

Soda Ash & Derivatives is the world's largest producer of soda ash and sodium bicarbonate, sold primarily to the flat and container glass industries but also used in detergents, agro, and food industries. It provides resilient profitability thanks to good pricing, dynamics growing at mid-single digit rate, underpinned by high-quality assets.

Peroxides

Solvay is the market leader in hydrogen peroxide, both in market share and technology. Hydrogen peroxide (H2O2) is used mainly by the paper industry to bleach pulp. Its properties are also of interest to many markets, such as chemicals, food, textiles, and the environment.

Coatis

Coatis is a provider of glycerine-based sustainable solvents solutions and specialty phenols mainly for the Latin American market. It enjoys an undisputed market leadership position in Brazil for Phenol & Derivatives used in the production of synthetic resins employed in foundries, construction, and abrasives.

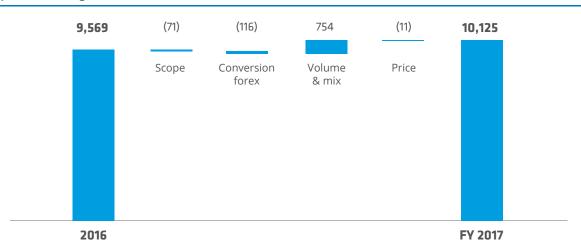
Corporate & Business Services

Corporate & Business Services includes corporate and other business services, such as the Research & Innovation Center. It also incorporates the Energy Services GBU, whose mission is to optimize energy consumption and reduce CO₂ emissions.

3. NOTES TO THE UNDERLYING GROUP FIGURES

NOTE B1 Net sales

Net sales evolution FY yoy net sales bridge (in €million)



Net sales totaled €10,125 million, up 6%, on 8% higher volumes.

- The -1% **scope**^[1] effect reflects the sale of the smaller polyolefin cross-linkable compounds and formulated resins businesses in June 2017.
- Foreign exchange fluctuations had a -1% effect on conversion, mainly from the depreciation of the US dollar, and to a lesser extent from the Chinese renminbi, British pound, and Japanese yen, offset partly by the appreciation of the Brazilian real.
- The 8% volume increase came from all segments. In Advanced Materials, demand for high-performance polymers continued to grow, most notably for automotive and smart devices. Composites sales stabilized year on year, with aerospace composite sales slightly above the prior year offset by weak demand in industrial markets. Advanced Formulations volumes grew strongly, driven by the North American shale oil and gas market recovery. In Performance Chemicals, soda ash volumes were strong throughout the year and the new peroxide HPPO plant started up.

NOTE B2 Underlying raw material & energy costs

Energy costs are an important part of the Group's cost structure.

Net energy costs represented about €0.61 billion in 2017⁽²⁾, circa 11% higher than in 2016. Energy sources were spread over electricity and gas (69%), coke, petcoke, coal, and anthracite (circa 27%), and steam, fuel oil, and others (5%). More than half of the costs were incurred in Europe (53%) followed by the Americas (28%), and Asia and the rest of the world (19%). The Group has pursued an active energy policy for many years. As a major energy consumer, Solvay operates an electricity generation park with a total installed capacity of circa 900 MWe.

^[1] Scope effects include acquisitions and divestments of smaller businesses not leading to the restatement of previous periods.

^[2] The divested Functional Polymers are not included. The energy consumption and expenditure of the polyamide activities that will be sold to BASF are not included in the report, those assets no longer being consolidated in the Group financial report. However, the energy consumption and expenditure of the Performance Polyamides activities located at the Paulinia site in Brazil remain in this report, those activities not being included in the BASF deal.

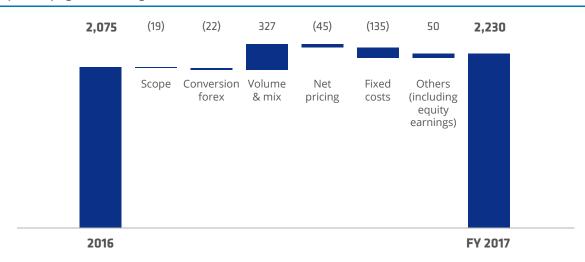
Within the Group, Solvay Energy Services (SES) focuses on optimizing the Solvay's energy costs and fostering greenhouse gas emission reductions. In particular, SES rolls out the SOLWATT® excellence program to identify and deliver energy savings and CO₂ emission reductions at existing manufacturing units, through operational and technological improvements as well as management behavior changes. The first SOLWATT® wave was introduced in 2011 and is now covering nearly all the energy spends of the Group. A second wave was launched in 2016. By end 2017 it had been deployed at most sites with a large energy consumption totaling 41% of the Group energy consumption. New annual savings from actions completed in 2017 are

estimated at €9 million or 1.5% of the Solvay energy costs and 0.1 Mt CO₂ emission reductions. The Soda Ash & Derivatives and Specialty Polymers GBUs are among the top beneficiaries

The overall raw materials spend of the Group amounted to circa €2.5 billion in 2017, 16% higher than in 2016. The raw materials spend can be split into crude oil derivatives (42%), minerals derivatives (22% – e.g. glass fiber, sodium silica, calcium silicate, phosphorus, and sodium hydroxide), natural gas derivatives (9%), biochemicals (12% – e.g. glycerol, guar, fatty alcohol, and ethyl alcohol), others (circa 15%).

NOTE B3 Underlying EBITDA

Underlying ebitda evolution FY yoy underlying EBITDA bridge (in €million)



Underlying EBITDA grew 7% to €2,230 million. Excluding conversion forex and scope effects, it grew 10%, driven by the 16% effect of volume growth, which more than offset the 7% increase in fixed costs and higher raw material and energy costs. The result also reflects a one-time synergy benefit of €38 million in the former Cytec businesses. The underlying **EBITDA margin** was sustained at 22%.

- **Foreign exchange** impacted conversion by -1%, following the depreciation of the US dollar and to a lesser extent the Chinese renminbi in the second half of the year.
- The higher volumes added 16% to EBITDA.
- Fixed costs went up. Although operational excellence and synergy benefits largely compensated for inflation, volume increases and new capacities expanded the cost base. Higher profitability also led to an increase in provisions for variable remuneration.

- **Net pricing** was down and affected EBITDA by -2%, as the increase in raw material and energy prices could only partly be compensated by commercial and operational excellence.
- Other elements added €50 million net to EBITDA and consist mainly of one-time elements, including the €38 million synergy benefit on post-retirement obligations in the former Cytec businesses, as well as a €17 million total indemnity over the year for the loss of some production assets in China.

NOTE B4 Underlying depreciation & amortization

Amortization and depreciation charges were €(704) million in 2017, 5% higher than the €(672) million in 2016; this results from the higher capex level in recent years.

NOTE B5 Underlying net financial charges

In € million		FY 2017	FY 2016
Net cost of borrowings	а	(170)	(224)
Coupons on perpetual hybrid bonds	b	(111)	(111)
Interests and realized foreign exchange gains (losses) on the RusVinyl joint		(2.4)	(26)
venture	<u> </u>	(24)	(26)
Cost of discounting provisions	d	(89)	(103)
Result from available-for-sale financial assets	е	-	_
Net financial charges ⁽¹⁾	f = a+b+c+d+e	(394)	(464)

⁽¹⁾ Underlying net financial charges include the coupons on perpetual hybrid bonds, which are accounted as dividends under IFRS, and thereby excluded from the income statement, as well as the financial charges and realized foreign exchange losses in the RusVinyl joint venture, which under IFRS are part of the earnings from associates & joint ventures and thereby included in the IFRS EBITDA.

Underlying net financial charges totaled €(394) million, 15% lower year on year. Net cost of borrowings fell as gross debt was reduced throughout 2016 and 2017, and as discounting costs on pensions dropped on lower discount rates.

NOTE B6 Underlying income taxes

In € million		FY 2017	FY 2016
Profit for the period before taxes	а	1,133	939
Earnings from associates & joint ventures	b	71	69
Interests and realized foreign exchange gains (losses) on the RusVinyl joint			
venture	C	(24)	(26)
Income taxes	d	(299)	(272)
Tax rate	e = -d/(a-b-c)	27.5%	30.3%

Underlying income taxes were €(299) million, 10% higher than in 2016, though the underlying tax rate was significantly reduced from 30.3% to 27.5%. On an IFRS basis, the tax result is positive due to tax elements relating to prior periods, mainly €202 million recognition of deferred tax assets in France and €49 million net impact triggered by the US tax reform.

NOTE B7 Underlying profit from discontinued operations

Discontinued operations added €159 million to profit on an underlying basis. The decrease versus €240 million in 2016 is explained by the divestment of the Vinythai Asian PVC activity and the Acetow acetate tow business, which were completed mid-2017. The discontinued operations in the second half of the year still contain the Polyamide activity that is planned to be sold to BASF for an enterprise value of €1.6 billion. This divestment is expected to be finalized in the second half of 2018.

NOTE B8 CAPEX

In € million		FY 2017	FY 2016
Acquisition (-) of tangible assets	а	(707)	(883)
Acquisition (-) of intangible assets	b	(115)	(98)
Capex	c = a+p	(822)	(981)
Capex flow from discontinued operations	d	(105)	(141)
Capex from continuing operations	e = c-d	(716)	(839)
Underlying EBITDA	f	2,230	2,075
Cash conversion	g = (f+e)/f	68%	60%

Capex from continuing operations was €(716) million, €123 million lower than in 2016, in line with the planned reduction in capex intensity, raising **cash conversion** from 60% to 68%.

NOTE B9 Free Cash Flow

In € million		FY 2017	FY 2016
Cash flow from operating activities	а	1,604	1,788
of which cash flow related to acquisition of subsidiaries	b	(23)	7
Cash flow from investing activities	С	70	(807)
of which capital expenditures required by share sale agreement	d	(12)	_
Acquisition (-) of subsidiaries	e	(44)	(23)
Acquisition (-) of investments – Other	f	(11)	4
Loans to associates and non-consolidated companies	g	(7)	(25)
Sale (+) of subsidiaries and investments	h	891	144
Income taxes paid on sale of investments	i	(14)	_
Recognition of factored receivables	j	21	_
Free cash flow	k = a-b+c-d-e-f-g-h-i-j	871	876
Free cash flow from discontinued operations	1	89	218
Free cash flow from continuing operations	m = k-l	782	658

Free cash flow from continuing operations was €782 million, a 19% increase versus 2016. This reflects higher EBITDA and the focus on capital discipline. Including discontinued operations, total free cash flow was €871 million.

NOTE B10 Net working capital

			2017			
In € million		December 31	September 30	June 30	March 31	December 31
Inventories	а	1,504	1,507	1,732	1,747	1,672
Trade receivables	b	1,462	1,505	1,719	1,781	1,621
Other current receivables	С	627	693	671	705	736
Trade payables	d	(1,330)	(1,206)	(1,475)	(1,563)	(1,547)
Other current liabilities	е	(848)	(882)	(804)	(1,078)	(1,085)
Net working capital	f = a+b+c+d+e	1,414	1,617	1,843	1,592	1,396
Sales ⁽¹⁾	g	2,765	2,609	3,188	3,159	2,933
Annualized quarterly total sales ⁽¹⁾	h = 4*g	11,060	10,436	12,753	12,638	11,731
Net working capital/sales ⁽¹⁾	i = f / h	12.8%	15.5%	14.5%	12.6%	11.9%
Year average	$j = \mu(Q1,Q2,Q3,Q4)$	13.8%				15.3%

⁽¹⁾ The scope covered by sales corresponds with the scope of the net working capital, i.e. including Polyamide for June 30, 2017, March 31, 2017 and December 31, 2016.

Working capital outflow from continuing operations was €(160) million, of which €(140) million industrial working capital, in line with higher sales. The average working capital to sales ratio over the quarters thereby reached 13.8%, 1.5 percentage points better than the 15.3% in 2016, when the receivable on the Inovyn transaction weighed on the balance sheet.

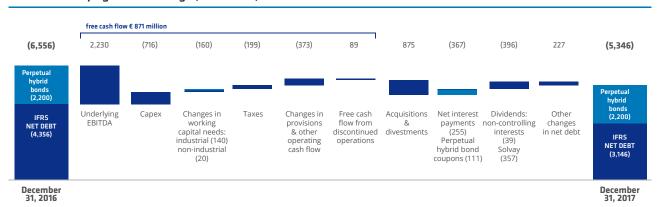
Excluding the reclassification of Polyamides as held for sale, inventories increased in 2017 essentially to support the growing demand in high-performance polymers in automotive and smart device, fueled by new capacities, and also to provide a high level of service to customers in the context of the shale oil and gas market recovery in North America.

NOTE B11 Underlying net debt

			2017			2016
In € million		December 31	September 30	June 30	March 31	December 31
Non-current financial debt	а	(3,182)	(3,190)	(3,512)	(4,039)	(4,087)
Current financial debt	b	(1,044)	(2,004)	(1,820)	(1,322)	(1,338)
Gross debt	c = a+b	(4,226)	(5,194)	(5,332)	(5,361)	(5,426)
Other financial instrument receivables	d	89	498	637	99	101
Cash & cash equivalents	е	992	1,358	1,156	1,094	969
Total cash and cash equivalents	f = d+e	1,080	1,856	1,792	1,193	1,070
IFRS net debt	g = c+f	(3,146)	(3,338)	(3,540)	(4,168)	(4,356)
Perpetual hybrid bonds	h	(2,200)	(2,200)	(2,200)	(2,200)	(2,200)
Underlying net debt	i = g+h	(5,346)	(5,538)	(5,740)	(6,368)	(6,556)
Underlying EBITDA (last 12 months) ⁽¹⁾	j	2,230	2,217	2,455	2,348	2,283
Adjustment for discontinued operations ⁽²⁾	k	236	235	_	158	236
Adjusted underlying EBITDA for leverage calculation ⁽²⁾	l = j+k	2,466	2,453	2,455	2,506	2,519
Underlying leverage ratio ⁽²⁾	m = -i/l	2.2	2.3	2.3	2.5	2.6

⁽¹⁾ The scope covered by underlying EBITDA corresponds with the scope of the net debt, i.e. including Polyamide for June 30, 2017, March 31, 2017 and December 31, 2016.

FY 2017 underlying net debt bridge (in €million)



Underlying net $debt^{[3]}$ fell to \in (5,346) million from \in (6,556) million at the start of the year, an improvement of \in 1,210 million. Strong free cash flow generation and the divestment proceeds resulting from the strategic portfolio transformation reduced the gross debt position by \in 1,200 million, through the redemption of bonds at maturity and the repurchase operation in early October.

The financing structure optimization improved the underlying leverage ratio from 2.6x at the start of the year to 2.2x, both on an adjusted basis^[4].

⁽²⁾ As net debt at the end of the period does not yet reflect the net proceeds to be received on the divestment of discontinued operations, whereas the underlying EBITDA excludes the contribution of discontinued operations, the underlying EBITDA is adjusted for the purpose of calculating the leverage ratio. For September 2017 the underlying EBITDA of Polyamide was added, for March 2017 the Acetow one, and for December 2016 the Acetow and Vinythai ones.

⁽³⁾ Underlying net debt includes the perpetual hybrid bonds, treated as equity under IFRS. Underlying net financial charges include the coupons on perpetual hybrid bonds, which are accounted as dividends under IFRS and thereby excluded from the P&L, as well as the financial charges and realized foreign exchange losses in the RusVinyl joint venture, which under IFRS are part of the earnings from associates & joint ventures and thereby included in the IFRS EBITDA.

^[4] EBITDA of the discontinued Polyamide business was added to the denominator, as the proceeds to be received on completion do not yet reduce the net debt in the numerator.

NOTE B12 CFROI

			FY 2017			FY 2016 ⁽¹⁾	
In € million		As publi- shed	Adjust- ment	As calcu- lated	As publi- shed	Adjustment	As calcu- lated
Underlying EBIT	а	1,527		1,527	1,534		1,534
Underlying EBITDA	b	2,230		2,230	2,284		2,284
Earnings from associates & joint ventures	С	71		71	69		69
Dividends received from associates & joint ventures ⁽²⁾	d	18	_	18	22	_	22
Recurring capex ⁽³⁾	e = -2%*I			(326)			(363)
Recurring income taxes ⁽⁴⁾	f = -30%*(a-c)			(437)			(439)
Recurring "CFROI" cash flow data	g = b-c+d+e+f			1,415			1,434
Tangible assets	h	5,433			6,472		
Intangible assets	i	2,940			3,600		
Goodwill	j	5,042			5,679		
Replacement value of goodwill & fixed assets ⁽⁵⁾⁽⁶⁾	k = h+i+j	13,415	5,093	18,508	15,751	4,669	20,420
of which fixed assets	1			16,314			18,134
Investments in associates & joint ventures ⁽⁵⁾	m	466	16	482	497	(52)	445
Net working capital ⁽⁵⁾	n	1,414	111	1,525	1,396	355	1,751
CFROI invested capital	o = k+m+n			20,515			22,615
CFROI	p = g/o			6.9%			6.3%

- (1) Reference figures are provided on a non-restated basis.
- (2) Excluding discontinued operations.
- (3) Currently estimated at 2% of replacement value of fixed assets.
- (4) Currently estimated at 30% of underlying EBIT.
- (5) The adjustment reflects the quarterly average over the year.
- (6) The adjustment reflects the difference between the estimated replacement value of goodwill and fixed assets, and the accounting value. The changes over time come from foreign exchange variations, new investments and portfolio moves.

CFROI rose to 6.9%, the same level as prior to the Cytec acquisition, and is now in the value-creation zone. The 0.6 percentage point increase on the figure of 6.3% on a non-restated basis in 2016 reflected both volume growth and maintained capital discipline.

NOTE B13 Research & Innovation

In € million		FY 2017	FY 2016 ⁽¹⁾
IFRS research & development costs	а	(290)	(305)
Grants netted in research & development costs	b	26	33
Depreciation, amortization & impairments included in research & development costs	С	(55)	(54)
Capex in research & innovation	d	(64)	(66)
Research & innovation	e = a-b-c+d	(325)	(350)
Net sales	f	10,125	10,884
Research & innovation intensity	g = -e/f	3.2%	3.2%

(1) Reference figures are provided on a non-restated basis.

Research & Innovation efforts in 2017 were €(325) million. The global expenditure analysis clearly underlines that innovation projects are widely focused on growth globally.

Some 83% of the Group's R&I investments are directly managed by GBUs.

The R&I intensity – the ratio of research and innovation efforts on net sales – reached 3.2%.

4. NOTES TO THE UNDERLYING FIGURES PER SEGMENT

Segment overview

in € million	2017	2016	% yoy
Net sales	10,125	9,569	5.8%
Advanced Materials	4,370	4,313	1.3%
Advanced Formulations	2,966	2,668	11%
Performance Chemicals	2,766	2,581	7.2%
Corporate & Business Services	23	7	n.m.
EBITDA	2,230	2,075	7.5%
Advanced Materials	1,202	1,110	8.2%
Advanced Formulations	524	484	8.1%
Performance Chemicals	749	718	4.3%
Corporate & Business Services	(244)	(237)	(2.8)%
EBIT	1,527	1,403	8.8%
Advanced Materials	896	829	8.1%
Advanced Formulations	374	327	14%
Performance Chemicals	566	549	3.0%
Corporate & Business Services	(308)	(301)	(2.4)%
Capex from continuing operations	(716)	(839)	15%
Advanced Materials	(366)	(435)	16%
Advanced Formulations	(130)	(134)	3.0%
Performance Chemicals	(152)	(191)	20%
Corporate & Business Services	(68)	(79)	14%
Research & innovation ⁽¹⁾	(325)	(350)	(7.0)%
Advanced Materials	(157)	(155)	(1.5)%
Advanced Formulations	(85)	(87)	2.1%
Performance Chemicals	(29)	(26)	(10)%
Corporate & Business Services	(55)	(52)	(4.5)%

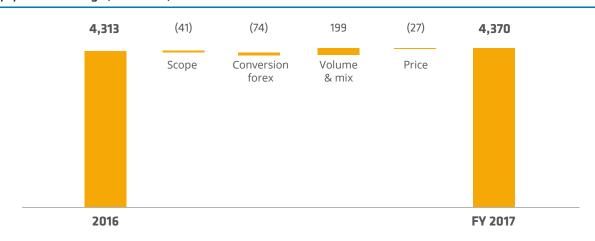
⁽¹⁾ CFROI (Cash Flow Return On Investment) and Research & Innovation reference figures are provided on a non-restated basis.

NOTE B14 Advanced Materials

in € million	2017	2016	% yoy
Net sales	4,370	4,313	1.3%
Specialty Polymers	2,025	1,922	5.3%
Composite Materials	1,038	1,073	(3.3)%
Special Chem	865	862	0.3%
Silica	443	455	(2.7)%
EBITDA	1,202	1,110	8.2%
EBITDA margin	27%	26%	1.8pp
EBIT	896	829	8.1%
EBIT margin	21%	19%	1.3pp
CFROI ⁽¹⁾	10%	9.4%	0.8рр
Capex from continuing operations	(366)	(435)	16%
Cash conversion	70%	61%	8.7pp
Research & innovation ⁽¹⁾	(157)	(155)	(1.5)%
Research & innovation intensity ⁽¹⁾	3.6%	3.6%	-

⁽¹⁾ CFROI (Cash Flow Return On Investment) and Research & Innovation reference figures are provided on a non-restated basis.

Net sales evolution FY yoy net sales bridge (in €million)



Net sales were €4,370 million, an increase of 1%, reflecting 5% volume growth and offsetting the adverse forex effect on conversion, reduced scope, and slightly lower prices. The bulk of the growth was delivered by **Specialty Polymers**, with volumes growing at a high single-digit rate, chiefly underpinned by increased demand from the automotive sector, including batteries for the surging electric vehicle market. Sales to the smart device market recovered well from the inventory destocking in the first half of 2016. **Composite Materials** sales volumes were overall stable in the year, with a small increase

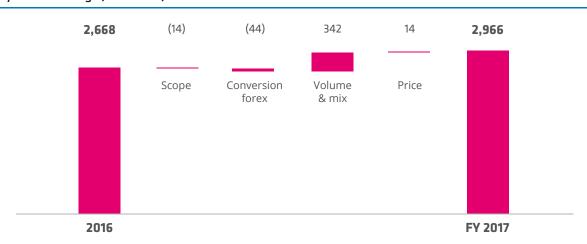
in aeronautics offset by a decrease in industrial applications. The ramp-up of the F-35 and growth in new types of single-aisles, equipped with LEAP engine, more than compensated for the declining wide-body volumes in the period. **Special Chem** sales benefited from pricing and higher volumes, triggered by robust demand from the insulation and electronics sector, the latter supported by recent capacity expansions. In **Silica**, volume growth in the energy-efficient tire market in Europe and Asia could not fully compensate for the negative price developments.

NOTE B15 Advanced Formulations

in € million	2017	2016	% yoy
Net sales	2,966	2,668	11%
Novecare	1,937	1,663	16%
Technology Solutions	662	656	1.0%
Aroma Performance	366	350	4.7%
EBITDA	524	484	8.1%
EBITDA margin	18%	18%	(0.5)pp
EBIT	374	327	14%
EBIT margin	21%	19%	0.4рр
CFROI ⁽¹⁾	6.7%	6.1%	0.7pp
Capex from continuing operations	(130)	(134)	3.0%
Cash conversion	75%	72%	2.8pp
Research & innovation ⁽¹⁾	(85)	(87)	2.1%
Research & innovation intensity ⁽¹⁾	2.9%	3.2%	(0.4)pp

⁽¹⁾ CFROI (Cash Flow Return On Investment) and Research & Innovation reference figures are provided on a non-restated basis.

Net sales evolution FY yoy net sales bridge (in €million)



Net sales rose 11% to €2,966 million, thanks to volume growth of 13%, which forex effects on conversion eroded by -2%. The 16% sales surge in **Novecare** was triggered by the recovery of the North American shale oil and gas market and a gradual improvement in the product mix throughout the year. This was supplemented by moderate demand growth in agro, coatings, and industrial applications. Sales in **Technology Solutions** were up slightly, tempered by the scope decrease following the sale

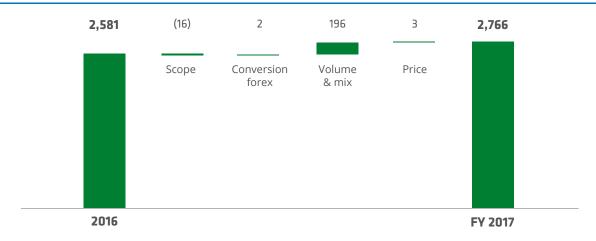
of the formulated resins business in June 2017. While volumes of sales to the mining sector were mostly stable over the year, demand rose significantly for phosphine specialties as underlying demand was offset by production issues at customers' mines. **Aroma Performance** sales grew 5%, with the new vanillin plant in China ramping up, but competitive price pressure continued in the region.

NOTE B16 Performance Chemicals

in € million	2017	2016	% yoy
Net sales	2,766	2,581	7.2%
Soda Ash & Derivatives	1,629	1,561	4.4%
Peroxides	600	542	11%
Coatis	410	346	18%
Functional Polymers	126	131	(3.8)%
EBITDA	749	718	4.3%
EBITDA margin	27%	28%	(0.7)pp
EBIT	566	549	3.0%
EBIT margin	21%	19%	(0.8)pp
CFROI ⁽¹⁾	8.4%	8.9%	(0.5)pp
Capex from continuing operations	(152)	(191)	20%
Cash conversion	80%	73%	6.3pp
Research & innovation ⁽¹⁾	(29)	(26)	(10)%
Research & innovation intensity ⁽¹⁾	1.0%	1.1%	-

⁽¹⁾ CFROI (Cash Flow Return On Investment) and Research & Innovation reference figures are provided on a non-restated basis.

Net sales evolution FY yoy net sales bridge (in €million)



Net sales grew 7% to €2,766 million on the back of higher volumes. In **Soda Ash & Derivatives**, sales increased by 4% thanks to higher soda ash volumes for the seaborne market, and despite slightly lower prices. Bicarbonate sales growth was even stronger, at a high single-digit, supported by the ramp-up of the new plant in Thailand in the first part of the year. **Peroxides** sales were up 11%, as the supply contract for the new HPPO plant in Saudi Arabia took effect at the start of the year and the new Chinese plant ramped up, offsetting lower sales in the bulk

market and specialties. **Coatis** sales grew 18%, thanks mainly to a price increase policy and modest volume growth, showing signs of recovery in the domestic Latin American market. This was also the case for the retained polyamide activities in Latin America, which are part of the **Functional Polymers** business unit. The sales decrease is linked to the sale of a smaller residual PVC compounding activity in September 2017.

NOTE B17 Corporate & Business Services

in € million	2017	2016	% yoy
Net sales	23	7	n.m.
Energy Services	-	4	n.m.
Other Corporate & Business Services	23	3	n.m.
EBITDA	(244)	(237)	(2.8)%
EBIT	(308)	(301)	(2.4)%
Capex from continuing operations	(68)	(79)	14%
Research & innovation ⁽¹⁾	(55)	(52)	(4.5)%

⁽¹⁾ Research & Innovation reference figures are provided on a non-restated basis.

FY 2017 underlying EBITDA costs were €(244) million, 3% more than in 2016. **Energy Services'** EBITDA was €21 million, compared to €4 million in 2016. The improvement largely reflects the business restructuring in 2016 focused on renewable energy projects, and market opportunities it captured in the third quarter. Costs in **Other Corporate & Business Services** were €(264) million, €(23) million higher than in 2016, reflecting ongoing cost discipline offsetting inflation, whereas higher project costs and orphan costs relating to portfolio changes increased expenses.

5. RECONCILIATION OF UNDERLYING AND IFRS FIGURES

Besides IFRS accounts, Solvay also presents underlying Income Statement performance indicators to provide a more consistent and comparable indication of Solvay's economic performance. These figures adjust IFRS figures for the non-cash Purchase Price Allocation (PPA) accounting impacts relating to acquisitions, for the coupons of perpetual hybrid bonds classified as equity under IFRS but treated as debt in the underlying statements, and for other elements to generate a measure that avoids distortion and facilitates the appreciation of performance and comparability of results over time.

FY consolidated income statement

		FY 2017			FY 2016		
			Adjust-	Under-		Adjust-	
In € million	Notes	IFRS	ments	lying	IFRS	ments	Underlying
Sales		10,891	_	10,891	10,045		10,045
of which revenues from non-core activities		766	-	766	476		476
of which net sales		10,125	-	10,125	9,569		9,569
Cost of goods sold	B18 B19	(7,805)	2	(7,803)	(7,213)	84	(7,129)
Gross margin		3,086	2	3,088	2,831	84	2,915
Commercial & administrative costs	B18 B19	(1,437)	42	(1,396)	(1,363)	50	(1,313)
Research & development costs	B19	(290)	3	(288)	(284)	3	(282)
Other operating gains & losses	B19	(154)	205	51	(200)	214	14
Earnings from associates & joint ventures	B18	44	27	71	85	(16)	69
Result from portfolio management & reassessments	B18 B19	(188)	188	_	(157)	157	
Result from legacy remediation & major litigations	B18	(84)	84	_	(54)	54	_
EBITDA	B18	2,029	201	2,230	1,932	143	2,075
Depreciation, amortization & impairments	B19	(1,054)	350	(704)	(1,074)	402	(672)
EBIT	B19	976	551	1,527	858	545	1,403
Net financial charges	B20	(298)	(96)	(394)	(334)	(130)	(464)
Net cost of borrowings	B20	(201)	32	(170)	(224)	_	(224)
Coupons on perpetual hybrid bonds	B20		(111)	(111)		(111)	(111)
Interests and realized foreign exchange gains (losses) on the RusVinyl joint venture	B20		(24)	(24)	_	(26)	(26)
Cost of discounting provisions	B20	(97)	8	(89)	(115)	12	(103)
Result from available-for-sale financial assets		_	_	_	5	(5)	
Profit for the period before taxes		678	455	1,133	524	415	939
Income taxes	B21	197	(496)	(299)	68	(340)	(272)
Profit for the period from continuing operations		875	(42)	834	592	75	667
Profit (loss) for the period from discontinued							
operations	B22	241	(82)	159	82	158	240
Profit for the period	B23	1,116	(124)	992	674	233	907
attributable to Solvay share	B23	1,061	(122)	939	621	225	846
attributable to non-controlling interests	B23	56	(2)	54	53	7	61
Basic earnings per share (in €)		10.27		9.08	6.01		8.19
of which from continuing operations		7.97		7.59	5.34		6.02
Diluted earnings per share (in €)		10.19		9.02	5.99		8.17
of which from continuing operations		7.92		7.53	5.33		6.01

NOTE B18 IFRS EBITDA

EBITDA on an IFRS basis totaled €2,029 million, versus €2,230 million on an underlying basis. The difference of €201 million is explained by the following adjustments to IFRS results, the purpose of which is to improve the comparability of underlying results:

- €2 million for legacy acquisition costs, in this case the Chemlogics retention premiums, which are adjusted in "Commercial & administrative costs".
- €27 million in "Earnings from associates & joint ventures" for Solvay's share in the financial charges of the Rusvinyl joint venture and the foreign exchange losses on the €-denominated debt of the joint venture, following the devaluation of the Russian ruble over the year. These elements are reclassified in "Net financial charges".
- €88 million to adjust for the "Result from portfolio management and reassessments", excluding depreciation, amortization, and impairment elements. This result comprises €(48) million of restructuring costs and the €(72) million impact from the deconsolidation of the Venezuelan silica plant, of which €(60) million came from recycling currency translation adjustments through the P&L. These impacts were mitigated by €32 million net capital gains on multiple smaller divestments.
- €84 million to adjust for the "Result from legacy remediation and major litigations", mainly on environmental expenses.

NOTE B19 IFRS EBIT

EBIT on an IFRS basis totaled €976 million, versus €1,527 million on an underlying basis. The difference of €551 million is explained by the above-mentioned €201 million adjustments at the EBITDA level and €350 million of "Depreciation, amortization & impairments". The latter consist of:

- €250 million to adjust for the non-cash impact of purchase price allocation (PPA), consisting of amortization charges on intangible assets, which are adjusted in "Cost of goods sold" for €2 million, "Commercial & administrative costs" for €40 million, in "Research & development costs" for €3 million, and in "Other operating gains & losses" for €205 million.
- €100 million to adjust for the net impact of impairments, which are non-cash in nature and are reported in "Result from portfolio management and reassessments", of which €(91) million is related to the retained polyamide assets in Latin America.

NOTE B20 IFRS Net financial charges

Net financial charges on an IFRS basis were €(298) million versus €(394) million on an underlying basis. The €(96) million adjustment made to IFRS net financial charges consists of:

- €32 million on net cost of borrowings, relating mainly to a onetime net debt management cost, i.e. the tender offer on senior bonds in early October.
- €(111) million reclassification of coupons on perpetual hybrid bonds, which are treated as dividends under IFRS, and as financial charges in underlying results.
- €(24) million reclassification of financial charges and realized foreign exchange result on the €-denominated debt of RusVinyl as net financial charges. The €3 million delta with the adjustment made to EBITDA is attributed to unrealized foreign exchange losses.
- €8 million for the net impact of decreasing discount rates on the valuation of environmental liabilities in the period.

NOTE B21 IFRS Income taxes

Income taxes on an IFRS basis were €197 million positive, versus charges of €(299) million on an underlying basis. The €(496) million adjustment includes mainly:

- €(168) million to adjust for the tax impacts of the adjustments made to the underlying result before taxes (as described above).
- €(328) million to adjust for tax elements related to prior periods, of which €202 million resulting from the recognition of deferred tax assets in France and €49 million net impact triggered by the US tax reform.

NOTE B22 IFRS Profit from discontinued operations

Discontinued operations generated a profit of €241 million on an IFRS basis and €159 million on an underlying basis. The €(82) million adjustment made to the IFRS profit relates principally to:

- €204 million capital gain on the divestment of Acetow and Vinythai.
- €(46) million expenses related to the divestment of the polyamide activities.
- €(36) million costs related to post-closing adjustments on the pharma divestment in 2010.

NOTE B23 IFRS Profit for period

Profit attributable to Solvay share was €1,061 million on an IFRS basis and €939 million on an underlying basis. The delta of €(122) million reflects the above-mentioned adjustments to EBIT, net

financial charges, income taxes, and discontinued operations, totaling €(124) million, minus the impact of €(2) million these had on the profit attributable to non-controlling interests.

6. NOTES TO THE FIGURES PER SHARE

Historical key share data

		2013	2014	2015 ⁽¹⁾	2016	2017
Number of shares (in 1000 shares)						
Issued shares at end of year	a	84,701	84,701	105,876	105,876	105,876
Treasury shares at end of year	b	1,530	1,719	2,106	2,652	2,358
Shares held by Solvac	С	25,559	25,578	32,116	32,511	32,511
Outstanding shares at the end of the year	d = a-b	83,171	82,982	103,770	103,225	103,519
Average outstanding shares (basic calculation)	е	83,151	83,228	83,738	103,294	103,352
Average outstanding shares (diluted calculation)	f	83,843	83,890	84,303	103,609	104,084
Data per share (in €)						
Equity attributable to Solvay share	g =/d ⁽²⁾	70.71	64.71	69.72	72.83	71.98
Underlying profit for the period (basic)	h =/e ⁽²⁾				8.19	9.08
IFRS profit for the period (basic)	i =/e ⁽²⁾	3.25	0.96	4.85	6.01	10.27
IFRS profit for the period (diluted)	j =/f ⁽²⁾	3.22	0.96	4.81	5.99	10.19
Gross dividend ⁽³⁾	k	3.20	3.40	3.30	3.45	3.60
Net dividend ⁽³⁾	$I = k*(1\%)^{(4)}$	2.40	2.55	2.41	2.42	2.52
Share price data (in €)						
Highest ⁽⁵⁾	m	121.05	129.15	141.10	112.30	132.00
Lowest ⁽⁵⁾	n	97.20	100.15	88.01	70.52	106.30
Average ⁽⁵⁾	o = v/u	109.42	114.35	105.74	89.32	118.69
At the end of the year	p	115.00	112.40	98.43	111.35	115.90
Underlying price/earnings	q = p/h				13.6	12.8
IFRS price/earnings	r = p/i	35.4	116.6	20.3	18.5	11.3
Gross dividend yield	s = k/p	2.8%	3.0%	3.4%	3.1%	3.1%
Net dividend yield	t = I/p	2.1%	2.3%	2.4%	2.2%	2.2%
Stock market data ⁽⁶⁾						
Annual volume (in 1000 shares)	u	53,643	48,600	82,718	86,280	62,642
Annual volume (in € m)	V	5,870	5,557	9,218	7,707	7,435
Market capitalisation, end of year (in € bn)	w = p*d	9,741	9,520	10,421	11,789	11,975
Velocity	x = u/a	63%	57%	78%	81%	59%
Velocity adjusted for free float	y = u/(a-b-c)	93%	85%	115%	122%	88%

^{(1) 2015} data are not presented on pro forma basis, i.e. exclude Cytec.

⁽²⁾ The numerator can be found under the same label in the historic key financial data table in section 1 of the Business review.

⁽³⁾ Recommended 2017 dividend, pending General Shareholders meeting on May 8, 2018.

⁽⁴⁾ Belgian withholding tax applicable in year of dividend payment, i.e. the following year: 25% in 2013-2015, 27% in 2016, 30% from 2017 onward.

⁽⁵⁾ The 2015 share price data use the share price adjusted by a factor 93.98% for the period until December 3, 2015. The adjustment reflects the distribution of rights during the capital increase completed in December 2015.

⁽⁶⁾ The stock market data are based on all trades registered by Euronext.

NOTE B24 Earnings per share

		FY 2017	FY 2016	% yoy
Profit attributable to Solvay share (in € m)				
Underlying profit for the period	а	939	846	11%
Underlying profit from continuing operations	b	784	622	26%
IFRS profit for the period	С	1,061	621	71%
IFRS profit from continuing operations	d	824	552	49%
Number of shares (in 1000 shares)				
Issued shares at end of year	е	105,876	105,876	_
Treasury shares at end of year	f	2,358	2,652	(11)%
Outstanding shares at the end of the year	g = e-f	103,519	103,225	0.3%
Average outstanding shares (basic calculation)	h	103,352	103,294	0.1%
Average outstanding shares (diluted calculation)	i	104,084	103,609	0.5%
Data per share (in €)				
Underlying profit for the period (basic)	j = a/h	9.08	8.19	11%
Underlying profit from continuing operations (basic)	k = b/h	7.59	6.02	26%
IFRS profit for the period (basic)	I = c/h	10.27	6.01	71%
IFRS profit from continuing operations (basic)	m = d/h	7.97	5.34	49%
IFRS profit for the period (diluted)	p = c/i	10.19	5.99	70%
IFRS profit from continuing operations (diluted)	q = d/i	7.92	5.33	49%

Earnings per share^[6] on an IFRS basis were €10.27, versus €6.01 in 2016. On an underlying basis it reached €7.59 from continuing operations, a 26% increase, driven by a 9% increase in EBIT, a reduction of financial charges and a positive effect from the decrease in underlying tax rate.

NOTE B25 Dividend

The Board of Directors decided to recommend to the General Shareholders' Meeting of May 8, 2018 the payment of a total gross dividend of \leq 3,60 per share (\leq 2,52 net per share).

The dividend for the fiscal year 2017, 4.3% higher than the dividend for the fiscal year 2016, is in line with the Group's dividend policy of maintaining a stable to increasing dividend whenever possible and, as far as possible, never reducing it.

Given the interim dividend of €1,38 gross per share, (€0,96 net per share) with 30 whithholding tax, paid on January 18, 2018, the balance of the dividend in respect of 2017, equals €2,22 gross per share (€1,55 net per share), which will be paid on May 23, 2018, provided prior agreement by General Shareholders Meeting.

7. OUTLOOK 2018

Ebitda

At constant scope and relative to average 2017 forex levels, Solvay expects full year underlying EBITDA to grow 5% to 7% organically.

Advanced Materials to grow by double-digits:

- Volume growth driven by the use of high-performance polymers in the automotive market, use of polymers in EV batteries and other electronic devices, and growing applications in the healthcare market.
- Aerospace programs utilizing Solvay composites, including aircraft powered by the LEAP engine and the F-35 jet used in military will support additional growth in the segment, along with reaching stability in the industrial composites markets after two years of decline.
- Excellence initiatives across all businesses will further support profit growth in the segment.

^[6] Earnings per share, basic calculation.

Advanced Formulations to grow at a high single-digit rate:

- Increased metal prices should stimulate mining production and therefore higher demand for technology solutions.
- Modest improvement in oil and gas against a strong recovery in 2017, complemented by profit growth in home & personal care, and coatings markets, and supported by positive pricing power.

Performance Chemicals profitability to decrease by around €(50) million:

- Additional capacity in the soda ash market has been well
 anticipated and volumes are largely locked in for the year,
 albeit at modestly lower prices. Current higher energy costs
 are expected to compress margins, partly compensated by
 operational excellence.
- Modest growth in peroxides, throughout businesses.

Corporate & Business Services are expected to remain generally flat, reflecting continued cost discipline.

In the second quarter of 2018 additional one-time synergy benefits of approximately €20 million are expected to be generated on post-retirement obligations in the former Cytec businesses. These compare to the €38 million synergy benefits generated in the second quarter of 2017.

Notwithstanding the above underlying organic EBITDA growth of 5 to 7%, 2018 begins with headwinds from foreign currency. Assuming current exchange rates prevail for the full year, and in particular the US dollar at US\$/€1.25, the underlying EBITDA will be materially impacted by conversion effects of around €(125) million.

Small realized divestments in Specialty Polymers and Technology Solutions in June 2017 and February 2018 will account for some €(30) million scope effects.

Other P&L elements

Underlying depreciation & amortization charges are expected to remain in line with the €(704) million in 2017, and exclude PPA amortization charges of approximately €(240) million.

Underlying net financial charges are expected to be about €(350) million:

- Underlying **net cost of borrowings** of around €(150) million, including Rusvinyl, a €50 million reduction resulting from the gross debt optimization
- Stable coupons on perpetual **hybrid bonds** of €(112) million

Non-cash underlying discounting costs of approximately
 €(80) million, slightly lower due to the decrease in discount
 rates.

The underlying income tax rate is expected to decline further to around 26% from 27.5% in 2017, reflecting in large part the favorable impact of the tax reform in the US.

Cash flow

Including the above-mentioned scope and forex elements, free cash flow from continuing operations is expected to exceed the 2017 level of €782 million.

Capex from continuing operations is expected to reduce further to depreciation level, i.e. approximately €(700) million.

The total net cash-out for provisions is expected to increase to some €(390) million, and includes:

- Higher **pensions** and related payments of €(235)million
- **Environmental** provision payments stable at €(80) million
- Higher restructuring payments account for approximately
 €(80) million. Opportunities to accelerate restructurings and
 create additional value may impact annual spend levels but are
 not likely to impact the overall cash generation profile.

Net cash financing payments will reduce by more than €100 million to approximately €(250) million. The reduction is due to the gross debt optimization and the 2017 comparison base, which included one-time costs, such as €(25) million on the repurchase of senior bonds and the unwinding of currency swaps on intercompany financing.

With sustained free cash flow generation and proceeds of approximately $\[\in \]$ 1.1 billion to be received on the completion of the Polyamide divestment to BASF, underlying net debt is expected to further reduce from $\[\in \]$ 5.3) billion to $\[\in \]$ 4.1) billion, bringing the underlying leverage ratio down from 2.2x to 1.9x.

Forex sensitivities

Solvay is exposed predominantly to the US dollar, with the main sensitivities per US\$/€0.10 change:

- **EBITDA sensitivity** of about €(120) million based on the average rate in 2017 of US\$/€1.13, with some 2/3 on conversion and 1/3 on transaction, the latter being mostly hedged.
- **Net debt sensitivity** of about €140 m based on the rate at the end of 2017 of US\$/€1.20.

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EXTRA-FINANCIAL STATEMENTS

This chapter supplements the information provided in the "Understanding Solvay" section, with a focus on highly material aspects.

1. OVERVIEW OF THE CONSOLIDATED RESULTS

1.1. Priority aspects

		Units	Trends	2017	2016	2015	2014	2013
	Sustainable business solutions							
// 2017	Product portfolio assessed	%	2	88	84	88		-
J I ₂₀₁₇	Solutions	%	2	49	43	33		-
	Neutral	%		31	33	39		-
	Challenges	%	•	8	8	16		_
	Not evaluated	%	<u> </u>	12	16	12		
	Greenhouse gas emissions							
4 1 ₂₀₁₇	Greenhouse gas intensity	Kg CO ₂ eq. per € EBITDA	<u> </u>	5.53	5.86	7.26	8.08	8.84
J 2017	Direct and indirect CO ₂ emissions (Scope 1 and 2)	Mt CO ₂	2	10.0	10.9	11.6	11.7	12.0
J 2017	Other greenhouse gas emissions according to Kyoto Protocol (Scope 1)	Mt CO ₂ eq.	2	2.31	2.45	2.61		-
√ 2017	Total greenhouse gas emissions according to Kyoto Protocol (Scopes 1 and 2)	Mt CO ₂ eq.	2	12.3	13.4	14.2	14.4	14.7
J ₂₀₁₇	Other greenhouse gas emissions not according to Kyoto Protocol (Scope 1)	Mt CO ₂ eq.	•	0.1	0.1	0.1	0.1	0.1
	Carbon dioxide – CO ₂ (Scope 1)	Mt CO ₂ eq.		7.92	8.43	8.76		
	Total direct greenhouse gas emissions (Scope 1)	Mt CO ₂ eq.		10.2	10.9	11.4		
	Total indirect greenhouse gas emissions – Gross market-based (Scope 2)	Mt CO ₂ .	2	2.1	2.5	2.8		
	Total indirect greenhouse gas emissions – Gross location-based (Scope 2)	Mt CO ₂ .		2.1	2.3	3.0		-
	Fuel and energy-related activities	Mt CO ₂ .		0.7	0.8	0.8		
	Investments	Mt CO ₂ .	a	1.7	0.8	2.5		
	Purchased goods and services	Mt CO ₂ .	2	6.6	7.2	7.6		_
	Employee health and safety							
4 2017	Fatal accidents of Solvay employees and contractors	Number	ə	1	1	0	2	2
J ₂₀₁₇	Medical Treatment Accident Rate for Solvay employees and contractors (MTAR)	Accident per million hours worked	S	0.65	0.77	0.77	0.97	1.06
	Medical Treatment Accident Rate for Solvay employees (MTAR)	Accident per million hours worked		0.63	0.73	0.69	0.82	0.96
	Medical Treatment Accident Rate for Contractors (MTAR)	Accident per million hours worked	2	0.70	0.86	0.94	1.25	1.26
11/2017	Lost Time Accident Rate for Solvay employees and contractors (LTAR)	Accident per million hours worked	2	0.65	0.76	0.75	0.98	0.80
	Lost Time Accident Rate for Solvay employees (LTAR)	Accident per million hours worked	a	0.70	0.69	0.67		
	Lost Time Accident Rate for Contractors (LTAR)	Accident per million hours worked	2	0.52	0.90	0.85		
	Injuries	Number	2	50	68	66	92	101
	Occupational illness frequency rate (short/mid-latency)	cases per one million hours worked		0.06	0.08	0.17	0.09	
	Total Long-latency occupational diseases	Number		10	20	21	17	26
	rotal Lorig-laterity occupational diseases							
	Total Short/mid-latency occupational diseases diseases	Number	N	3	4	9	5	6

		Units	Trends	2017	2016	2015	2014	2013
	Employee engagement and wellbeing							
J / ₂₀₁₇	Solvay engagement index	%		75	77	75	-	72
J 2017	Coverage by collective agreement	%	2	100	87.8	77	82.2	85
	Societal actions							
	Solvay Group donations, sponsorship, and own projects	€ million		3.92	7.38	5.25	_	_
	Employees involved in local societal actions	%	7	33	23	20	-	_

1.2. Highly material aspects

		Units	Trends	2017	2016	2015	2014	201
	Energy							
	Primary energy consumption	Petajoules low heating value (PJ)		130	138	175	179	18
	Secondary energy purchased	Petajoules low heating value (PJ)		49	53	63		
	Total energy sold	Petajoules low heating value (PJ)		22	23	26		
	Fuel consumption from non-renewable sources	Petajoules low heating value (PJ)		100	104	107	100	1
	Fuel consumption from renewable sources	Petajoules low heating value (PJ)		3	4	5		
17	Energy efficiency index – Baseline 100% in 2012	%		94	94	96	99	
	Air quality							
117	Nitrogen oxides emissions – NO _x	Metric tons	<u> </u>	9,466	11,098	12,210	12,679	10,9
017	Nitrogen oxides intensity	Kg per € EBITDA	<u> </u>	0.0042	0.0058	0.0063	0.0071	0.00
17	Sulfur oxides emissions – SO _x	Metric tons		4,598	5,395	6,563	6,620	10,3
117	Sulfur oxides intensity	Kg per € EBITDA		0.0021	0.0028	0.0034	0.0037	0.00
917	Non-methane volatile organic compounds emissions – NMVOC	Metric tons		4,949	4,968	6,781	7,158	7,4
17	Non-methane volatile organic compounds intensity	Kg per € EBITDA		0.0022	0.0026	0.0035	0.004	0.00
	Water and wastewater							
117	Freshwater withdrawal	Million m ³	2	328	491	537	535	_
917	Freshwater withdrawal intensity	Cubic meters per € EBITDA		0.15	0.26	0.28	0.3	0
117	Chemical oxygen demand (COD)	Tons O ₂		5,526	7,539	8,834	9,652	9,7
17	Chemical oxygen demand intensity	Kg per € EBITDA		0.0025	0.0040	0.0045	0.0054	0.0
	Waste and hazardous materials							
	Non-hazardous industrial waste	1,000 Metric tons	2	1,643	1,463	1,453	1,637	
	Hazardous industrial waste	1,000 Metric tons		101.7	194.2	202	194.6	
	Total industrial waste	1,000 Metric tons	2	1,745	1,657	1,655	1,831	
17	Industrial hazardous waste not treated in a sustainable way in absolute volume	1,000 Metric tons		41.8	50.3	47.1	49.7	
17	Industrial hazardous waste not treated in a sustainable way intensity	Kg per € EBITDA		0.0187	0.0265	0.0241	0.0279	
7	Substances of very high concern (SVHC) according to REACH criteria present in products sold	Number	7	35	20	20	25	
	Percentage of completion of Analysis of Safer Alternatives program for marketed substances	%	a	49	18	5	_	

		Units	Trends	2017	2016	2015	2014	2013
√ 2017	Total Headcount	Headcount	<u> </u>	24,459	27,030	26,350	25.909	27,146
√ 2017	Percentage of women in the Group	%	•	23	23	22	22	20
J ₂₀₁₇	Senior Manager	headcount		396	428	428	428	456
√ 2017	Middle Manager	Headcount	<u> </u>	2,898	3,026	2,819	2,731	2,727
J ₂₀₁₇	Junior manager	Headcount		5,090	5,348	4,491	4,186	4,126
J ₂₀₁₇	Non-manager	Headcount	<u> </u>	16,075	18,228	18,612	18,564	19,837
	Solvay's workforce under 30 years old	Headcount	<u> </u>	2,765	3,242	_	_	_
	Solvay's workforce between 30-49 years old	Headcount	S	13,578	15,107	_	_	_
	Solvay's workforce 50 years old and older	Headcount		8,116	8,681	_		-
	Customer welfare							
	Solvay's Net Promoter Score (NPS)	%	7	36	27_	24_	14_	
	Management of the legal, ethics and regulatory framework							
	Total claims made	Number	7	83	65		-	-
	Total claims closed including cases for which there was insufficient information or cases that were misdirected or							
	referred	Number		71	62			_
	Unsubstantiated claims among resolved cases	Number	7	38	28			_
	Substantiated claims among resolved cases	Number	<u> </u>	19	29			_
	Process accident and safety							
	Percentage of product lines having a risk analysis updated in the last five years	%	7	77	65	69	64	58
	Number of "Risk Sheets Level 1" at the							
J ₂₀₁₇	end of the year	Number	_	56	46	94	217	11
J ₂₀₁₇	Percentage of level 1 risk situations resolved within one year	%		100	100	100	100	100
J ₂₀₁₇	Risk level 1 situation resolved	Number		48	98	232	23	111
V 2017	Sites with required Process safety management systems practices in line with their level	%	<u> </u>	79	90	84		
	Process incidents with a Medium severity	Number		281	259	215		
	Process incidents with a High severity	Number		0	1	1		
J ₂₀₁₇	Process safety rate			0.9	0.7	0.6	0.4	
2017	Medium severity incidents with	90		0.3		0.0	U.4	
J 2017	environmental consequences	Number	2	59	40	46	55	-
	Medium severity incidents with environmental consequences in which the limits of the operating permit were							
	exceeded	Number	7	27	26	26	-	-

1.3. Moderate materiality aspects











Units	Trends	2017	2016	2015	2014	2013
Headcount	2	2,100	2,340	2,390	1,950	1,948
Number	7	1,660	1,300	1,530	1,608	1,381
Number	2	284	240	256	259	232
%	7	18	15	18	21	22
	Headcount Number Number	Headcount Number Number 2	Headcount 3 2,100 Number 3 1,660 Number 2 284	Headcount Section 2 2,100 2,340 Number 1,660 1,300 Number 2 284 240	Headcount 3 2,100 2,340 2,390 Number 2 1,660 1,300 1,530 Number 2 284 240 256	Headcount 2,100 2,340 2,390 1,950 Number 1,660 1,300 1,530 1,608 Number 284 240 256 259

	Units	Trends	2017	2016	2015	2014	2013
Generated Economic Value							
Sales	€ million	2	10,891	10,045			
Interests on lending and short term deposits	€ million	2	15	13			_
Earnings from associates and JV accounted for using MEQ	€ million		44	85			_
Income from non consolidated investments	€ million		5	11			_
Result from discontinued operations	€ million	2	241	82			
Distribution of Generated Economic Value							
Operating costs	€ million	2	6,532	5,732			_
Employee Wages & Benefits	€ million	2	2,275	2,238			-
Current taxes	€ million	2	191	190			_
Payment to providers of funds	€ million	2	723	707			_
Community contribution	%	•	0	0			
Economic Value Retained	€ million	a	1,474	1,369			
Health and environmental impacts of our products							
Percentage of turnover generated with product having an Life Cycle Assessment (cradle-to-gate)	%	2	92	88	94	88	77
Transport safety							
Accident during transport and distribution	Number		27	28	33		_
Recruitment, development and retention							
Total Headcount	Headcount		24,459	27,030	26,350	25,909	27,145
Percentage of women	%	\bigcirc	23	23	22	22	20
Percentage of permanent staff	%	\bigcirc	91	91	86	96	89
Total hirings	Headcount	2	1,661	1,450	2,555	2,317	1,892
Total leaves	Headcount		2,542	2,688	2,845	2,342	1,932
Total voluntary leaves	Headcount		973	948	626	672	636
Average of hours of training per employee	Hours		32.9	33.7	38.8	32	_
Animal testing							
Number of vertebrates	Number		3,353	11,242	7,434		_
Number of studies	Number		60	69	49		
Supply chain management							
Suppliers	Number	2	39,400	45,000	43,425	46,000	_
Critical suppliers	Number		810	1,080	1,080	689	
Materials							
Mineral products	1,000 Metric Tons		2,520	3,000	13,600	4,910	4,247
Biosourced products (agro-forestry and animal-based)	1,000 Metric Tons	S	190	240	400	426	403
Natural gas	1,000 Metric Tons		810	1,410	1,500	1,862	1,573
Petrochemicals	1,000 Metric Tons	2	770	1,340	1,400	2,625	2,638
Other raw materials	1,000 Metric Tons	<u> </u>	480	530	250	382	295
Total raw material purchased	1,000 Metric Tons	<u> </u>	4,770	6,520	17,150	10,205	9,156

2. SUSTAINABILITY MANAGEMENT

Solvay Way defines the Group's approach to sustainability, governs all its operations and ensures responsible action at all times. One key aspect of Solvay Way is the Sustainable Portfolio Management tool (SPM). It enables Solvay to make strategic decisions that steer its portfolio, support progress toward its sustainability objectives, and factor sustainability into operating decisions.

2.1. Solvay Way approach and management

Solvay Way illustrates how the Company integrates social, societal, environmental, and economic factors into its management, strategy, decision-making, and operating practices, with the objective of creating value that stands the test of time.

Solvay Way, constantly improving how we do business

Solvay Way encompasses all aspects of the Company's sustainable approach to doing business. It is applied at every stage of a Solvay product's life cycle, including design, manufacture, resource consumption, application, and end-of-life. It also takes into account the societal impact of how they are made and used. This approach ensures a sustainable value creation shared by all the Group's stakeholders.

Solvay Way is based on a challenging framework, with a rigorous approach that incorporates ISO 26000 key guidance. Solvay has made 23 commitments to six major stakeholders (customers, employees, investors, suppliers, communities, and the planet), translated into 48 associated practices. Solvay Way commitments are aligned with the interests identified for each stakeholder group.

Solvay Way commitments and practices

To drive improvement throughout the company, each global business unit, research center, function, and production site conducts annual self-assessments guided by the Solvay Way framework. From managers to operators, every Group employee

has a part to play in the Solvay Way responsibility approach. Self-assessment findings – encompassing lessons learned, best practices, strengths, and improvement opportunities – help entities measure their progress in sustainable development for each stakeholder group and construct their improvement plans.

Accountability through self-assessment

Global business unit presidents and function leaders are accountable for effectively implementing Solvay Way across their businesses and functions. Solvay Way is deployed by a network of more than 200 "Champions" and "Correspondents". The network of "Champions" operating at the business and function level is assisted locally by a team of "Correspondents". They play a key role in deploying the Solvay Way approach and sharing best practices and experiences, and they promote collaborative work habits to ensure that processes and practices are continuously improved.

This network is coordinated and supervised by Solvay's Sustainable Development function, which informs them of stakeholder needs and reports directly to the CEO. Solvay's Sustainable Development function is also responsible for making improvements by implementing the findings and conclusions reached through dialog with stakeholders. The key assessment results are presented each year to the Executive Committee and the Board of Directors.

Driving sustainability

2017 Solvay Way performance

Every Solvay employee is responsible for the success of Solvay Way, and everyone is asked to take the Group's sustainable development objectives on board through their behavior or personal involvement. In 2017, 44% of Solvay employees working at industrial and Research and Innovation sites took part in actions related to Health, Safety and Environment (HSE), social, and local community projects. This strong involvement shows that employees are interested in Solvay's sustainable development approach.

44%

of employees involved

18%

of improvement in CSR practices

100%

of sites, GBU and Functions

Solvay Way gives each Group entity the tools it needs to assess and improve its CSR practices using a ranking system with four performance levels. Each entity has to position its level on a scale from 0 to 4 based on its implementation of Solvay Way practices.

Entities, which has a practice level lower than 1, has to define and implement an action plan in order to reach at least the level 1 within the year.

Solvay Way, constantly improving how we do business - A continuous improvement process based on four scales

SOLVAY Waly

The entity is close to the benchmark of the profession. The improvement process is sustainable, the results are sustainable. The entity is recognized for its exemplary performance. All stakeholders adhere to the approach.

3 - MATURITY

Action plans bring measurable progress. Their implementation is carried out and audited throughout the perimeter with details of lessons learned; employees are mobilized in their deployment.

2 - DEPLOYMENT

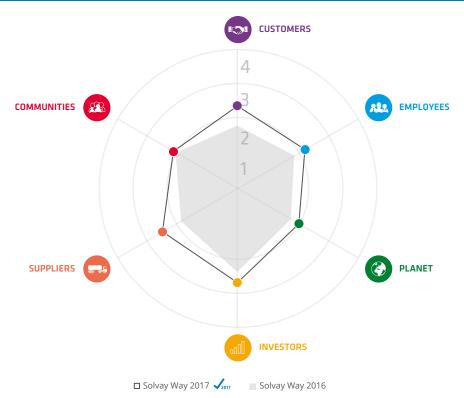
The entity implements a structured, internal progress dynamic with stakeholders. Methods are used to set priorities. Resources are deployed and managers are mobilized in action plans.

The entity is essentially responsive to the expectations of stakeholders. An inventory is conducted.

In 2017, all GBUs and corporate functions carried out a self-assessment involving 133 industrial sites, 8 R&I sites, and the 11 major administrative sites. The Solvay Way spider chart below shows the results of these self-assessments.

The Internal Audits corporate team checks the self-assessment process annually (11 sites in 2017). The self-assessment findings are supplemented by the results from internal audits and independent assurance reviews.

2017 Solvay Way Group profile



The Solvay Way Group profile is determined by the arithmetic average of Solvay site, function, and GBU self-assessments with respect to 48 practices. In order to enable a comparison between 2016 and 2017, the 2016 Solvay Way profile has been restated for the Employees, Planet and Suppliers stakeholders (4 new practices set as 0 and 3 practices removed). Composite Materials and Technology Solutions have been integrated in the 2017 Solvay Way Group profile. Acetow and Emerging Biochemicals have been excluded. Performance Polyamides is included in the 2017 Solvay Way Group profile.



Correlation between the SPM analysis and sales growth

Solvay's Solutions demonstrate higher growth than the Challenges, at +3% vs -2% reduction.





Solvay Cares

In 2017, Solvay signed an agreement with its employee representatives setting minimum worldwide social standards which apply across the entire Group.

Solvay sets minimum social coverage standard through "Solvay Cares" for all its employees worldwide



Solvay becomes the Foundation's Global Partner for the chemical sector

Solvay and the Ellen MacArthur Foundation sealed a three-year partnership to accelerate the transition to a circular economy.

© Solvay and the Ellen MacArthur Foundation seal three-year partnership to accelerate the transition to a circular economy



Solvay back in the Dow Jones Sustainability Index

1 congratulate Solvay wholeheartedly for being included in The Sustainability Yearbook 2018. The companies included in the Yearbook are the world's most sustainable companies in their industry and are moving the ESG needle in ways that will help us realize the UN's Sustainable Development Goals by 2030.

Aris Prepoudis

CEO, RobecoSAM





Solvay recognizes Mondi's remarkable sustainable performance

Solvay recognized Mondi as its best supplier in terms of corporate social responsibility (CSR). The award is based on rankings by EcoVadis in 2017, a company that monitors sustainability in global supply chains.



More on Solvay's supply chain management



Dialogue with local communities

70% of the industrial sites have a working group that defines the major issues facing the region and which relevant societal actions the site will take.



More on local societal actions

2.1.1. Solvay Way commitments and practices

The Solvay Way reference framework is structured by stakeholders. The following stakeholders are identified as the most important. Aligned with ISO 26000, Solvay Way is based on a specific concrete framework in which 22 commitments give rise to 49 associated practices.

Our commitments to our Customers

Commitments	Practices
	Developing a collaborative CSR differentiation
Integrate our CSR commitments into our customer relationships	Informing customers of product-related risks
Control product rolated right	Deploying the Product Stewardship management system
Control product-related risks	Managing the risks attached to substances of very high concern (SVHCs)
Internate CCD into innovation 0 investments	Steering innovation projects while integrating CSR
Integrate CSR into innovation & investments	Steering investment projects while integrating CSR
Apply and develop our markets while integrating CCD	Detecting megatrends, selecting target orientations
Analyze and develop our markets, while integrating CSR	Orienting GBUs' action plans to integrate CSR

Our commitments to our Employees

Commitments	Practices
Manage HSE	Deploying an HSE management system
	Controlling the risks associated with occupational exposures
	Promoting occupational health
Ensure employees' health and safety	Preventing occupational accidents
	Promoting well-being at work
Respect employees' fundamental human rights and guarantee their social	Deploying the IndustriALL Global Union agreement
rights	Promoting diverse teams by creating an inclusive culture
Ensure quality social dialogue	Respecting employees' rights of representation
Davidan amala vahility	Developing employees skills
Develop employability ———	Planning the workforce
	Motivating employees to attain objectives
Mark at a constant of	Promoting improvement projects and suggestions systems
Motivate employees ————	Compensating employees fairly
	Integrating CSR commitments into remuneration policy

Our commitments to our Planet (Government and NGOs)

Commitments	Practices
Inform ampleyees and respect regulations regarding any ironment	Informing employees and involving them in environmental efforts
Inform employees and respect regulations regarding environment	Respecting and anticipating regulations
	Improving energy efficiency
Preserve natural resources	Optimizing raw materials consumption and reducing waste
	Reducing water consumption
	Reducing greenhouse gas emissions
Limit an ironmental impact, process a bindit wreit a	Reducing the impact of processes on air, water and soil quality
Limit environmental impact, preserve biodiversity	Preserving biodiversity on and around sites
	Reducing IT impact
Exercise responsible influence	Dialoguing and communicating transparently

Our commitments to our Investors

Commitments	Practices
Create value recognishly	Measuring responsible value creation
Create value responsibly	Integrating CSR into our portfolio management
Ensure risk management	Managing risk globally and considering risk management when making decisions
Ensure dissemination of and compliance with good management and	Developing responsible practices and behaviors
governance practices	Promoting responsible governance at Solvay

Our commitments to our Suppliers

Commitments	Practices
Define prerequisites and integrate them into the supplier selection and qualification process	Defining prerequisites and selecting suppliers accordingly
Evaluate buyers' CSR performance	Training and assessing buyers
	Managing and evaluating suppliers' performance
Manage and assess suppliers' CSR performance, optimize relationships	Developing partnerships for innovation
	Ensuring balanced relationships with suppliers

Our commitments to the Local communities

Commitments	Practices
Ensure entities are integrated within their surrounding communities	Developing and steering relationships with local stakeholders
Ensure entitles are integrated within their surrounding communities	Being part of the solution to local societal challenges
	Identifying hazards and assessing industrial risks
Control industrial risks related to entities' physical locations	Managing industrial risks for the community
	Preparing for emergency situations
Control supply chain risks and preventing accidents	Preventing transportation accidents

2.2. Sustainable Portfolio Management





Solvay's Sustainable Portfolio Management (SPM) focuses on sustainable business solutions. The SPM methodology is designed to boost Solvay's business performance and deliver higher growth by letting decision-makers know how Solvay's products contribute to sustainability, considering two factors:

1. the environmental footprint related to their production, and associated risks and opportunities,

2. how their applications create benefits or challenges from a market perspective, based on a qualitative assessment.

With SPM, decision-makers can detect sustainability risks and opportunities along the entire value chain (cradle-to-grave), develop action plans, and deliver innovative solutions that balance economic, social, and environmental values. SPM assessments are completely reviewed every year in order to capture the most recent signals from the market in a dynamic perspective.

Since 2009

88% of the portfolio analyzed

1,700+
Products-Applications
Combinations assessed

600+ experts involved

49% of turnover in Solutions*

Sustainability integrated in the management processes

The Corporate Sustainable Development function manages the SPM methodology. SPM is deployed in close cooperation with Business Units and Functions in key processes: Strategy, Research and Innovation, Capital Expenditures, Marketing and Sales, and Mergers and Acquisitions. The SPM methodology is part of the Solvay Way framework and helps measure how well Global Business Units and Corporate Functions have integrated sustainability into their business practices.

- The SPM profile is an integral part of the strategic discussions between Global Business Units and the Executive Committee.
- Mergers and Acquisition (M&A) projects are also evaluated using SPM to see if the investment is feasible in the light of Sustainable Portfolio targets.
- Investment decisions (capital expenditure above €10 million and acquisitions) made by the Executive Committee or the Board of Directors include a sustainability challenge that encompasses an exhaustive SPM analysis of the potential investment.
- All Research and Innovation projects are evaluated using SPM.

 In Marketing and Sales, SPM makes it possible to engage customers on fact-based sustainability topics aimed at differentiating and creating value for Solvay and the customer, such as climate change action, renewable energy, recycling, and air quality.

Towards a reference framework for active portfolio management

Solvay co-chairs two coalitions that are instrumental in setting the industry reference framework for active portfolio management:

- The World Business Council of Sustainable Development's Portfolio Sustainability Assessment initiative sets a high standard and gives industries a common framework for its implementation, detailing a specific methodology for the chemical industry. The SPM methodology is aligned with the WBCSD framework. This alignment will be further enhanced by minor improvements in the SPM methodology in 2018. Benchmarking and the sharing of best practices among peers make the SPM methodology more robust and lead to better decision-making.
- The SPM guide has incorporated the Natural Capital Protocol referential in recognition of its robust and pragmatic approach to portfolio sustainability assessment.

^{*} Scope: Consistent with financial reporting

3. BASIS OF PREPARATION

Task Force on Climate-related Financial Disclosures (TCFD)

To help identify the information that investors, lenders, and insurance underwriters need to appropriately assess and price climate-related risks and opportunities, the Financial Stability Board established an industry-led task force: the Task Force on Climate-related Financial Disclosures.

The Task Force structured its recommendations around four themes that represent key aspects of how organizations operate: governance, strategy, risk management, and metrics and targets.

Governance

- The Charter of Corporate Governance describes how the Board of Directors manages sustainability-related aspects and is available on the Solvay Website. The Board thus devotes at least one meeting per year to an update on trends in global sustainable development issues, including climate change risks and opportunities.
- A Responsible for Climate risks has been appointed at the Executive Committee level. He is in charge of ensuring that climate-related aspects are well considered in the Group's strategy and operations.

Strategy

- Long-term horizon assumptions are presented in the description of megatrends. See in particular the description of the "Resource constraints and demand for sustainability" megatrend. Mid-term assumptions (in the coming five years) are described in our main markets description. Short-term assumptions (one year) are presented in our outlook.
- ① Climate-related physical risks and climate transition risks are described in the risk management section.
- The Sustainable Portfolio Management (SPM) methodology is used to assess sustainability-related risks and opportunities for each combination of product and application, with a focus on the long term. Environmental impact monetization of CO₂ emissions uses a CO₂ price of € 75 per ton, in line with 2°C scenarios assumptions. This allows us to have a sound understanding of the climate resilience of the majority of our products and solutions portfolio but we need to extrapolate this understanding to a strategic business level. We plan to conclude our work in this regard, to identify mitigation actions by reference to innovation priorities, capital investments, and portfolio actions, and to disclose our progress qualitatively, over the next two years.
- The presentation of the Group's main risk does not include a differentiation between short, medium, and long-term horizons. Quantification of impacts is not disclosed.

Risk management

- The risk management process, the main risks, and the process used to rank them are described in the risk management section
- Analysis of sustainability-related risks and opportunities is done through the SPM methodology, for each product in each application or market, including the climate change transition risk.
- "Greenhouse gas emissions" has been identified as a priority aspect in the materiality analysis of the group. "Climate-related physical risks" and "Climate transition risks" have been identified as part of the Group's main risks. Correspondence between main risks and highly material issues is part of the materiality analysis process.
- SPM is a mandatory requirement in key group processes and in particular in the assessment of capital expenditures projects, research and innovation projects, and acquisition and divestiture projects.

Metrics and targets

- ① Strategic objectives to drive sustainable value creation are described in our scorecard.
- ① Greenhouse gas emissions, energy consumption, and SPM metrics and targets are reported in the extra-financial statements section.
- Greenhouse gas Scope 1 and Scope 2 emissions are fully reported. The scope of emissions reporting is consistent with financial reporting.
- Scope 3 emissions related to upstream activities are disclosed. Scope 3 emissions related to processing, use and end-of-life treatment of sold products are qualitatively assessed and potential meaningful impacts have been identified but not fully quantified, and therefore not disclosed. This does not prevent us from proactively engaging with customers to ensure responsible activities to minimize emissions

Corporate reporting on the SDGs

Solvay has joined a Corporate Action Group as part of the SDG Action Platform to help influence a broader multi-stakeholder movement that will play a pivotal role shaping the future of corporate reporting on the SDGs.

This Action Platform is a two-year initiative led by the United Nations Global Compact (UNGC) and GRI. The Action Platform aims to facilitate corporate reporting on the SDGs, and to leverage the GRI Standards and the Ten Principles of the UN Global Compact so that businesses can incorporate SDG reporting into their existing processes, empowering them to act and making it possible to achieve the SDGs.

Main reporting reference frameworks used in the preparation of this integrated report

Global Reporting Initiative (GRI): the GRI Standards are the main reference for Solvay's sustainability reporting.

United Nations Global Compact: the information provided serves as a progress report on the implementation of the ten principles of the United Nations Global Compact.

International Integrated Reporting Council (IIRC): Solvay adheres to the principles and content elements of Integrated Reporting, as described in the "InternationalFramework" published by the IIRC.

2014/95/EU: Solvay uses the GRI Standards to comply with the Directive 2014/95/EU of the European Parliament and of the Council of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information. The Directive has been transposed into Belgian Legislation in September 2017.

Sustainability Accounting Standards Board (SASB): Solvay aligns its materiality analysis with the SASB approach to prepare the SASB Materiality Map™. See the Materiality Analysis section of this report for more details.

United Nations Sustainable Development Goals (SDG): Solvay has integrated the SDGs into its materiality analysis as the official agenda of the "Planet" (Governments and NGOs) stakeholders group. Solvay has worked with other chemical companies, under the leadership of the World Business Council for Sustainable Development (WBCDS), to identify the SDGs most impacted by the chemical industry. The SDGs relevant to Solvay confirmed the priorities the Group had already identified through its materiality analysis. Solvay has also joined the "Reporting on the SDGs" Action Platform of the GRI and the UN Global Compact to identify relevant impact indicators.

3.1. Reporting practices

Greenhouse gas emissions reporting practices

Greenhouse gas (GHG) emissions are reported in accordance with the world's most prevalent standards for sustainability reporting (GRI guidelines and GHG protocol). In particular, because Solvay is a chemical company, it was decided to apply the "Guidance for Accounting & Reporting Corporate GHG Emissions in the Chemical Sector Value Chain" published by the World Business Council for Sustainable Development, which provides best practices for greenhouse gas accounting and reporting. By extension, other emissions are reported according to the same guidelines.

To better reflect its sustainability policy, Solvay decided to apply the market-based method to calculate CO_2 emissions associated with purchased electricity. To fully comply with GRI's requirements, the following criteria (in decreasing order of priority) are applied to select the CO_2 emission factor of each electricity supply contract:

 Energy attribute certificates – emission factors resulting from specific instruments such as green energy certificates;

- Contract based the emission factor obtained from contract agreements on specific sources for which there is no emission of specific attributes;
- **Supplier / utility emission rates** the emission factor that is disclosed as result of the supplier's retail mix;
- **Residual mix** the emission factor which is calculated based on the non-attribute claimed production and reflects the mix after the subtraction of certified products;
- Location-based if none of the above factors is available, the national emission factor published by national authorities, the International Energy Agency. Based on a World Resources Institute (WRI) recommendation, for the USA, Emissions & Generation Resource Integrated Database (eGRID) emission factors published by the United States Environmental Protection Agency are used instead of the state emission factor.

Greenhouse gas emission

Energy reporting practices

Energy consumption components are converted into primary energy, with the following conventions:

- fuels, using the net calorific values
- steam purchased, taking into account the reference value of boiler efficiency related to the fuel used for its generation (e.g. 90% efficiency based on the net calorific value for natural gas)
- electricity purchased, assuming an average efficiency of 39.5% for all types of power production except for nuclear power (33%), based on net calorific value (source International Energy gency (IEA)).

Energy

Environmental reporting practices

Environmental data are collected yearly on all Solvay industrial sites (production sites and R&I centers) and for each business separately in the case of multi-business sites. The data collection comprises substance emissions to air and water, waste production, and a series of parameters dealing with water and general environmental management.

After a thorough validation process, these data are consolidated at the Group level in consistency with financial reporting. In addition, the consolidated data are verified by an external auditor.

For 2017, the data for all Performance Polyamides GBU sites have been excluded (i.e. financially deconsolidated), with the exception of the Paulinia (Brazil) site, which is not part of the deal with BASF.

Data from all of the sites of two Cytec legacy GBUs ("Technology Solutions" and "Composite Materials"), acquired at end 2015, have been integrated as from this year.

It has to be noted that the 2020 (and intermediate 2017) targets for the Group's Environmental Plan have been calculated with the information at hand in 2015. In particular, the divestment of the GBU's Acetow and Emerging Biochemicals has been integrated but not the recently announced divestment of the GBU Performance Polyamides.



Water and wastewater





Waste and hazardous material

Safety reporting practices

Safety performance is measured in all entities under Solvay operational control, i.e. on sites where Solvay policies and procedures apply. Accidents are reported to a central database and classified according to time lost and severity of injuries.

Frequency rates are calculated monthly at the GBU and Group levels. Performances and accident typology are analyzed on a quarterly basis. Reports are provided to the Executive Committee and GBUs.

Medical Treatment Accident Rate (MTAR), Lost Time accident Rate (LTAR) and Process Safety Rate are calculated based on million hours worked. The Group reporting guidelines for calculating hours worked hours (employees, contractors and temporary workers) are under revision to ensure higher consistency of the methodological approaches across all Group entities as of 2018.

Employee health and safety

Social reporting practices

Headcount is provided for two scopes:

- Solvay Continuous Operations includes continuous operations only and matches Financial accounts presentation;
- Solvay Total Headcount also considers discontinued operations.

Apprentices, trainees and students are excluded from the numbers. Headcount refers to employees having a contract with Solvay, who are classified as active as they have a position in the org chart. FTE (Full Time Equivalent) corresponds to Active employees times capacity utilization.



Our workforce figures

3.2. Materiality analysis

Solvay bases its priorities for sustainability on a materiality analysis. This approach identifies critical economic, environmental and social aspects with potential to significantly impact Solvay's performance and/or substantially influence stakeholders' decisions. The analysis is performed and updated each year according to the Sustainability Accounting Standards Board (SASB) approach.

5

Priority aspects

8

Highly material aspects

12

Moderate materiality aspects

Materiality analysis

Category	Moderate materiality	High materiality	
Business model and innovation	Environment, social impacts on assets and operations Product stewardship	Sustainable business solutions	
Environment	Biodiversity impacts	 ← Greenhouse gas emissions Air quality Energy Water and wastewater Waste and hazardous materials 	
Human capital	Compensation and benefits Recruitment, development and retention Compensation and benefits Recruitment, development and retention Employee engagement and well-b		
Social capital	Data security and customer privacy Fair disclosure and labelling Fair marketing and advertising Customer welfare Societal actions		
Leadership and governance	Systemic risk management Regulatory capture and political influence Materials sourcing Supply chain management	Process accident and safety Management of the Legal, Ethics and Regulatory framework	

Priorities

Materiality analysis process

Solvay's Sustainable Development function coordinates the analysis with an internal network of Solvay Way champions in the business units and functions. Experts in each Corporate Function have reviewed the analysis of each aspect, and particular attention has been paid to consistency with the Group's risk analysis.

Materiality analysis process



Use of the SASB's Materiality Map™

SASB's Materiality Map^TM identifies likely material sustainability aspects on an industry-by-industry basis.

Review our analysis by the Executive Committee and the Global Business Units and corporate functions leaders, give a special importance to ensure consistency with the analysis of the Group's main risks and also compare with the result of the analysis of the SASB for the chemical sector.

2017 updates

In 2017, "Diversity and Inclusion" was moved from Moderate Materiality to High Materiality based upon greater evidence of interest from multiple stakeholder groups, and upon the results of GBU materiality analysis.

As in previous years, the vocabulary used for material aspects has been kept consistent with the SASB Materiality Map™, except in cases where the Group's Executive Committee has made a decision to do otherwise during the validation step in order to broaden the scope of some material aspects. This is the case for the following high materiality aspects:

STAKEHOLDER INCLUSIVENESS | SUSTAINABILITY CONTEXT

Indirectly taken into account:

- through the exhaustive list of aspects of the SASB's "Materiality Map™"
- through the "evidence of interest criteria" which includes the analysis of documents published by each stakeholder group

Report

Reporting on the 8 Highly material aspects and the 12 Moderate materiality aspects.

2 SASB's Materiality Map™ is based on tests designed to prioritize aspects. To determine which sustainability topics were likely to be material to particular industries, SASB ran the following tests: evidence of interest, evidence of financial impact, forward looking adjustment.

The network of Solvay Way champions and internal experts for each highly material aspect were involved in the process.

Annual review led by the Sustainable Development Function

A review takes place after the report has been published, and the organization is preparing for the next reporting cycle. The findings inform and contribute to the Identification Step for the next reporting cycle.

- "Societal actions" includes "Community relations" from the 2017 SASB Materiality Map™;
- "Employee engagement and well-being" includes "Labor relations" and "Fair labor practices" from the SASB Materiality Map™, and employee well-being;
- "Sustainable business solutions" includes "Lifecycle impacts of products and services" from the 2017 SASB Materiality Map™;
- "Management of the legal, ethics and regulatory framework" includes "Business Ethics", "Competitive behavior", and "Human Rights" from the 2017 SASB Materiality Map™.

The main change in vocabulary compared to last year is that "Process accident and safety" now combines the aspects formerly labeled "Process safety, emergency preparedness and response" and "Environmental accidents and remediation".

Correspondence between the materiality analysis and the risk analysis of the group

As described in the corresponding section of this report, the risk analysis of the group is a specific process and is used as input for the materiality analysis.

Two of the main risks, "Security" and "Cyber risks", are linked to moderate materiality aspects (Systemic risk management, Data security) because their impact on daily operations is limited. The other risks are linked to highly material aspects.

3.2.1. Materiality analysis process

Solvay bases its materiality analysis on the Sustainability Accounting Standards Board (SASB) approach. It offers an exhaustive, validated list of material aspects to start with. Below you will find more details about why each aspect is material depending of three tests for prioritizing issues and classifying their level of short-term and long-term impacts.

The three tests are:

- **Evidence of interest**: how frequently the issue appears in publications related to our company or industry;
- Evidence of financial impact: the impact on revenue and cost, assets and liabilities, and risk profile;
- Forward looking impact: how the issue's importance will evolve over time, in terms of magnitude, probability, or externalities.



Moderate



High



Priority

Business model and innovation

Aspects	Definition	Evidence of interest	Evidence of financial impact	Forward looking adjustment	Materiality
Sustainable business solutions	Chemical products economical, environmental and social impacts throughtout the supply chain	High High materiality for the Chemical industry Solvay is more CO ₂ -intensive than the average of the chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•

Environment

Aspects	Definition	Evidence of interest	Evidence of financial impact	Forward looking adjustment	Materiality
Energy	Energy production and consumption optimization and management of energy transition	High High materiality for the Chemical industry Solvay is more energy- intensive than the average of the chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Greenhouse gas emissions	Greenhouse gas emissions reduction plans.	High High materiality for the Chemical industry Solvay is more CO ₂ -intensive than the average of the chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Air quality	Air pollutants emissions reduction plans	High High materiality for the Chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Water and wastewater	Management of water withdrawals, dicharges and consumption	High High materiality for the Chemical industry	Medium Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Waste and hazardous materials	Management of hazardous materials in raw materials, intermediate products, sold products and wastes. This includes Safety & Environmental Stewardship of Chemicals.	High High materiality for the Chemical industry REACH/SVHC; Kyoto protocol	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•

Human capital

Aspects	Definition	Evidence of interest	Evidence of financial impact	Forward looking adjustment	Materiality
Diversity and inclusion	Non discrimination and diversity management in operations and management structures	High Specific item of 2014/95/EU High for 4 pilot GBUs (regional)	Medium Revenue/cost: yes Asset/liability: no Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Employee health and safety	Occupational safety, industrial hygiene and health management. Employees and contractors of all sites under Solvay's operational control are covered.	High High materiality for the Chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Employee engagement and wellbeing	Labour relations, employee well- being	High Historical commitment of the Solvay group since its foundation	Medium Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: no Externalities: yes	•

Social capital

Aspects	Definition	Evidence of interest	Evidence of financial impact	Forward looking adjustment	Materiality
Customer welfare	Customer relations management, customer loyalty, net promoter score	Medium High for some business units (access to customers development pipeline)	High Revenue/cost: yes Asset/liability: no Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Societal actions	Community relations Corporate citizenship and philanthropy Business programs for social needs	High May be linked to license to operate	Low Revenue/cost: no Asset/liability: yes Cost of capital: no	No Probability/ magnitude: no Externalities: no	•

Leadership and governance

Aspects	Definition	Evidence of interest	Evidence of financial impact	Forward looking adjustment	Materiality
Management of the legal, ethics and regulatory framework	Includes Business ethics and transparency of payments, and Competitive behavior	High High materiality for the Chemical industry Rising legislative requirements for the chemical industry	Medium Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•
Process accident and safety	Process safety programs and management of environmental accidents consequences.	High High materiality for the Chemical industry	High Revenue/cost: yes Asset/liability: yes Cost of capital: no	Yes Probability/ magnitude: yes Externalities: yes	•

3.3. Stakeholder engagement



Taking into consideration the Group strategy, emerging societal and business issues, and the outcomes of our materiality analysis, we identify the levels of engagement per stakeholder group, which can vary from proactive engagement to providing information upon request.

Customers

Solvay puts its customers at the heart of its strategy and is becoming increasingly customer-centric. Understanding customer needs is key, and we regularly meet with key players in our markets all around the world, for example at Tech Days.

Specialists in R&I, and marketing and business experts from all relevant Group's activities take part in these events, showing our customers the added value and potential they can derive from Solvay as a multi-specialist with a presence along the entire value chain. This approach allows us to develop innovative and competitive solutions precisely tailored to the present and future demands of our customers' end-users.

In the last five years, Solvay has held about 25 Group Tech Days with leading European, Asian, and American players in such industries as automotive, aeronautics, oil & gas, agro, and coatings. These events have had a significant impact for the group, with more than 2,500 customer representatives giving rise to tangible business opportunities for the group (e.g. through joint development agreements).

Keeping pace with Stakeholders speak - changing trends
Customers

Employees

Engagement is fostered by regular dialog between Group managers and employees. More specifically, labor relations cover dialog with employee representative bodies at each of four levels: site, country, Europe, and Group.

For more details about the main topics discussed in 2017, please see the "Labor relations" section of this report.

Employee engagement Stakeholders speak - and well-being Employees

Planet - via Government and NGO

Solvay engages in a constructive dialog with public authorities on issues of legitimate interest to Solvay. This includes participation in many trade associations at global and regional level, such as the World Business Council for Sustainable Development (WBCSD), the International Council of Chemistry Associations (ICCA), BusinessEurope, and European Chemical Industry Council (Cefic).

Stakeholders speak - Membership of associations

Investors

19

roadshows

Solvay engages in dialog with investors about strategy and performance as measured by both financial and extra-financial indicators, and it responds to the questionnaires of global and European extra-financial rating agencies. These face-to-face interactions are a good opportunity to explain its policies, processes, and practices in terms of how they integrate sustainability considerations.

3.3. Roadshows and meetings for institutional stakeholders

The 2016 Annual Integrated Report was submitted to the GRI Review, and the feedback was used to improve the content and presentation of the report.

Seeking high ratings in Stakeholders speak - sustainability Investors

Suppliers

Engagement with suppliers is directly managed at the GBU level.

Supply chain Stakeholders speak management Suppliers

Local communities

Engagement with local communities is managed at site level. Every site has a local impact, and that impact can be positive (providing work or internships, for example) or negative (annoyances caused by product transportation). This is why developing and steering relationship with local stakeholders is part of the Solvay Way framework. It is key to building trust with the communities in which sites operate.

Stakeholders speak – Local communities

(Solvay Local Advisory Board (LAB): community interaction in Spinetta

Solvay LAB is a listening and discussion program formed with members of the local community in Spinetta Marengo in the province of Alessandria (Italy), where Solvay has a chemical plant. The program consists of regular meetings between a local residents' group and the Solvay plant managers, facilitated by a professional. The LAB meets every three months to discuss mutual concerns and safety and environmental issues. The site has the unique opportunity to learn first-hand the needs and concerns of the local community. Conversely, the community has a direct channel of communication with site personnel. They can propose topics to discuss, ask questions, and access information directly from the right people.

3.3.1. Membership of associations

Solvay is committed to maintaining a dialogue with stakeholders and is a member of several associations at the global, regional and national levels. Trade associations adopt diluted policy positions in order to get close to a consensus (i.e. very often the lowest common denominator), but member companies can still express disagreement in a number of ways, including internal discussion within working groups or public stances that differ from those of the trade associations.



Solvay participates in working groups and policy coordination groups. Solvay senior representatives sit on the steering boards of many of those associations. The list of major association memberships in the regions and countries where Solvay is present are as follows:

International Council of Chemical Associations (ICCA)

Solvay is an active member of the ICCA. Solvay CEO Jean-Pierre Clamadieu is a Member of the Board of Directors and the Global Executive Strategy Group (GESG), and is also a Sponsor of the Responsible Care Leadership Group (RCLG). Responsible Care is an essential part of ICCA's contribution to the Strategic Approach to International Chemicals Management (SAICM). Through Responsible Care, global chemical manufacturers commit to pursue an ethic of safe chemicals management and performance excellence worldwide.

Business Europe

BusinessEurope is the leading European business trade association whose direct members are national business federations. Selected companies may participate in BusinessEurope as an advisory and support group. BusinessEurope and its members campaign for the issues that most influence the business performance and growth of European companies, in Europe and globally. Within this framework, Solvay provides its input through its participation in working groups dealing with energy, environment, and research, as well as trade policy.

European Round Table of Industrialists (ERT)

The European Round Table of Industrialists (ERT) is a forum that brings together around 50 CEOs of European companies. Among its activities, the ERT advocates policies to improve European competitiveness, growth and employment. In particular, Solvay actively participates in the working groups dealing with energy, trade, competitiveness, social, and finance, as well as with competition policies. Jean-Pierre Clamadieu chairs the Societal Changes Working Group, which focused mainly on aspects related to European Union labor force and education issues (e.g. youth unemployment, skills gap, labor mobility, and women in leadership positions). In particular, on youth employability, Jean-Pierre Clamadieu has taken a lead role in the Pact for Youth and serves as the spokesman on behalf of ERT members.

World Business Council for Sustainable Development (WBCSD)

WBCSD is a CEO-led not-for-profit aiming at elevating sustainability standards in business. Solvay has been an active member for many years, and Solvay CEO Jean Pierre Clamadieu has been personally involved, serving as vice-chair of the WBCSD Executive Committee. Solvay has taken even more active role in the following projects:

- Actions toward a circular economy: Factor10 is WBCSD's circular economy initiative. It brings companies together to reinvent how business finds, uses and disposes of the resources and materials that make up global trade. It aims at bridging the gap between theory and practice to help companies identify and remove the barriers that exist, and will create scalable solutions. By collaborating on solutions that go beyond business as usual, Factor10 strives to deliver high-impact, large-scale results where resources are used wisely, processes create the greatest possible value, and nothing is wasted.
- Actions for sustainable food: FReSH (Food Reform for Sustainable and Healthy Food) is the WBCSD platform working to achieve the transition to a sustainable and healthy food system. In cooperation with science, academia, policy-makers, and civil society, FReSH catalyzes change across food systems by developing guidelines on healthy and sustainable diets, food production, and formulation, among others. Three Global Business Units are directly involved.
- Chemical roadmap for the highest impact on the Sustainable Development Goals (SDGs): the Better Business, Better World report from the Business and Sustainable Development Commission set the foundations for businesses to define their contribution to delivering on SDGs. Solvay and other chemical companies in the WBCSD will identify the SDGs for which chemical companies can be expected to make the biggest impact on delivery.

European Chemical Industry Council (Cefic)

Cefic is the forum and the voice of the chemical industry in Europe and facilitates dialogue that allows the industry to share its technical expertise with both policymakers and various stakeholders. Solvay experts provide input on energy, industrial, environmental, and research policy, as well as product stewardship-related issues. Representatives of the businesses work with the different Cefic sector groups on specific issues related to individual substances or groups of substances.

American Chemistry Council (ACC)

The American Chemistry Council is America's oldest trade association of its kind, and represents companies engaged in the business of chemistry. Solvay sits on the Board of Directors and several Board-level committees that contribute to setting the association's strategy, and Solvay representatives contribute their expertise to the ACC's work on transportation, energy, the environment, sustainability, process safety, and product

stewardship issues. Solvay's experts also provide their technical input to activities, focusing on product-related issues which are relevant for Solvay's businesses, e.g. plastics.

Brazilian Chemical Industry Association (ABIQUIM)

Together with ABIQUIM and its members, Solvay helps make Brazil's chemical industries more competitive and sustainable. Solvay participates in the board of directors and all of ABIQUIM's

key commissions and supported activities, covering topics such as the Chemical Industry Parliamentary Coalition, Responsible Care Management, energy and climate change, product stewardship (e.g. Industrial Chemicals Regulation, Globally Harmonized System implementation), community dialogue, labor, foreign trade, logistics and supply chain, and innovation (e.g. the ABIQUIM Seminar on Technology and Innovation).

4. BUSINESS MODEL AND INNOVATION

This chapter addresses the impact that environmental and social factors have on innovation and business models. It examines the way environmental and social factors are integrated into the Group's value creation processes. Those processes include resource efficiency and other innovations in the production process, product innovation, and finding ways to design, use, and dispose of products efficiently and responsibly.

4.1. Sustainable business solutions





A sustainable Solution, as defined by the Solvay Sustainable Portfolio Management (SPM) tool, is a product in a given application which brings higher sustainable value. The product must demonstrate a lower environmental impact in its production phase, while also making a better social and environmental contribution along the entire value chain.

Indicators and objectives

Within Solvay, Global Business Units (GBUs) are accountable for delivering the ambitious Group target for sustainable business performance: by 2025, realize €1 of revenue out of every €2 in Sustainable Solutions.

★ SOLVAY'S PRIORITY OBJECTIVE:

2018 mid-term

40%

Baseline 2014

of the Group sales in sustainable Solutions

2025

50%

of the Group sales in sustainable Solutions

Revenue breakdown by SPM heat map categories

% of turnover	2017	2016	2015
Solutions	49	43	33
Neutral	31	33	39
Challenges	8	8	16
Not evaluated	12	16	12

Solutions: To be considered a part of the "Solutions", products must serve in an application that demonstrates a direct, significant, and measurable benefit (social or environmental) to society at large. They must not exhibit any sustainability concerns and must have a low environmental manufacturing footprint compared to the value they bring to society.

Neutral: No sustainability impact, positive or negative, identified.

Challenges: A sustainability roadblock is identified, or the environmental manufacturing footprint is too high.

By the end of 2017, 49% of the turnover in the assessed portolio of product-application combinations is qualified as "Solutions", a significant improvement compared with the previous year. This improvement comprises:

- seven percentage points due to changes in scope (Technology Solutions SPM assessment completion, Polyamides and Intermediates divestment):
- minus one percentage point from the erosion of Solutions from the existing portfolio.

We readily acknowledge that most of the significant progress towards reaching the 50% Group revenue in Solutions comes from Solvay portfolio changes, whereas the existing portfolio is experiencing slight erosion. This demonstrates the challenges we still face in reaching the 50% target in Solutions through other business levers (organic growth, R&I, capital expenditure, etc.).

The SPM systematic portfolio assessment is aligned with the financial perimeter of the Group. Changes in scope during the year, as reported by the financial reporting, are reflected in the scope of SPM. The 2017 portfolio assessment is based on 2016 sales

Correlation between SPM analysis and sales growth

SPM is designed to boost Solvay's business performance and deliver higher growth. Over the last three years, Solvay's products have experienced significantly different annual revenue growth rates depending on whether customers and consumers are seeking out Solvay's products to match their unmet social or environmental needs.

Volume annual growth rate per SPM category:

- Solutions: +3%
- Challenges: -2%

(based on sales with the same product, same application, and same SPM ranking over the last three years representing 44% of Group sales, out of which two-thirds came from volume growth).

External validation

200 PAC*
reviewed in 2017

* Product Application Combination

Since 2009, Arthur D. Little (ADL), our partner in developing and improving the SPM methodology, has performed in-depth verification of the Market Alignment results. In 2017, ADL screened every Product Application Combination (PAC) in the database and selected 150 PACs for deeper review: 75 with higher value for Solvay based on multiple criteria, and 75 on a random basis. In addition, Solvay submits 50 PACs per year to ADL for review. All the PACs in the database will be reviewed at least every five years. By the end of 2017, ADL had reviewed 200 PACs.

96%

Agreement rate

Discussions with Arthur D. Little reveal that we reach the same conclusion for 192 PACs out of the sample of 200, representing an "agreement rate" of 96%. For two PACs (1%), Arthur D. Little reached a better conclusion than Solvay, representing sales of €56 million. For six PACs (3%), Arthur D. Little reached a more negative conclusion than Solvay. By extending the analysis to similar PACs, the sales amount to €190 million. A further materiality analysis on the markets signals is going on and the results will be subject by a third-party review. In the meantime the conclusions from Solvay prevail.

4.1.1. Research and innovation

Resource scarcity, the fight against climate change, soaring consumption in high-growth parts of the world, and new demands for environmental care, health and well-being are the megatrends that influence the main themes of Solvay R&I.

80% Of R&I expected revenue in Sustainable Solution € 325 R&I efforts **2,100**R&I staff

284 Patents 18% New sales ratio

Definition

Research and Innovation (R&I) policy strongly supports Solvay's ambition to grow profitably while reducing its environmental footprint and increasing the proportion of its revenue that meets the challenges of sustainable development. Global Business Units (GBUs) and Functions are working together in a crossfunctional approach to provide customers with significant added value through innovative and competitive solutions tailored to the present and future needs of end-users.

Management approach Innovation levers driving Solvay Research and Innovation efforts

- A process of innovation excellence to improve efficiency and shorten time to market: this process was launched in 2014 and has been rolled out in all GBUs throughout the Group; it covers all aspects of the innovation process, from ideation and market validation all the way to scale-up and intellectual property protection.
- An extended network of open innovation through partnerships with academics and key market players to maximize efficiency and tap into the creativity and competencies of the outside world.
- Investments in start-ups and venture capital funds that allow Solvay to develop partnerships for accelerating developments in strategic areas.

The Group has also dedicated 17% of its total R&I efforts to corporate activities, with the clear intention to maintain a healthy portfolio of adjacent and breakthrough projects aimed at either building know-how and competencies in emerging technologies or at developing diversification and new business development opportunities through breakthrough innovations.

Six major scientific areas

The Group's breakthrough innovation projects have a typical time frame of four to seven years and can be grouped into six major scientific areas:

- New supramolecular materials: a new class of materials with the potential to overcome the traditional technical tradeoffs. We will first concentrate on supramolecular polymers, building on key properties of Solvay's unique and broad portfolio of polymers, in order to create a new class of sustainable properties enabling recycling, self-healing, etc;
- Surface modification: within surface technologies, our first focus will be on anti-deposit solutions addressing key unmet needs in market applications, for example where cleaning might be an issue, affecting the yield of the devices, while avoiding the use of cleaning agents or hazardous chemicals;

- Electro-active hybrid formulations: we intend to enter the new world of hybrid formulations, focusing first on piezoelectric hybrid materials formulations that could find applications in sustainable electricity generation a direct link to clean technologies;
- **Functionalized biomolecules**: the aim is to develop special chemicals from bio-based products enabling Solvay growth engines to bring new solutions with a minimal environmental footprint to our customers in their markets;
- Sulfide chemistry: we want to lead the new chemistry based on sulfur, which has not yet been investigated, where we see huge potential, and which could bring value to sustainable energy and electronic applications;
- **Breakthrough processes**: we intend to invent breakthrough process technologies aiming at drastically minimizing our plants' environmental footprint, safety impact, and capital expenditure intensity.

A new GBU-driven program

Alongside the implementation of growth initiatives and breakthrough innovation, Corporate Research & Innovation has established the "GBU-Driven" program, which contributes to the diversification of GBU portfolios (adjacent innovation). It brings additional skills and resources to GBUs to boost their innovations. Corporate R&I and the GBUs concerned are financing the portfolio of projects in progress at a rate of 50% each. These projects are aimed at deploying new technology in an existing market, or adapting an existing technology to a new market. They are expected to generate short-term sales (two to five years), hence their importance for GBU and R&I.

This portfolio of projects offers a good balance in terms of market/technology risks and time horizons. It opens potential opportunities for developing new activities, while also positively impacting several major growth GBUs. This process is combined with Marketing Excellence initiatives, aiming at promoting technology solutions or detecting unmet market needs, expanding the impact beyond GBU roadmaps.

There are different programs ranging from immediate support to core GBU innovation, collaboration on adjacent innovations (GBU-driven), and investment on breakthrough innovations (Growth initiatives), which also smoothes the way for innovative ideas to become marketed solutions, since those programs are connected.

Sustainable innovation highlights

Here is a selection of new accomplishments that took place in 2017, confirming GBUs' ability to deliver on innovation:

Solvay boosts European natural vanillin capacity, introduces new products, and upgrades research and innovation platform

With increased manufacturing capacity (60 metric tons) and its new product, Rhovanil® Natural CW, Solvay is meeting the long-term growth expectations associated with natural food and beverage ingredients and reinforcing its position as the reference for natural vanillin. Derived using a proprietary process from non-GMO rice, Rhovanil® Natural CW meets the growing demand of one-on-one natural vanillin substitutes for synthetic vanillin across all food segments. Furthermore, it also launched another natural solution that effectively masks properties of whey and pea protein aftertastes. This functional requirement has also become instrumental in growing nutrition, health, and wellness mainstream applications.

Solvay Dental 360™ polymer means more comfortable dentures

Building on its high-performance polymers, Solvay is entering into medical devices with a new dental care business line. Solvay Dental 360™ uses an innovative material to replace metal in removable partial denture frames, and the offering includes a digital workflow that accelerates the work of dental laboratories and dentists. For patients, it means dentures that are more comfortable and natural looking than those with traditional metal frames.

SolvaLite™: a range of thermoset composites for lighter vehicles

Solvay has developed SolvaLite™, a range of thermoset composites for the automobile industry. SolvaLite™ 730, formulated with Reichhold Advalite™ resins, meets car manufacturers' requirements by allowing design freedom, offering exceptional mechanical properties, and enabling the use of automated processes while reducing weight by 40% compared with metals. Reichhold was a key partner in developing this innovative chemistry, which supports Solvay's unique approach to producing serial automotive composite structures.

KetaSpire® PEEK, a polymer to aid prototyping

3D printing, a process that produces three dimensional objects, is now widely used as a means of generating fast and inexpensive prototypes in many industries, notably the automobile and aerospace sectors. Solvay's KetaSpire® PEEK offers an excellent combination of mechanical and chemical resistance even at continuous-use temperatures of up to 240°C. It inherently possesses excellent insulation and electric resistance properties as well as low moisture and flame retardancy. Leveraging these outstanding properties for 3D printing opens up incredible opportunities for tomorrow's light-weighting applications.

Open innovation

At Solvay, we care about working together with our customers, with academia, and with other companies or startups in order to leverage multiple sources of ideas to identify the best possible solution to a problem. Overall, we currently manage more than 100 collaborative innovation projects.

The ultimate aim of Open Innovation is to provide the Group with the best skills and technologies currently available in partners' specialist areas so that it can satisfy and anticipate the needs of customers and the market.

Research and innovation collaboration Solvay continued to develop collaborative innovation in

Collaborative innovation boosts developments with new ideas and perspectives, as well as different competencies.

In Europe, Solvay is fully involved in Horizon 2020, the current framework collaborative program to foster more research and innovation, aimed at competitiveness and economic growth. Solvay is engaged in several Public-Private Projects. The Consens project is developing flexible and intensified manufacturing processes, and the Style project is preparing a sustainability toolkit for easy life cycle evaluation.

In Belgium, Solvay fosters collaboration within the Belgian R&I ecosystem through its solid presence and contributions to the BiR&D organization, tight links with the Innoviris support institute, and project proposals to the Essenscia science and industry federation and to Catalisti, the Flemish cluster for chemistry.

In France, Solvay is a strong actor in collaborative ecosystems that are catalyzing innovation projects with partners: customers, suppliers, academia, etc. Connections to other Rhône Chemical Valley players, the Axelera cluster, and Axel'One platforms bring multiple opportunities for joint efforts to speed up Solvay's own R&D programs. During the European Polymer Federation Congress, the largest polymers conference in Europe, where topnotch international scientists and Nobel Prize winners gather in Lyon, Solvay R&I teams organized a Forum on Industrial Polymers' Future with customers and academic partners.

In Asia, Solvay develops scientific collaborations with local universities. At Shanghai university, the focus is on theoretical research work for selective oxidation and amination reactions. At Beijing university, the effort is exploring deep applications of the HiGee advanced oxidation process. Process safety evaluations are being studied at Nanjing university.

In 2017, Solvay's Shanghai research center hosted a large conference to promote innovation and green chemistry for sustainable development in China. The conference theme of Effective Catalysis is a key driver for sustainable chemistry.

Networking with universities and research institutes is growing in Korea and supports Solvay's R&D growth initiatives by exploring potential application fields at the universities of UNIST, KAIST, KIST, KRISS, Seogang and Yonsei.

In North America, Solvay hosted a meeting at Stanford University to kick off its engagement with Energy 3.0, the Institute of Energy's industrial affiliate program. Solvay's membership connects to a broad range of topics related to energy – including batteries, materials science, data analytics and solar energy, which are directly in line with Solvay's internal competencies and breakthrough projects.

Solvay also creates partnerships and collaborations by investing in start-ups. Recent investments include two American companies: Multimechanics, a software company based in Nebraska that has developed a simulation solution for advanced materials, and Nohms Technologies in New York state, which works on next generation lithium-ion batteries.

Solvay and Suez join forces in water treatment for industry in China

Solvay and Suez will combine their expertise and technologies to provide innovative industrial effluent treatment solutions based on Advanced Oxidation Processes (AOP). These technologies are effective on a broader spectrum of molecules and are both sustainable and environmentally friendly, as they neither transfer pollutants from one phase to the other nor produce large amounts of hazardous sludge. This Alliance is delivering a tailormade treatment models to meet the demands of each industrial player, ranging from process design and installation to the supply of full-treatment services.

Solvay partners with the World Alliance for Efficient Solutions

Solvay has joined the World Alliance for Efficient Solutions, created by Solar Impulse founder Bertrand Piccard, to promote efficient technologies, processes, and systems that help improve the quality of life on Earth. The Alliance members consist of startups, companies, and institutions who aim to demonstrate how collaboration and open innovation, based on shared convictions, will turn visions into daily applications by focusing on energy, mobility, water treatment, etc. As a chemical company with experience, capacity and success in industrialization, as well as access to customers, Solvay plays a crucial role in transforming ideas and projects into reality.

Venture capital and start-up Direct Investment

In 2017, Solvay's corporate venturing team closed two early stage investments:

- MultiMechanics, Inc. develops software systems for modelling complex materials and predicting failure. Better design tools help composite materials penetrate new markets where lightweighting enables lower energy consumption, such as transportation.
- Autonomic Materials, Inc. commercializes environmentally responsive self-healing additive technologies for highperformance coatings and adhesives. Better corrosion protection extends the life of infrastructures.

As part of its decision-making process, Solvay Ventures is using the Sustainable Portfolio Management (SPM) tool to assess potential investment cases.

Fund-of-Funds

Since its inception, Solvay Ventures has joined a total of 11 specialized venture funds, which have assembled portfolios totalling 117 start-ups. Forty three of these companies are developing sustainable energy technologies (generation, storage, efficiency); 12 are working on bio-based chemicals and 12 others are dedicated to solving health-related issues.

For example, in 2017:

- The Belgian Innovation Fund invested in Allerinvest / Acar'up, (biocontrol agent for house dust mites) and Blue Foot Membranes (membrane bioreactors for water treatment);
- Phoenix Venture Partners (US) invested in Broadspot Imaging Corp. (imaging devices for eye care) and in Tactus (protective film for writing enabled devices);
- Avantium, a portfolio company of our partner funds Aster Capital and Capricorn Cleantech, went public on the Amsterdam stock exchange. Avantium develops the biosourced polymer PEF for packaging applications, enabling customers to commercialize "green" bottles.

Partnerships

Besides investment, Solvay Ventures' mission is to intensify business collaborations with start-ups to create mutual strategic value. A recent example is the collaboration between Multimechanics and Solvay's Composite Materials business unit. Proof-of-concept trials have also been launched with start-up companies in various areas (agricultural bio-stimulants, new battery materials, encapsulation technology).

Examples of the Approach in 2017

Activity	Comment		
Fund-of-Funds	In 2017 our partner funds deployed an aggregate amount of capital of \$25m in start-up companies developing sustainable technologies		
Partnership in composite modelling	Developers using the MultiMechanics modelling platform can accelerate the design of new composite parts by 50% compared with conventional practice. The partnership provides a competitive advantage to our composite materials business unit		
Partnership in advanced coatings	By partnering with a start-up developing an advanced coatings technology, Solvay Specialty Polymers has accelerated a development project by an estimated 18-24 months		
Partnership in encapsulation technology	Collaboration with a start-up specialized in advanced encapsulation technology enabled Solvay Specialty Polymers to reduce its project duration by 12 months		

Community

The Solvay Ventures team maintains a strong involvement in the cleantech community by participating as panelists or jury members in venture events such as the Cleantech Group meetings, the Nordic Venture Forum, Cleantech Capital Day, etc. It is worth noting that in 2017, our group sponsored the Hello Tomorrow event in Paris and hosted a session dedicated to sustainable materials.

Solvay co-invests \$1.9 million in MultiMechanics to speed up innovation in new materials

Multimechanics, a software company based in Omaha (Nebraska), has developed a simulation solution for advanced materials. This software allows for more freedom in designing parts, making it possible to adopt new materials such as composites. The decision to invest in MultiMechanics is part of the Group's ambition to accelerate innovation in complex materials and to expand the use of composites and high performance polymers in the automotive and aerospace industries.

Solvay co-invests in a \$3 million round in Autonomic Materials Inc. offering advanced coating technologies

Located in Champaign (Illinois), Autonomic Materials Inc. is the world leader in self-healing technology for high-performance coatings, adhesives, and sealants. Developing new advanced materials with increased performance such as 'smart' coatings is one of the main areas of Group R&I. Autonomic Materials Inc.'s innovative products extend long-term coating performance by imparting extreme corrosion resistance, maintained adhesion, and extended service life after damage in a wide range of applications, from high-performance systems for Oil & Gas and industrial maintenance to consumer applications. The self-healing coatings enabled by AMI's technology provide customers with both improved performance and a more sustainable solution.

Digital: Solvay partner of the 'Plant 4.0' start-up incubator

Solvay has joined the "Plant 4.0" startup incubator launched by Total in 2016. It is the first global startup incubator that brings together several international manufacturers around 'Plant 4.0'. The main goal is to accelerate the deployment of digital technology in industry. This open innovation approach aims to identify the start-ups that offer practical, relatively mature

industrial solutions in the IOT field to meet specialized operational requirements. The challenge is to take advantage of the information flow generated by connected objects, like sensors. For example, we could optimize operational performance, and reduce energy consumption and environmental footprint. These start-up companies can test their technology, product, or service directly with potential customers, while benefiting from the expertise of Solvay and other industrial partners, as well as their start-up ecosystem.

Acquisitions

Some examples of acquisitions made in 2017 that will further broaden Solvay's innovation:

Solvay acquires Energain™ Technology from DuPont and extends its advanced Li-lon batteries offer

With the acquisition of the EnergainTM technology and formulations from Dupont, Solvay has gained new Open Innovation methods by enlarging its existing portfolio of high performance salts and additives for electrolytes and strengthening its capabilities to develop further innovative high-voltage solutions for Li-Ion batteries. The power and durability of Li-Ion batteries determine the efficiency and reliability of eco-friendly transportation, for instance. Achieving high energy at an affordable cost, without compromising safety, is a key objective of the Li-Ion battery industry. Energain™ technology allows Solvay to offer new solutions to its partners so they can reach their high voltage goals.

Solvay acquires large-tow carbon fiber precursor manufacturer

With the acquisition of European Carbon Fiber GmbH ("ECF"), a German producer of high-quality precursors for large-tow (50K) polyacrylonitrile (PAN) carbon fibers, Solvay aims to lead the adoption of composites in automotive applications, in addition to serving select industrial markets and supporting the potential adoption of large-tow fibers in aerospace. Today, companies are looking to use materials that are lighter in weight and, therefore, more fuel efficient. Adopting carbon fiber-based composite materials in parts manufacture is one way companies are trying to meet their sustainability goals and comply with government-imposed requirements. Thanks to this acquisition, Solvay is leveraging its polymers and materials science competencies to drive breakthrough innovation in large-tow carbon fibers.

Research and Innovation indicators

Innovation expenditure - breakdown by purpose

In %	2017	2016	2015
Growth	70	75	60
Competitiveness	16	13	21
Defense	14	12	19

Scope: Consistent with financial reporting.

Legend: R&I effort includes the current year investment in R&I activities of the group, whether they are capitalized or not. It is before deduction of subsidies and R&I tax credits and does not include investments in start-up companies. see note B13

Research and innovation efforts amounted to €325 million in 2017, very stable compared to last year (€323m restated in 2016, in line with the new perimeter). The global expenditure analysis clearly underlines that innovation projects are generally focused on growth globally, at 70% of total efforts.

Some 83% of the Group's R&I investments are directly managed by GBUs.

The R&I intensity, i.e. the ratio of research and innovation efforts to net sales, reached 3.2%.

Innovation expenditure - breakdown by nature of activities

In %	2017	2016
Innovation Project pipeline	49	50
Opportunity Bank – Proof of concept	24	28
Customer Support	15	12
Plant Support	12	10

Scope: Consistent with financial reporting.

To anticipate the future, the Group has made a major investment of €78 million (24% of the total R&I effort) to develop formalized ideas into new innovation project opportunities. This is done by using a bank of opportunities to validate the proof of concept before feeding through to the innovation project pipeline.

The innovation project pipeline, which constitutes the bulk of the research effort (about 50%), allows Solvay to develop through innovative and environmentally friendly products.

Research & Innovation staff

Headcount	2017	2016
Employees include research engineers and scientists, technicians, laboratory and pilot operators, and		
employees dedicated to R&I facility management and R&I support	2,100	2,340

Scope: Consistent with financial reporting.

The decrease in staff largely corresponds to the sale of the Polyamides business. Otherwise, the research staff remained stable within Solvay. Throughout the Group, about 2,100 people work in R&I. Solvay's major R&I centers are located in Europe, Asia, North America, and Latin America. While maintaining a significant geographical diversity, Solvay ensures the development of high-performance, specialized laboratories that give its research a major advantage.

Intellectual Property agreements

	2017	2016
Intellectual Property (IP) agreements & cooperation agreements	1,660	1,300

Scope: Consistent with financial reporting.

Solvay has a substantial number of agreements, highlighting the openness of its innovation strategy. As Solvay's approach to managing co-development projects with partners has matured, it has signed a large number of NDA-type agreements aligned with GBU and Corporate efforts.

Innovation output - Patents

	2017	2016
First Patent Filings	284	240

Scope: Consistent with financial reporting.

The Intellectual Property strategy is leveraged through strong partnerships between the Intellectual Assets Management Function and both the GBUs and the R&I function. The number of patent applications it has filed confirms the Group's strong trend towards patented innovations.

New sales ratios

In %	2017	2016
New sales ratio	18	15

Scope: Consistent with financial reporting.

The new sales ratio includes two components:

- · newly commercialized products, services or applications, and
- significantly improved products or services that provide a new usage value for the customer.

The new sales ratio is calculated by adding together the current annual sales of these two components (created less than five years ago) and dividing by total annual sales.

This ratio increased in every segment in 2017. The ratio for the Solvay group is 18% (15% in 2016). The "Advanced Materials" segment posted the highest score in this field (25%).

R&I expected revenue breakdown by SPM heat map categories

Percentage of net sales	2017
Solutions	80
Neutral	20
Challenges	0

Scope: Consistent with financial reporting.

R&I expected revenue are those expected in 2020.

The innovation pipeline is a key element in achieving the 2025 target of realizing 50% of Solvay's revenues from sustainable solutions. To make sure the innovation projects we are working on are the right ones, Solvay teams have adapted the "Sustainable Portfolio Management" (SPM) methodology for assessing Research & Innovation projects. 100% of R&I projects are analyzed every time a project moves into a new phase, i.e.

passes a gate; a full SPM analysis is applied to the future product and the data is stored in database. Several examples of these sustainable innovations are presented in this section.

In 2017, 80% of expected revenues from the innovation project pipeline come from sustainable solutions. The other 20% are neutral.

4.1.2. Health and environmental impacts of products









As a chemical company, Solvay sells products that are usually only a part of the final product. Many actors along the product value chain play roles in transporting, storing, using, and disposing of chemicals in a manner that is safe for both people and the environment.

92%

of products portfolio covered by LCAs

Life Cycle Assessments (LCAs)

Solvay has made a strong commitment to conduct environmental assessments based on LCA methodologies. Standardized LCAs supply a reliable, unbiased image of a product's environmental footprint. Solvay applies LCA methodologies according to international standards: ISO 14040, ISO 14044 and ISO 14046 norms.

Understanding these impacts is key to improving and communicating about Solvay's products. These cradle-to-gate LCAs feed Solvay's portfolio sustainability assessment, performed using the Sustainable Portfolio Management (SPM) tool. LCAs are used extensively to quantify the environmental footprint criteria of the SPM tool.

100%

of new R&I projects assessed for environmental impacts

To support the LCA process, Solvay relies on a strong internal team of experts to develop Life Cycle Thinking methodology and set up tools for delivering all types of LCAs, from light screenings up to a full LCA for a complex product or service. These full studies are usually certified by an authoritative body for their adherence to the ISO Standard and for the quality of their results.

Extensive cradle-to-gate Life Cycle Assessments (LCAs) are established for 92% of products (by turnover share) placed on the market, compared to 88% last year. This improvement is due to the redesign of the product portfolio (sale of the polyamide business), and also to a better business portfolio segmentation, leading to the calculation of new eco profiles and LCAs.

Products with a cradle-to-gate LCA

% of turnover	2017	2016	2015
Products with a cradle-to-gate LCA	92	88	94

Full Life Cycle Assessments for customers

The Group performs extensive, customized ad hoc studies (full environmental impacts, cradle-to-grave) for and with customers, and submits them to peer review. For example, Solvay has completed a calculation of the environmental and social footprint of Guar cultivation in India.

Assessing the Research and Innovation portfolio

Solvay assesses 100% of new research & development projects for environmental impacts. It uses an enriched version of the SPM assessment tool that was specifically designed for products and applications still under development, and that benefits from the experience gained during several years of innovation project management.

Assessing R&I projects helps to design the research portfolio with respect to both environmental impacts at the manufacturing stages and helps align the project with sustainability megatrends in the market. Performing LCAs for R&I Projects is also a key tool for designing new products and new processes with less environmental impact and more sustainable characteristics, which are the leading themes of the Eco-Design approach.

Taking part in world class LCA platforms

To maintain a high level of expertise, Solvay participates in collaborative platforms:

- High level research on LCA methodologies: Ciraig (LCA expertise center Polytechnique, Montréal, Canada, supporting the "International Chair on LCA") coordinated the five-year program that ran from 2012-2017 with 13 industry partners; the new 2017-2022 multi-partner program is now starting;
- Association Chimie du Végétal in France on bio-sourced materials:
- The SCORE LCA platform: created in March 2012 to promote collaboration between industrial, institutional and scientific actors; and to foster positive developments in overall environmental quantification methods, particularly the life cycle assessment (LCA), to be shared and recognized at the European and international level;
- World Business Council for Sustainable Development (WBCSD) LCA projects;

 Active participation and session chairing during the "LCM 2017" international conference on Life Cycle Management.

Establishing international LCA guidance on avoided greenhouse gas emissions

As an active member of the International Council of Chemical Associations (ICCA), Solvay coordinates a trans-company task force focused on the quantification of avoidance of greenhouse gases (GHG) enabled by chemical products during their lifecycle.

After previous case studies on vehicle lightweighting by replacing metal parts with engineered plastics, Solvay has completed a new study, together with Asahi Glass Europe, on emissions avoided by the use of soda ash in the glass industry.

Double-glazed windows in buildings: contribution of sodium carbonate in avoiding greenhouse gas emissions

The contribution of sodium carbonate is "extensive" according to the ICCAVWBCSD guidance, because this chemical is an indispensable raw material when making glass. For every $\rm m^2$ of double glazing, sodium carbonate is estimated to be responsible for 19% (441 kg CO₂) of the total avoided emissions thanks to double glazing (2,322 kg CO₂), assuming a mass allocation, and excluding the effect of the low-e coating (1,092 kg CO₂).

On the basis of the selected assumptions (presented in the full study), sodium carbonate can be estimated to contribute 90 kg $\rm CO_2$ avoided for every kg emitted during its manufacturing for this market.

Quantifying toxic impacts throughout product life cycles

In 2016, at BASF's invitation, Solvay and six other stakeholders established a consortium (BASF, Covestro, Deutsche Bauchemie, DSM, IVL, and Kingspan) to develop a method to quantify the overall toxic impact of a product throughout its life cycle. The quantification will combine the LCA life cycle approach with quantifiers for products' health hazards (toxic properties of the product) and for risk (exposures).

Such an assessment is intended to be used, along with additional information on toxicity impact as measured via a conventional Life Cycle Assessment (LCA), in the context of Environmental Product Declaration (EPD) and Product Environmental Footprint data (PEF). The EU Commission has expressed interest in a potential PEF application.

The methodology and the tool of toxicity impact assessment, named ProScale, has been presented and proposed to a large panel of regulation prescriptors and industrials to promote the use of this new standard. Several practical cases are also presented for comparison of construction materials.

4.2. Product stewardship

Moderately material





Definition

Product stewardship means managing risks throughout the entire life cycle of a product, from the design stage to the end of life. Risks include the possibility of injury or health impact to third parties or damage to their property arising from the use of Solvay products resulting from inappropriate use in a customer's plant or application for which the products are not designed. Risk management is particularly key for products used in healthcare and food and feed applications.

Solvay currently places over 16,000 products on the market. The Group characterizes and manages risks related to the uses and applications of its products, and prioritizes mitigation actions relating to potential inappropriate use. Stewardship programs give adequate information and technical assistance to customers, ensuring a good understanding of safe use and handling.

Chemical product usage risk

Transport safety

Transport accident risk

Product stewardship management system

The Solvay product stewardship management system is used by all Global Business Units and includes the following requirements:

- regulatory compliance management;
- product safety management (composition and hazard information, intended uses and exposure, risk assessment, value chain communication, management of changes);
- · crisis management;
- requirements to establish long- and short-term improvement plans to continuously improve the existing management system.

The process ensures that health, safety, environment, regulatory, legal, supply chain, and commercial risks associated with a product's manufacture, distribution, and sale are identified, prioritized, reviewed, and managed. Solvay's Product Stewardship Management System has been updated to consider new regulatory requirements and additional potential risk causes.

The main achievement for 2017 is the prioritization of the necessary risk assessments in the GBUs' product portfolios and the more systematic deployment of risk assessments for the most sensitive product applications according to the GBUs' planning.

Chemical product usage risk

Information and labels for hazardous substances: extended rules

Solvay centrally manages product safety information for all hazardous substances. This is key to ensuring their adequate management both in Solvay operations and along value chains. The following management elements have been reinforced in the last two years, including for the recently acquired Technology Solutions:

- consistent regulatory data, toxicological and ecotoxicological data, and phrases library;
- standardized Safety Data Sheets, using shared rules and models across the Group;
- global approach for around 300 substances of very high concern in products and raw materials.



Waste and hazardous materials

Safety Data Sheets (SDS) authoring and distribution

293,000

Safety Data Sheets

Solvay Safety Data Sheets ensure harmonized content via a common worldwide SAP system for the Group. Control by SDS shipping allows confirmation that any product marketed by Solvay is accompanied by a compliant SDS. Solvay monitors the discrepancies registered during checks and manages failures due to shipping. The automatic Safety Data Sheet authoring and distribution systems (rules for classification, automatic distribution according to the countries of sale, Global Labeling Management, etc.) applies to all products in the Group.

Composite materials will be integrated during 2018.

Compliance with Europe's REACH regulation

In Europe, Solvay fully complies with the REACH agenda for product registrations. REACH is an advanced framework regulation that requires companies to have a good knowledge of substances through the collection and organization of reliable and systematic safety information, including uses and risks incurred along the value chain.

Since the framework's inception in 2010, Solvay has submitted 687 dossiers for registration, with a 100% success rate. Solvay is lead registrant for 262 substances. Based on the knowledge assembled in the context of REACH, Solvay has updated the Global Harmonized System classification of its products.

The third REACH registration phase is now ongoing, with 65% of dossiers accepted so far, and material progress on 84% of the 364 dossiers planned for 2018. The focus is on substances produced or imported in lower quantities. In addition, the Group submitted updated registration dossiers in 2017 as new information became available, or at the request of ECHA.

Solvay continues to pursue ongoing adaptation to emerging new product regulations in many other countries, in particular the adaptation necessary to cope with emerging (REACH-like) regulations in non-EU countries.

4.2.1. Transport safety

The main risk during the transport of products and materials for Solvay's operations is the risk of having a catastrophic off-site accident with potential impact on people, environment, and reputation.

Medium accidents

In 2017, the program to reinforce preventive actions initiated in the last two years has been pursued. These preventive actions, combined with reactive actions after accidents, and an efficient emergency response, have contributed to master the risk of a catastrophic accident during transport.

Management approach

Selection of logistics service providers for dangerous goods/hazardous materials

The global selection process for the transport of dangerous goods is a part of the Solvay's "Red Line" for the Supply Chain: "Only Solvay's approved logistics service providers, those listed in $\mathbf{0}$

High or Catastrophic accidents

the purchasing supplier list, may be used." The selection process for dangerous goods mainly addresses road transport, which is the predominant transport mode, and bulk sea transport.

• Road transport: Health, Safety and Environment qualification procedures have been adopted in each zone, relying on existing schemes, such as the Safety Quality Assessment System in Europe or the Road Safety Quality Assessment System in Asia Pacific/China.

- Bulk sea transport of dangerous products: Solvay has developed its own system for rating bulk sea transporters based on Chemical Distribution Institute reports. For dry products and container shipments, Solvay relies on the Port State Control system, avoiding ships that have been detained in the past three years.
- Barge transport: In the Europe, Middle East and Asia zone, Solvay also relies on the European Barge Inspection Scheme for inspecting chemical barges operating on inland waterways in Europe.

Transport Solvay Advisers (TSA) Network

An internal global network of qualified personnel in transport safety (Transport Solvay Advisers - TSA) is in place. The main missions of the TSA network are to verify that:

- All transportation activities, including loading and unloading operations, are in compliance with applicable regulations, industry standards, and company policies.
- The risk related to loading/unloading operations on Solvay sites is effectively identified, evaluated and managed.
- An efficient emergency response capability is in place in case an incident occurs during transportation of Solvay hazardous materials.

Solvay's internal global network of Transport Solvay Advisers (TSA) is submitted to an internal certification process based on nine macro-tasks related to transport safety.

For every macro-task, an e-learning training is available on Solvay's intranet. TSAs must follow all e-learning trainings and pass the tests.

Learning Lessons

For transport accidents reported at the Group level, transport safety bulletins are developed and distributed throughout the Group, in 15 languages. Additional topics are selected and prepared by Transport Safety experts for issues that are interesting and applicable to the majority of industrial sites. Every accident with severity C (catastrophic) or H (high severity) according to the Solvay reporting scale must be described and explained in a Transport Safety bulletin.

The lessons learnt from these bulletins help organizations take actions to prevent the same kind of accidents recurring elsewhere.

Indicators

Accidents during transport and distribution according to severity

	2017	2016
Medium	27	27
High	0	1
Catastrophic	0	0
Total	27	28

Reported transport accidents encompass accidents occurring all along the logistics chain, from the shipping site to the customer's site, or to the disposal site in the case of waste. The reported events are the incidents that occurred on Solvay premises or those that have been reported by transporters and third parties to Solvay.

Despite an equivalent number of M accidents between 2016 and 2017, the overall severity level has decreased, as neither a level C (catastrophic) nor a level H (high severity) accident was reported in 2017.

Emergency and preparedness

ENVIRONMENT 5.

This chapter covers the company's impact on the environment, either through the use of non-renewable natural resources as production inputs or through environmental externalities, including releasing harmful substances into the environment, such as air emissions, water and wastewater, effluent and waste, and greenhouse gas (GHG) emissions.

The Solvay Care Management System (SCMS) covers seven Health, Safety and Environment (HSE) domains: occupational safety, process safety, the environment, industrial hygiene, occupational health, product stewardship, and transport. The

system incorporates the requirements of the ISO 14001 standard (edition 2004), the OHSAS 18001 standard (edition 2007), and Solvay group HSE requirements.

52

sites certified OHSAS 18001

SCMS defines four maturity levels for each requirement, from the basic, mandatory level, to operational excellence. Level one corresponds to regulatory compliance. This management system is designed to help sites earn external certifications for their integrated management systems, and to help GBUs earn 76

sites certified ISO 14001

certification for their multi-site management systems. Decisions to apply for external certification are taken site by site, by the local management. 2017 was the first year that standard audits and SCMS audits were combined.

(\square) How Solvay sites control their environmental footprint, in a nutshell

While every industrial site is different, the Group's commitments remain the same:

- 1. reducing greenhouse gas intensity
- 2. reducing air and water emission intensity
- 3. performing regulatory compliance audits at all sites
- 4. consistent risk assessment of non-compliance throughout the Group
- 5. reducing the number of incidents with environmental non-compliance
- 6. following up more effectively on waste and water intakes.

5.1. Greenhouse gas emissions

















5.53 kg CO₂eq. / € EBITDA

Greenhouse gas intensity

Definition

The greenhouse gas emissions reported by Solvay correspond to the scope of the Kyoto Protocol and comprise the following compounds or compound families: CO2, N2O, CH4, SF6, HFCs, PFCs and NF₃. To calculate their impact on climate change, the greenhouse gas emissions are converted from metric tons to

$12.3 \text{ Mt CO}_2 \text{ eq.}$

Total greenhouse gas emissions – Scopes 1 & 2 (Kyoto Protocol)

the CO₂ equivalent using the Global Warming Potential (GWP) of each gas based on a 100-year timeframe, as published by the Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report.

The indicator takes into account:

- direct emissions for each greenhouse gas released from Solvay's industrial activities (Scope 1 of Kyoto Protocol);
 - For CO₂, the reporting of direct emissions, includes emissions from the combustion of all fossil fuels as well as process emissions (e.g. thermal decomposition of carbonated products and chemical reduction of metal ores). For renewable fuels, only the part of emissions related to cultivation and preparation is taken into account.
- indirect CO₂ emissions related to the steam and electricity purchased from third parties and consumed internally (Scope 2 of Kyoto Protocol). For electricity purchased, indirect emissions are calculated by applying market-based methods. In 2017, electricity supply contracts were analyzed in order to determine the most appropriate CO₂ emissions factor of each site.





Management approach

An externally verified and structured greenhouse gas emission reporting system and responses to rating agencies such as the Carbon Disclosure Project help the Group align its efforts on the effectiveness of its greenhouse gas challenges.

Indicators and objectives Greenhouse gas emissions intensity

In 2015, Solvay committed itself to reducing its greenhouse gas intensity by 40% from 2014 levels by 2025. The Group also set an intermediate target for 2018: to reduce greenhouse gas intensity by 20% in comparison with 2015. The group has reduced its greenhouse gas intensity by 32% since 2014.



2018

-20%

of greenhouse gas intensity in comparison with 2015

2025

-40%

of greenhouse gas intensity in comparison with 2014

kg CO ₂ eq. / € EBITDA	2017	2016	2015
Greenhouse gas intensity	5.53	5.86	7.26

Scope: Consistent with financial reporting.

For a given year, greenhouse gas emissions intensity reflects the amount of scope 1 & 2 emissions covered by the Kyoto Protocol included in the financial scope expressed in kg CO₂ equivalent per euro of EBITDA.

In 2017, greenhouse gas intensity decreased by 0.33 kg $\rm CO_2$ eq. per euro of EBITDA.

Greenhouse gas emissions

Greenhouse gas emissions (Scope 1 & 2)

		2017	2016	2015
Direct & indirect CO ₂ emissions (scopes 1 & 2)	Mt CO ₂	10.0	10.9	11.6
Other greenhouse gases emissions according to Kyoto protocole (scope 1)	Mt CO ₂ eq	2.3	2.4	2.6
Total greenhouse gases emissions according to Kyoto protocole	Mt CO ₂ eq	12.3	13.4	14.2
Other greenhouse gases CO ₂ emissions not according to Kyoto protocole				
(scope 1)	Mt CO ₂ eq	0.1	0.1	0.1

Scope: Consistent with financial reporting perimeter, including the manufacturing activities of the companies that are currently consolidated (fully or proportionately). The greenhouse gas emission of the companies in the financial perimeter represents 81% of the total greenhouse gas emissions of all companies in the operational perimeter.

In 2017, greenhouse gas emissions were 1.1 Mt CO_2 eq. lower than in 2016. This change is explained mainly by changes in the reporting scope. The classification of polyamide activities in

discontinued assets led to a decrease of 0.9 Mt $\rm CO_2$ eq. The rest of the variation (-0.2 Mt $\rm CO_2$ eq.) is explained in the following chapters.

Direct greenhouse gas emissions (Scope 1)

Mt CO ₂ equ.	2017	2016	2015
Methane – CH ₄	0.90	0.81	0.85
Nitrous oxide – N ₂ O	0.14	0.20	0.27
Sulfur hexafluoride – SF ₆	0.06	0.05	0.04
Hydro fluoro carbons – HFCs	0.14	0.05	0.05
Perfluorocarbons – PFCs	1.07	1.34	1.40
Nitrogen trifluoride – NF ₃	0.0	0.0	0.0
Total other Greenhouse gas emissions according to Kyoto Protocol	2.31	2.45	2.73
Carbon dioxide – CO ₂	7.92	8.43	8.76
Total direct emissions	10.2	10.9	11.5

Scope: Consistent with financial reporting.

In 2017 direct CO_2 emissions were 0.51 Mt CO_2 lower than in 2016. This change is attributable mainly to changes in the reporting scope. The classification in discontinued assets of polyamide activities that will be sold to BASF led to a decrease of 0.57 Mt CO_2 of direct CO_2 emissions. The inclusion in the reporting scope of activities recently acquired from Cytec and new production sites (e.g. Jubail in Saudi Arabia) accounted for an increase of 0.01 Mt CO_2 of direct CO_2 emissions. The rest of the variation (+ 0.05 Mt CO_2 eq.) is linked to emission savings projects and production changes.

In 2017 direct other greenhouse gas emissions according to Kyoto Protocole were 0.14 Mt CO_2 eq. lower than in 2016. The classification in discontinued assets of polyamide activities that will be sold to BASF led to a decrease of 0.13 Mt CO_2 eq. of direct other greenhouse gas emissions. Overall, variations in CH₄, PFCs, HFCs, SF₆, and N₂O emissions in 2017 relative to 2016 were mutually offsetting in the reporting scope.

Indirect greenhouse gas emissions - Gross market-based (Scope 2)

Mt CO ₂	2017	2016	2015
Electricity purchased for consumption	1.2	1.4	1.7
Steam purchased for consumption	0.9	1.1	1.1
Total	2.1	2.5	2.8

Scope: Consistent with financial reporting.

Implementation of the market-based method was revised in 2017 according to latest best practices with a view to enhancing its accuracy and reliability. A detailed review of emissions factors for purchased electricity covering all sites globally led to changes in several emissions factors, mainly in the United States of America. The result was a decrease of 0.1 Mt $\rm CO_2$ of indirect $\rm CO_2$ emissions linked to purchased electricity. The rest of the decrease is explained by the deconsolidation of polyamide activities (-0.1 Mt $\rm CO_2$).

The decrease of 0.2 Mt CO_2 of indirect CO_2 emissions linked to purchased steam is explained by the deconsolidation of polyamide activities (-0.1 Mt CO_2) and the partial internalization of steam production (-0.1 Mt CO_2) in Baton Rouge (USA) and in Rosignano (Italy).

Indirect greenhouse gas emissions - Gross location-based (Scope 2)

Mt CO ₂	2017	2016	2015
Electricity purchased for consumption	1.2	1.2	1.8
Steam purchased for consumption	0.9	1.1	1.1
Total	2.1	2.3	3.0

Scope: Consistent with financial reporting.

Other indirect greenhouse gas emissions (Scope 3)

Mt CO ₂	2017	2016	2015
Fuel- and energy-related activities	0.7	0.8	0.8
Investments	1.7	0.8	2.5
Purchased goods and services	6.6	7.2	7.6

Scope: Consistent with financial reporting.

The slight decrease in "Fuel- and energy-related activities" is linked to the reduction of energy purchases due to the classification in discontinued assets of polyamide activities.

"Investments" encompasses the scope 1 & 2 emissions of the discontinued activities: 1.6 Mt $\rm CO_2$ eq. for polyamide activities and 0.1 for Acetow activities.

2017 key achievements

 The SOLWATT© energy and carbon efficiency program has delivered 0.5 Mt of CO₂ emission reductions since 2014, with 1,000 actions deployed across 70 sites worldwide. New savings achieved in 2017 are estimated at 114,000 metric tons of CO₂.

- In the trona mine at Green River (Wyoming, USA), partial recovery of the methane emitted during the extraction and combustion of trona has avoided emissions equivalent to 100,000 metric tons of CO₂ eq. per year since 2011. Since 2012 some of the heat from combustion of the recovered methane has been used in the manufacturing process, bringing additional energy and CO₂ savings.
- Solvay has stepped up its involvement in renewable energy production with two new projects having an annual impact of 0.1 Mt CO₂: in 2017, biomass-based heat production started at a French plant, and the Solvay Jasper County Solar Farm is scheduled to start up in 2018 in the USA. It comes in addition to biomass-based energy production already in place in Brotas (Brazil) and Rheinberg (Germany).

5.2. Energy











130 PI

primary energy consumption

Definition

Solvay's energy consumption is made up of four components:

- non-renewable primary fuels (coal, petcoke, natural gas, fuel oil, etc.), which are used for internal production of steam, electricity, and mechanical energy, and in manufacturing processes (coke and anthracite in lime kiln, gas in dryers, etc.),
- · renewable primary fuels (biomass),
- · purchased steam,
- · purchased electricity.

To comply with GRI requirements, steam and electricity generated from fuels and sold to a third party are deducted from the total. Energy that is purchased and sold afterwards to a third party without any transformation is not accounted for.

Reporting practices

Management approach

In the field of energy supply, Solvay has consistently implemented programs to reduce its energy consumption for many years. While Solvay has industrial activities with high energy consumption, mainly in Europe (synthetic soda ash plants, peroxides), it also operates a range of industrial activities whose energy content is relatively low as a percentage of sales price, especially in the fluorinated polymers business. The Group considers secure and competitive energy supplies to be particularly important and has taken the following strategic initiatives:

 technological leadership in processes and high-performance industrial operations to minimize energy consumption;

100 PJ

Fuel consumption from non-renewable sources

- diversification and flexible use of the different types and sources of primary energy;
- upstream integration in steam and electricity generation (gas cogeneration, biomass or secondary fuels cogeneration, etc.);
- periodic review of the condition of industrial sites' energy assets and connections;
- a strategy of supply coverage with long-term partnerships and medium- to long-term contracts, with price-hedging protection mechanisms when needed;
- direct access to energy markets when possible (gas hubs, electrical grids, financial spot and futures exchanges);
- regular forecast reports on energy and raw material price trends sent to business to anticipate sales prices realignments.

Solvay Energy Services optimizes energy purchasing and consumption for the Group and helps GBUs manage energy and greenhouse gas emissions.

Energy being a key factor for Solvay's activities, Solvay has committed itself to reducing its energy consumption by 10% (1.3% per year on average) by 2020 compared to 2012 at constant activity scope. To achieve this ambitious target, Solvay has stepped up its SOLWATT® energy efficiency program, which aims to continuously optimize the industrial processes involved in its energy production and supply.

Solvay has taken concrete steps in the form of large investments, such as the start-up of the mega hydrogen peroxide (HP) plant in Saudi Arabia and the recent replacement of two gas turbines with more efficient units, one in the Spinetta cogeneration unit (Italy) and one in the Rosignano cogeneration unit (Italy).

SOLWATT® energy efficiency program

The Group has reduced its overall energy intensity by 6% since 2012. One of the key factors in this progress has been the SOLWATT® energy efficiency program. The improvement plan follows three approaches in parallel:

- By developing the use of high-efficiency cogeneration plants, the Group is improving the generation efficiency of secondary energy such as steam and electricity. Two turbines were replaced with more efficient units in 2017, one in Spinetta (Italy) and one in Rosignano (Italy). Electrical efficiency at those two cogeneration installations improved by 4%.
- In 2016, the second phase of the SOLWATT program was launched. By the end of 2017, the deployment of the second phase had covered most of the sites with significant energy consumption, representing 41% of Group energy consumption.
- New and remodeled plants are optimized for energy consumption and generation.

In 2017, Solvay continued to disseminate technological breakthroughs to improve the overall energy efficiency of its operations. Following the mega hydrogen peroxide (HP) plants

in Antwerp (Belgium) and Map Ta Phut (Thailand), Solvay has begun work on one of the world's most efficient HP plants in the Kingdom of Saudi Arabia.

Indicators and objectives Energy intensity

In 2012, the Group committed to reduce its energy consumption by 10% (1.3% per year on average) by 2020 at constant activity scope. Its energy intensity indicator covers both primary energy from fuels (coal, petcoke, coke, anthracite, fuel-oil, natural gas, biomass, etc.) and from purchased steam and electricity.



Energy efficiency index - Baseline 100% in 2012

In %	2017	2016	2015
Energy efficiency index	94	94	96

Scope: Energy index at constant activity scope reflects the change in energy consumption on a comparable basis after adjusting the historical scope to take into account scope changes and making adjustments for changes in production volumes from one year to the next.

Energy consumption

In 2017, primary energy consumption was 8 PJ lower than in 2016. This change is attributable mainly to changes in the reporting scope. The classification in discontinued assets of polyamide activities that will be sold to BASF led to a decrease of 8.7 PJ. The inclusion in the reporting scope of recently acquired Cytec activities and new production sites (e.g. Jubail in Saudi Arabia) accounted for an increase of 1.1 PJ. The rest of the variation (0.6 PJ) is linked to energy savings projects and production changes.

In petajoules low heating value (PJ)	2017	2016	2015
Primary energy consumption	130	138	175

Scope: This indicator shows the primary energy consumption over a given year related to the manufacturing activities of the companies that are currently consolidated (fully or proportionately). The primary energy consumption of the companies in the financial sphere represents 82% of the total primary energy consumption of all companies in the operational sphere.

Fuel consumption from non-renewable sources

In petajoules low heating value (PJ)	2017	2016	2015
Solid fuels	46	47	49
Liquid fuels	0.4	2	1
Gaseous fuels	54	55	57
Total	100	104	107

Scope: Consistent with financial reporting.

In 2017, fuel consumption from non-renewable sources was 4 PJ lower than in 2016. The classification in discontinued assets of polyamide activities led to a total decrease of 5.1 PJ (3.4 for gaseous fuels and 1.7 for liquid fuels). The inclusion in the reporting perimeter of Cytec activities and new production sites results in an increase of 0.2 PJ of the gaseous fuel consumption. The rest of the variation (+-0.9 PJ) is linked to production changes.

Fuel consumption from renewable sources

In petajoules low heating value (PJ)	2017	2016	2015
Renewable fuel consumption	3	4	5

Scope: Consistent with financial reporting.

Lower steam production at biomass-fired Brotas plant (Brazil) is partly mitigated by the start of biomass-based heat production at a French plant. Overall, biomass consumption decreased by 1 PJ in 2017 compared to 2016.

Secondary energy purchased for consumption

In petajoules low heating value (PJ)	2017	2016	2015
Electricity	30	30	40
Heating	0	0	0
Cooling	0	0	0
Steam	20	22	23
Total secondary energy purchased	49	53	63

Scope: Consistent with financial reporting.

In 2017 secondary energy purchased for consumption decreased by 4 PJ compared to 2016. The classification in discontinued assets of polyamide activities led to a total decrease of 3.9 PJ (2.5 for electricity and 1.4 for steam). The inclusion in the reporting perimeter of Cytec activities and new production sites results in an increase of 0.7 PJ of steam and electricity consumption. A change in the reporting methodology of secondary energy exchanged with a third party on one site led to a decrease of 1 PJ. The rest of the variation (+0.2 TJ) is linked to production changes.

Energy sold

Electricity 11 12 11 Heating 0 0 0 Cooling 0 0 0	Total energy sold	22	23	26
Electricity 11 12 11		11	12	14
Electricity 11 12 11	Cooling	0	0	0
Electricity 11 12 11	Heating	0	0	0
In petajoules low heating value (PJ) 2016 2015	Electricity	11	12	11
	In petajoules low heating value (PJ)	2017	2016	2015

Scope: Consistent with financial reporting.

In 2017, the sale of self-generated secondary energy to third parties decreased by 1 PJ. The reduction is explained by less use of cogeneration in France due to unfavorable market conditions and less use of the Brotas plant (Brazil).

5.3. Air quality













Nitrogen oxide emissions result mainly from the combustion of fossil fuels such as natural gas. Nitrous oxide (N2O) contributes to global warming but does not have the acidification impact of NO and NO₂. The emissions are expressed as the sum of nitrogen oxide emissions (NO and NO₂, expressed as NO₂) excluding N₂O.

Sulfur oxide emissions (SO₂) arise mainly from the combustion of anthracite or coal.

Non-methane volatile organic compounds (NMVOC): volatile organic compounds (VOCs) are compounds that have a standard boiling point inferior or equal to 250°C (EU Solvent Directive 1999/13/EC). NMVOCs are VOCs other than methane. Methane emissions from Solvay's mining activity at Green River (Wyoming, USA) are not included. Their impact is integrated into the greenhouse gas emission indicator.

Nitrogen oxide and sulfur oxide emissions contribute to atmospheric and freshwater acidification. NMVOC emissions contribute to the formation of tropospheric ozone and summer smog. Thus, these categories of substances are material because they directly impact on air quality.



Reporting practices



Why is it material?

Management

Air quality is managed through the Solvay Care Management System (SCMS) and is aligned with the requirements of the ISO 14001 standard (edition 2004), the OHSAS 18001 standard (edition 2007), and Solvay group HSE requirements.

Solvay is committed to improving air quality at the local and regional levels, in close cooperation with local stakeholders. In the framework of its environmental plan, Solvay focuses on the following pollutants: nitrogen oxides (NO_x), sulfur oxides (SO_x), and non-methane volatile organic compounds (NMVOC).

Health, safety, environment management, and compliance

Indicators and objectives



SOLVAY'S OBJECTIVES:

2020

-50%

of nitrogen oxides emissions intensity

Baseline 2015

2020

-50%

of sulfur oxide emissions intensity

2020

-40%

of non-methane volatile organic compound emissions intensity

Air emissions intensity

,			
In kg per € EBITDA	2017	2016	2015
Nitrogen oxides – NO _x	0.0042	0.0058	0.0063
Sulfur oxides – SO _x	0.0021	0.0028	0.0034
Non-methane volatile organic compounds – NMVOC	0.0022	0.0026	0.0035

Scope: Consistent with financial reporting.

Solvay's 2017 achievements for the Nitrogen oxides, Sulfur oxides emissions and Non-methane volatile organic compounds intensity are about 5.5% and 9% better than the expected 2017 target, respectively.

Absolute air emissions

In metric tons	2017	2016	2015
Nitrogen oxides – NO _x	9,466	11,098	12,210
Sulfur oxides – SO _x	4,598	5,395	6,563
Non-methane volatile organic compounds – NMVOC	4,949	4,968	6,781

Scope: Consistent with financial reporting.

There are several reasons for improvements with respect to nitrogen oxides, including:

- Deconsolidation of the divested GBU Performance Polyamides (- 941 metric tons);
- Within the GBU Solvay Energy Services, implementation of a water injection system in April 2017 on the gas turbine of Torrelavega in Spain (- 283 metric tons) and of urea injection since March 2017 on the existing DeNOx installation on the power plant of Tavaux (- 185 metric tons), reduced stream factor of the power plants of Brotas in Brazil (- 99 metric tons) and Pont de Claix in France (- 92 metric tons);
- For the GBU Silica, improved performance of the silicate production furnace in the site of Livorno in Italy (- 123 metric tons).

The evolutions for sulfur oxides emissions result from the following:

 integration of the SO_X emissions (+ 561 metric tons) from the site of Atequiza Jalisc in the United States (GBU Technology Solutions);

- thanks to the GBU Solvay Energy Services, full benefit from the DeSOx installation in November 2016 on the coal burner of Tavaux site in France (- 460 metric tons) and of the installation of the CFBB boiler in Devnya in Bulgaria (- 375 metric tons);
- increased availability of low-sulfur grade coal for the power plants and lime kilns used by the soda-ash plant in Torrelavega (GBU Soda Ash and Derivatives) in Spain (- 300 metric tons);
- increased use of bio-mass by the power plant of Dombasle (GBU Soda Ash and Derivatives) in France, combined with an improved stream factor of the natural gas fired power plant at the same site (- 136 metric tons).

The status-quo on the Non-methane volatile organic compounds is due to the following causes:

- integration of the emissions from the GBUs Composite Materials (+ 111 metric tons) and Technology Solutions (+ 74 metric tons), compensated by the divestment of the GBU Performance Polyamides (- 118 metric tons);
- small increases for the GBUs Specialty Polymers (+ 65 metric tons), compensated by improvements of the GBU Peroxides (- 59 metric tons) and of the GBU Soda Ash and Derivatives (- 45 metric tons).

5.4. Water and wastewater















412 million m³

Total water intake

328 million m³

Freshwater withdrawal

5,526 metric tons O₂

Chemical Oxygen Demand emissions

Definition

Water management encompasses the management of water flows and water quality, from abstraction from the natural environment to water flow restitution to the same or another environment compartment.

Freshwater withdrawal (million m³/year) is the amount of incoming water from the public network (drinking water), from freshwater systems (rivers, lakes, ...) as well as from groundwater sources (aquifers).

Chemical Oxygen Demand (COD) is the amount of oxygen reducing substances (mainly dissolved organic matter) discharged to aqueous receivers. COD is expressed as metric tons of oxygen per year. In addition to nitrogen and phosphorus species, COD contributes to aquatic eutrophication.

Reporting practices



Management approach

Water and wastewater are managed through the Solvay Care Management System (SCMS), and management is aligned with the requirements of the ISO 14001 standard (edition 2004), the OHSAS 18001 standard (edition 2007), and Solvay group Health, Safety and Environment (HSE) requirements.

The Group has a Company-wide water policy that includes a commitment to limiting freshwater withdrawal and consumption, and to ensuring that the quality status of the water bodies where effluents are discharged remains good, so that the impact on humans and natural biota is minimized. Solvay focuses on reducing two impacts: freshwater withdrawal and chemical oxygen demand (COD) emissions.

Health, safety, environment management, and compliance

Indicators and objectives

Overview of water flows (2017)

Water input

□ 19 million m³



Water OUTput























- In 2017, the Group's total water intake decreased to 412 million m³, 81% of which was fresh-water. Compared to 2016, the freshwater contribution decreased by 5%.
- The Group's total water discharge amounts to 383 million m³, 64% of which discharged to freshwater receptors.
- Water loss by evaporation (19 million m³) takes place in Industrial Cooling Towers or basins.
- Recycled water accounts for around 65% of the total volume of water used in 2017, an improvement of 6 % compared to 2016.

SOLVAY'S OBJECTIVES:

2020

-30%

of freshwater intensity

2020

-30%

of Chemical Oxygen Demand emissions intensity

Baseline 2015

Water intensity

	2017	2016	2015
Freshwater withdrawal intensity (Cubic meters per € EBITDA)	0.15	0.26	0.28
Chemical Oxygen Demand intensity (Kg per € EBITDA)	0.0025	0.0040	0.0045

Scope: Consistent with financial reporting.

Solvay's 2017 achievement for freshwater intake intensity and COD emission intensity are respectively 10 % and 20 % better than the 2020 target. This result is entirely due to the unforeseen deconsolidation of the GBU Performance Polyamides following the Group's recent decision to divest this activity.

Water intake and discharge

	2017	2016	2015
Freshwater withdrawal (million m ³)	328	491	537
Chemical Oxygen Demand (COD) emissions (metric tons O ₂)	5,526	7,539	8,834

Scope: Consistent with financial reporting.

The Group's significant reduction in freshwater withdrawal is due to the deconsolidation of the GBU Performance Polyamides (-181 Mm³), partly compensated by the GBUs Composite Materials (+6.3 Mm³) and Technology Solutions (+7.5 Mm³). Smaller increases were observed for the GBUs Soda-Ash and Derivatives (+2.5 Mm³), Solvay Energy Services (+2.5 Mm³) and Novecare (+1.5 m³) whereas decreases were observed for the GBU's Specialty Polymers (-2.1 Mm³) and Aroma Performance (-1.3 Mm³).

The Group's improvement for COD emissions is due mainly to the deconsolidation of the GBU Performance Polyamides (- 3,049 metric tons), compensated by the emissions from the incoming GBU Technology Solutions (+ 586 metric tons). Increased COD emissions have been obtained on the sites of Spinetta (GBU Specialty Polymers) in Italy (+ 276 metric tons) and Spartanburg

(GBU Novecare) in the US (+ 238 metric tons), both due to a degraded performance of the wastewater treatment unit . Decreases were obtained at the Vernon site (GBU Novecare) in the US (- 95 metric tons) due to an improved control of the wastewater treatment unit and changes in the product mix. The full effect of the mothballing of the soda-ash production in the site of Alexandria (GBU Soda Ash and Derivatives) in Egypt resulted in a further decrease of 243 metric tons of COD.

5.5. Waste and hazardous materials













1,745 metric tons Total industrial waste

0.0187 kg per € EBITDA

Hazardous industrial waste not treated in a sustainable way intensity 57 Required analysis of safer alternatives* 28
required analysis of safer alternatives performed*

9 analysis followed by effective replacement*

* for sold products containing SVHC

Definition

Industrial waste: waste stemming from our production activities, including packaging and maintenance waste. Industrial waste is composed of a hazardous portion and a non-hazardous portion. Industrial waste excludes waste from our mining activities (593 metric ktons over 2017), which is composed almost exclusively of inert materials backfilled into the mine.

Hazardous industrial waste not treated in a sustainable way: hazardous industrial waste that is landfilled or incinerated without energy recovery.

Substances of very high concern (SVHC): The group-wide reference list for SVHCs was established in 2015 with three categories (black, red and yellow) to characterize substances' level of risk management and control:

- Black list SVHCs: already undergoing a regulatory process of phasing-out or restriction, with a known deadline in at least one country or zone;
- Red list SVHCs: currently included in regulatory lists of substances that could enter into a process of special authorization or restriction in the medium term.
- Yellow list SVHCs: substances requiring specific attention (SRA), i.e. substances under scrutiny by authorities, NGOs, scientists, and industries due to their current hazardous properties or potential effects.

Reporting practices



Management approach

Substances of very high concern (SVHC) are subject to dedicated management approaches as regards: use as raw materials, placing on the market and possible substitution, handling during manufacturing, and managing hazardous waste. Solvay also has a strategy to decrease the use of hazardous substances in value chains, and to maintain consistent safety information on hazardous substances.

Solvay manages approximately 300 substances of very high concern in products and raw materials. The sites keep up-to-date SVHC inventories based on an updated reference list. They also updates risk studies for all SVHCs and replaces them with safer alternatives where possible. To date, 125 sites (including Polyamides activities) have cross-checked their inventory.

In addition, Solvay is focusing on industrial wastes and particularly on hazardous wastes, switching to more sustainable pathways that avoid landfilling or incineration without energy recovery, and promoting material or thermal recycling.

Hazardous materials risk studies and substitution



2020

100%

risk assessment and analysis of any available safer alternatives for marketed products containing SVHCs

35 SVHCs may be present in one or more products put on the market. Analysis of safer alternatives are required for a total of 57 combinations of ranges of products/ applications.

Solvay substances of very high concern (SVHC) in products sold

	2017	2016
All SVHCs ⁽¹⁾	35	20
Percentage of completion of Analysis of Safer Alternatives program for marketed substances ⁽²⁾	49% (28 out of 57 required assessments)	18% (9 out of 49 required assessments)
Of which effective replacement	32% (9/28)	

Legend

- (1) According to EU REACH Authorization list (annex XIV) and EU REACH Candidate list. SVHCs manufactured by or forming part of the composition of products sold by Solvay worldwide. REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals.
- (2) Analysis of Safer Alternatives for potential substitution for an SVHC. A substance may be present in more than one product.

The evolution of the number of SVHC and ASA required is due to changes in legislation and incorporation of Cytec's products in Solvay's substitution policy.

Of the 28 analyses of safer alternatives completed as of December 31, 2017:

- 9 have led to effective replacement: SVHC substitution or reduction below required threshold, or production stopped;
- 7 are ongoing (alternative identified and discussed with customers to be implemented);
- 12 alternatives not available (no substitute available or not allowed by regulations or not requested due to the application in the final product).

Example of process improvement completed

Various Solvay antifoam products contain petroleum based solvents that can have impurities (e.g. benzene etc.) presenting health risks linked to SVHCs. The Novecare GBU worked with

North America and Asia solvent suppliers to confirm that grades supplied for use in these Solvay formulations were high purity petroleum solvent grades, where SVHC content was controlled below the SVHC threshold. Improved controls on raw materials was implemented.

Example of on-going alternative implementation

Some Solvay surfactants are based on NPE (nonyl phenyl ethoxylate) which present environmental concern. Alternative products (Rhodasurf brand) have been developed by the Novecare GBU and are now already heavily promoted and sold by Solvay. Solvay is ready to support customers to use the alternative products without NPE, when their own sustainability programs or regulations drive their R&D investment to reformulate (paints, industrial cleaners etc.).

Waste and hazardous materials indicators



2020

-30%

of industrial hazardous waste not treated in a sustainable way

Baseline 2015

Due to the deconsolidation of the GBU Performance Polyamides, Solvay's 2020 objective for waste has already been achieved and even exceeded in 2017 (the waste intensity for 2017 is 26 % lower than what we should have obtained in 2020), despite the integration of the contribution of the two GBUs from the Cytec Legacy.

Waste intensity

In kg per € EBITDA	2017	2016	2015
Industrial hazardous waste not treated in a sustainable way	0.0187	0.0265	0.0241

Scope: Consistent with financial reporting.

Absolute volumes

In 1,000 metric tons	2017	2016	2015
Non-hazardous industrial waste	1,643	1,463	1,453
Hazardous industrial waste	101.7	194.2	202.0
Total industrial waste	1,745	1,657	1,655
Industrial hazardous waste not treated in a sustainable way	41.8	50.3	47.1

Scope: Consistent with financial reporting.

The decrease at Group level between 2016 and 2017 for hazardous industrial waste (- 92.5 ktons) is due to the deconsolidation of the GBU Performance Polyamides (- 105.5 ktons), partly compensated by the integration of the GBUs Technology Solutions (+ 5.3 ktons) and Composite Materials (+ 4.3 ktons). Increases were also observed for the GBUs Specialty Polymers (+ 4.3 ktons), Special Chem (+ 3.4 ktons) and Coatis (+ 2.2 ktons). Hazardous industrial waste decreased for the GBU Soda Ash and Derivatives (- 3.1 ktons).

Non-hazardous industrial waste for the Group as a whole augmented by 180 ktons compared to 2016. 75 % of this increase is coming from the GBU Soda-Ash and Derivatives and

mainly due to increases in production. Non-hazardous industrial waste decreased by 25 % for the GBU Specialty Polymers (- 14.6 ktons).

From the 41.8 ktons of industrial hazardous waste not treated in a sustainable way over 2017, around 10 % is due to services the Group offers to third parties:

- 2.6 ktons of landfilled ultimate waste from the revalorization of 20 ktons of residues in Rosignano (Italy) from external incinerators equipped with the SolvAir ® system,
- 1.3 ktons of landfilled bio-sludge due to the effluent treatment of Inovyn on the site of Tavaux (France).

6. HUMAN CAPITAL

This Human capital chapter addresses the management of Solvay's human resources as key asset for delivering long-term value. It includes factors that affect employee productivity, such as employee engagement and diversity, as well as the attraction and retention of employees. It also addresses labor relations management. Lastly, it covers the way the Group manages the health and safety of its employees and works to create a safety culture.

6.1. Employee health and safety











Employee health and safety management encompasses occupational safety, industrial hygiene, and occupational health management. The occupational safety and hygiene of contractors working at any site under Solvay's operational control are also covered.







- * Medical Treatment Accident Rate (MTAR): number of work accidents leading to medical treatment other than first aid per million working hours.
- ** Lost Time Accident Rate (LTAR): number of work accidents with lost time (away from work) of more than one day per million working hours.

Definition

Occupational safety is about preventing work-related injuries by providing safe working conditions. Accidents are mostly linked to falls from height, use of hazardous tools, and interaction with equipment during maintenance, as well as accidents due to noncompliance with work permits (regarding contractors).

Industrial hygiene management encompasses the assessment, monitoring, and management of workers' exposures to dangerous conditions for health, including hazardous chemical agents, ergonomic risks, or bio-physical risks.

Beyond industrial hygiene, health at work is how Solvay promotes occupational health collectively and for each individual employee. The key components are monitoring the health of personnel and improving the workplace and the way work is organized in ways that best protect employee health. Health management relies on different indicators: chemical-exposure risk assessments, medical surveillance, incidence of occupational diseases, stress/well-being indicators, medical emergency response, and biomonitoring indicators.









Management approach

The Group is responsible for providing safe and healthy working conditions on its sites for both its employees and its contractors, and it recognizes the need for an appropriate work-life balance.

Solvay's code of conduct

Health and safety is overseen by the Group Manager of the Industrial Function, under the supervision of Executive Committee member Vincent Decuyper. Deploying health and safety programs is the responsibility of dedicated individuals in every plant. This typically includes monitoring, following up and taking corrective actions after accidents, and managing the occupational hygiene programs.

Dedicated policies aim to:

- Target zero occupational accidents by promoting best practices and a culture in which all employees share Solvay's commitment to safety;
- Achieve a high level of health and physical and psychological well-being among employees;
- Prevent occupational diseases and disability through a high level of risk management and control;
- Ensure periodical medical surveillance for its employees consistent with local laws and adapted to individual risk profiles obtained from industrial hygiene assessments.

Safety excellence program

158

sites with a safety management system

The Group safety excellence plan has been deployed since 2015. It pursues three key courses of action with the goal of further reducing the MTAR and preventing any high severity accident:

- Deployment of Health, Safety, and Environment (HSE) roadmaps in every unit;
- Clear communication of management expectations;
- Development of a safety mindset.

To prevent fatal accidents, the Group safety excellence plan has a clear focus on eight "Life Saving Rules", one for each of the eight main dangerous activities (working at height, on powered systems, traffic, etc.). The Group requires strict compliance by every individual and full enforcement by management to save lives.

Industrial Hygiene program

The Group is reinforcing ad hoc prevention measures for workers potentially exposed to particular risks: a limited number of well-identified "operations" that may incur higher health risks due to Substances of Very High Concern (SVHC) handling conditions are mapped worldwide. The Industrial Hygiene program encompasses:

1,311

leadership safety visits

- · Solvay occupational exposure limits;
- Critical Tasks Exposure Screening: helps sites quickly identify situations where exposure to chemicals may require special attention and additional control measures; if needed, It triggers a more detailed risk assessment to characterize potentially critical situations;
- Global tool for industrial hygiene management (SOCRATES): Socrates gives widespread, easy Intranet access to all methods, tools and databases;
- Comprehensive chemicals inventories at the site level, with a special focus on SVHCs with potential detrimental health impacts.

Occupational safety indicators

In September 2017, Solvay was sad to report one fatal accident that occurred in Devnya (Bulgaria) during roof repairs. The operator died as a result of a 15 m fall from height. The accident was analyzed in depth to identify causes, and triggered a new action plan on the deployment of Solvay Life Saving Rules throughout the Company.

Fatal accidents

Headcount	2017	2016	2015
Solvay employees	0	0	0
Contractors	1	1	0

Scope: all sites under Solvay's operational control for which the Group manages and monitors safety performance. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites - Solvay employees and contractors working on sites.

Solvay's 2025 priority target is a continuous improvement in Solvay employee safety, hence a reduced MTAR. This focus on the MTAR, rather than the LTAR, reflects Solvay's attention to the actual severity of accidents, independent of the local legal context (or practices of adapted work), which influences the LTAR indicator.

- Medical Treatment Accident Rate (MTAR): number of work accidents leading to medical treatment other than first aid per million working hours.
- Lost Time Accident Rate (LTAR): number of work accidents with lost time (away from work) of more than one day per million working hours.

SOLVAY'S PRIORITY OBJECTIVE:

2025

0.5

Halve the number of accidents involving medical treatment to reach an MTAR of 0.5.

Baseline 2014

Occupational accidents with Medical treatment at Group sites (MTAR)

Accident per million hours worked	2017	2016	2015
Solvay employees and contractors	0.65	0.77	0.77
Solvay employees	0.63	0.73	0.65
Contractors	0.70	0.86	0.94

Scope: all sites under Solvay's operational control for which the Group manages and monitors safety performance. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites - Solvay employees and contractors working on sites.

Occupational accidents with lost time at Group sites (LTAR)

Accident per million hours worked	2017	2016	2015
Solvay employees and contractors	0.65	0.76	0.75
Solvay employees	0.70	0.69	0.67
Contractors	0.52	0.90	0.85

Scope: all sites under Solvay's operational control for which the Group manages and monitors safety performance. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites - Solvay employees and contractors working on sites.

Despite the continuous decrease of the number of medical treatment accidents (MTAR) on its sites, high severity accidents (fatalities and life altering) do not show the same decreasing trend.

After two years without improvement, the safety performance measured by the MTAR and LTAR indicators improved significantly. Both indicators are at 0.65 in 2017, compared to 0.77 and 0.76 respectively in 2016. Results for both Solvay employees and contractors improved over the same period.

Occupational accidents: nature of injuries

	2017
Trauma – fracture	23
Wound - cut	18
Burn – heat	3
Burn - chemical	3
Wound	1
Trauma	1
Multiple injuries	1
Total	50

Scope: all sites under Solvay's operational control for which the Group manages and monitors safety performance. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites - Solvay employees and contractors working on sites.

40% of the injuries that occurred this year involved hands or fingers. In 2017, the Group focused on the prevention of hand injuries through best practice sharing and awareness training. As a result, the number of hand injuries reduced by 25% compared to the previous two years.



Occupational safety

Industrial hygiene indicators

Solvay uses Critical Task Exposure Screening (CTES) to efficiently pre-screen critical exposures to chemicals at the workplace. A key feature of CTES is empowering shop-floor staff to take part, resulting in better final "appropriation" of corrective measures by these employees.

84

sites deploying the hygiene assessment program based on CTES 66%

of workstations with a CTES

SOLVAY'S OBJECTIVE:

2020

100%

of workstations, identified as potentially exposed to chemical, ergonomic or biological risks, has a systematic Critical Task Exposure Screening

A seven-year project aims to assess or reassess all workstations with Group tools, on the basis of a systematic pre-screening by CTES, by 2020. The program is now under way in 53% of all manufacturing and R&I sites, with 38% of the working units already (re)assessed. At the end of 2017, 2,357 working units had been identified as requiring CTES.

6,572

employees covered by CTES

10,516

employees potentially exposed to chemical, ergonómic or biological risks

For most workstations, the preliminary assessments delivered by CTES demonstrated that working situations are definitely safe. In the remaining cases, a more detailed risk analysis focused on situations where the safety level was unclear, ultimately identifying a limited number of situations where additional, focused prevention measures needed to be taken, whether that meant technical or organizational measures, or individual protective equipment.

Health indicators

The incidence of Occupational Diseases (ODs) both reflect historical and recent working environments and industrial hygiene conditions. Recognized Occupational Diseases are classified in two categories: long-latency and short/mid-latency.

ODs recognition significantly varies between countries, depending on the process defined by local national systems, including the feedback given to Solvay or not. These differences between official systems explain why most cases reported here are in European countries (e.g. asbestos in France).

Long and short/mid-latency recognized occupational diseases

	2017	2016
Long-latency occupational diseases (Asbestos benign dis., Asbestos cancers, Other cancers)		
In Europe	10	20
In the rest of the word	0	0
Total Long-latency occupational diseases	10	20
Short/mid-latency occupational diseases (Hearing disorders, Musculoskeletal diseases, Other non-carcinogenic of	dis)	
In Europe	1	2
In the rest of the world	2	2
Total Short/mid-latency occupational diseases	3	4
Total occupational diseases	13	23

Legend: Long-latency Occupational diseases are work-related cancers or other diseases that can arise several decades after exposure. They are usually linked to exposures in the remote past that are no longer prevailing today. Short/mid-latency Occupational diseases are non-carcinogenic diseases which appear a few months or years after the occupational exposure to a causal agent (e.g. noise, ergonomic stressors, chemicals, etc.).

Scope: All sites under Solvay's operational control for which the Group manages and monitors safety and health performance for its employees. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites. The figures were consolidated on Dec. 31, 2017; some of them may have changed compared to data displayed in previous reports because any new information received from Solvay's sites is taken into account systematically, even if they are related to events that had arisen in the previous years.

Occupational diseases (ODs) rate

	2017	2016
Occupational illness frequency rate (short/mid-latency)	0.06	0.08

Legend: The Occupational Illness Frequency Rate (OIFR) is the number of recognized short/mid-latency Occupational diseases cases per one million hours worked

Scope: All sites under Solvay's operational control for which the Group manages and monitors safety and health performance for its employees. This represents 219 sites incl. manufacturing, R&I, administrative and closed sites. The figures were consolidated on Dec. 31, 2017; some of them may have changed compared to data displayed in previous reports because any new information received from Solvay's sites is taken into account systematically, even if they are related to events that had arisen in the previous years.

6.1.1. Occupational safety







Safety excellence plan in detail

All global business units (GBUs) and sites have defined their dedicated HSE roadmaps and have implemented a range of good safety practices, in particular:

- · Best practice sharing,
- Reporting of "near misses" and analysis of those with a high potential for severity,

- · Safety Leadership training for site managers,
- · Leadership safety visits by GBU Management team members,
- Campaign to prevent hand injuries (50% of Medical Treatment Accidents),
- · Safety days.

More emphasis will be placed in 2018 on Safety Leadership, with the goal of making safety not just a group priority, but a personal value shared by all. To increase "Safety Leadership", specific training actions will be designed, together with a positive "Safety Climate Assessment". Management will play an active and visible role.

(Life Saving Rules initiative

Solvay Life Saving Rules were selected after studying the root causes of fatal accidents during the past 40+ years within the Group.

- Working at height: protect yourself and your tools from falling when working at height.
- · Working on powered systems: isolate and de-energize mechanical and electrical equipment before starting work.
- Line breaking: obtain authorization before starting to open lines or vessels.
- Working in confined spaces: be sure that atmospheric conditions are continuously monitored and a safety attendant is standing by before entering a confined space.
- Working in an explosive atmosphere: do not enter any area that has a potentially explosive atmosphere with objects that could generate a spark or ignition.
- Lifting: do not stand or move under or in the vicinity of a lifted load.
- Excavation: stay out of the line of fire of excavators, trucks, and non-stabilized earth.
- Traffic: respect all traffic rules.

Clear management expectations

1.311

leadership safety visits in 2017

The Leadership Safety visits Initiative is well established. Every GBU or Function Management Team member is committed to carrying out four site visits per year. During visits, top management team members convey Solvay's safety values to employees. The main goals of the visits are:

- to engage everyone in safety dialogue: assessing employees' risk awareness and identifying barriers to working safely, share risk perception and convey expectations;
- to react immediately if an unsafe situation is observed, especially regarding deviations from the Solvay Life Saving Rules.

Risk awareness: critical task analysis

70

sites with a Critical Task Analysis

Solvay developed the Critical Task Analysis methodology to help sites to assess and prioritize risks at the workplace. This methodology includes severity calculations based on measurable physical values or equipment types and factors:

- that increase the probability of accident occurrence (e.g. lack of lighting);
- for protective measures that decrease the severity of consequences (e.g. Personal protective Equipment);
- for preventive measures that decrease the probability of accident occurrence (e.g. specific training).

The Critical Task Analysis has been deployed at approximately 70 sites

6.1.2. Industrial hygiene







Solvay occupational exposure bands

Solvay uses the Occupational Exposure Band (OEB) system to determine acceptable exposure levels for all cases where there are no established national Occupational Exposure Limits, International Threshold Limit Values (TLVs), or in-house Solvay Acceptable Exposure Limits (SAELs). The OEB approach is highly relevant, as nearly 90% of handled chemicals have no TLV or SAEL. This OEB system also gives a simple, quick, and easy to understand hazard ranking from the least hazardous to the most hazardous.

Cytec products should be incorporated into the Solvay system by end-2018.

8.500

Chemicals with occupational exposure band

1,400

Chemicals with occupational exposure limit

70

Chemicals with Solvay acceptable exposure limits

Global tool for industrial hygiene management

66

sites trained to the Socrates tool

SOCRATES is Solvay's global IT tool for industrial hygiene management. This application is used to more efficiently identify and assess all industrial hygiene risks, enhance data traceability, and empower operating staff. Sixty six sites have already been trained to use this tool. At the end of 2017, chemical exposure assessments were in the system for "similar exposure groups" representing 6,572 people. "Similar exposure groups" cover a large number of employees with a defined number of risk analyses.

6.1.3. Health management





Solvay implements conservative, internationally vetted methods to identify, assess, and manage potential exposures to hazardous chemicals, including when new hazards are revealed. Over 80 occupational physicians provide risk-based medical surveillance

39

sites with with an advanced risk-based medical surveillance

for Solvay workers. This means supplying local medical teams with tools and dedicated medical protocols. Another significant effort is the well-being program currently getting under way.

Solvay's advanced health policy requires the increasing adaptation of every employee's periodic medical surveillance to individual health risk profiles, with a particular attention paid to SVHC, noise, and persons with safety-sensitive tasks*.

35

sites performing the human biomonitoring of exposure

*Safety-sensitive task: tasks where health problems could impair correct execution and lead to severe or fatal injuries to others. They are driving forklifts, cars, or trucks; operating cranes, including overhead cranes; working with explosives in quarries; and excavation while mining.

Occupational disease prevention at the workplace

Prevention of work-related adverse health effects starts with a good knowledge of the risks for health, including ergonomic risks. For decades, Solvay has deployed standards and guidelines aiming to prevent health risks at work. The focus is put on identifying potential risks at both the design and manufacturing stages and giving recommendations in due time, taking into account human capabilities and restrictions.

Employee engagement and well-being

General health promotion

Sites implement evidence-based actions for health promotion that are not specifically linked with potential risks at work, adapted to local contexts and issues. The main health awareness programs focus on addiction prevention in general, anti-smoking programs, nutrition campaigns, prevention of cardiovascular diseases, maternity care programs, seasonal flu vaccination, and reducing sedentary behaviours by increasing physical activity. Globally, seasonal flu vaccination is very widely deployed, while other health actions are implemented on a case by case basis.

Advanced health surveillance for employees

Solvay's policy promotes adapting each employee's periodic medical surveillance to their individual health risk profile. Risk profiles are created as part of Solvay's industrial hygiene program.

Solvay produces practical guidance to help occupational physicians use industrial hygiene data. The Group screens and prioritizes the information based on hazardous agents' properties and exposure data to provide accurate individual risks profiles, which are then sent to the medical team.



SOLVAY'S OBJECTIVE:

100%

of production and R&I sites with advanced risk-based medical surveillance

Advanced risk-based medical surveillance

In %	2017	2016
Manufacturing and R&I sites with advanced medical surveillance	23	18

Scope: all sites in Solvay's operational control for which the Group has identified potential health hazards. This represents 39 out of 167 manufacturing and R&I sites and covers Solvay employees and contractors working on the sites.

Since 2017, the progress indicator for advanced risk-based medical surveillance has been redefined. It now includes the completion of exposure assessments, the effective transmission of this IH information to the medical service for OH, and the performance of the medical surveillance accordingly.

Human biomonitoring of exposure (HBM)

sites performing human biomonitoring of exposure

HBM consists in measuring the concentration of a substance or its metabolites in human fluids (such as urine or blood). HBM can be used to assess exposure to specific chemicals. Unlike monitoring the atmospheric presence of certain contaminants in work spaces, HBM takes into account what has really been absorbed by the human body via all exposure pathways (inhalation, skin penetration, etc.) and under different working conditions (physical effort, PPE, etc.). HBM helps to verify whether protective measures are working. It is particularly useful for substances that penetrate the skin, have a systemic effect, or accumulate in the body. Thirty five sites are currently performing HBM of exposure.

International travellers' health - best practices

Solvay's preventive approach regarding travel health risks is communicated to all employees via Solvay's Travel Policy. Travelling can negatively impact health, or at least require preventive measures. Solvay seeks to ensure medical surveillance for travellers that is consistent with local regulations, internal standards, best practices, and the latest scientific knowledge:

- Periodic medical visits are recommended for all frequent travellers to evaluate their health status and give recommendations.
- Pre-travel medical visits are recommended for destinations with risks of key infectious diseases, for travel with a duration of more than four hours, and when crossing several time zones. Medical recommendations are made to alleviate jet lag and/or other possible sleeping problems.
- In addition, Solvay has contracted an Assistance Service that provides all business travellers with 24/7 access to world-class medical and security services via a single provider (International SOS). One call puts them in touch with doctors, nurses, logistics co-ordinators, and security teams. Also, Assistance Service will contact individuals in the event of strikes, epidemics, catastrophies, attacks, or conflicts. They may also be alerted in the event of troubles in a particular area.

6.2. Employee engagement and wellbeing









Solvay pursues comprehensive initiatives and processes to cultivate the engagement and well-being of its employees, including personal development, rewards and recognition, an inclusive culture, and work-life balance. The Group also considers that engagement is fostered by freedom of association and collective bargaining.

Employee engagement Definition

Solvay defines employee engagement as the commitment to be highly involved in their work. The Group believes that engagement increases performance through higher productivity and employee retention. Five aspects have an impact on employee engagement: pride, quality of work environment, overall satisfaction, motivation, and attachment to the company. Solvay also considers that engagement is fostered by fair labor practices and well-being at work.

Management approach

Employee engagement is an increasingly important concern for Solvay. It is measured through a worldwide annual survey. The objective of this survey is to measure the engagement of Solvay's employees and the factors leading to engagement, in order to identify strengths and areas where the working environment and employee experience can be improved.

Indicator and objective

1 annual survey 21,507 responses

The Group 2025 target is an engagement index of 80%. This index is used as a yardstick to decide which actions are needed in areas such as personal development, rewards and recognition, an inclusive culture, and work-life balance.

26 questions 75% Engagement index

In 2017, Solvay assessed its workforce engagement via the "Pulse Survey", a shortened annual version of the global "Solvay employee survey" census. Unlike the previous year, the roll-out was done entirely digitally, including the online survey and online manager and site reports. Each manager leading a team with more than five employee responses received a feedback report that can then be used to develop a local action plan.

Engagement remains strong within Solvay. Here are the main outputs of the survey:

- + Proud to work for Solvay
- Overall satisfaction
- Recognition

SOLVAY'S PRIORITY OBJECTIVE:

2025

80%

of Solvay engagement Index

In %	2017	2016	2015
Solvay engagement index	75	77	75

Scope: Consistent with financial reporting.

Labor relations

100%

of employees covered by collective agreement*

*due to the Solvay Care agreement which covers all the employees.

Solvay considers that maintaining trusting and constructive relations with employees and their representatives forms the basis for fair labor practices. This relationship is built on the Group's commitment to respecting employees' fundamental human rights and to guaranteeing their social rights.

Management approach

Labor relations are managed at four levels: site, country, Europe, and Group.

Solvay Global Forum

In 2015 Solvay created a global employee representative body, the Solvay Global Forum, composed of eight employee representatives from the seven main countries where Solvay operates. This Global Forum meets with the executive committee once a year, in Brussels, during a one-week session. Video conferences are held quarterly, bringing together the Solvay Global Forum and the top management of the Group to comment on and discuss the quarterly results of the Group, and to keep informed of the main new projects.

The main topics discussed in 2017 are:

- The yearly negotiation of the Global Performance Sharing plan, which entitles each Group employee to a share of the Group's EBITDA, and which also includes sustainability criteria (progress on the Solvay Way annual self-assessment);
- The Solvay Cares program has been negotiated with the Solvay Global Forum which made some significant suggestions to improve the program (e.g. level of replacement salary during the maternity leave);

 After two years of experimentation, the Solvay Global Forum has been established as a permanent body of the Company through an agreement signed by the CEO and the head of employee representatives in June 2017 in Houston.

European Works Council (EWC)

Solvay and its European Works Council (EWC) have been in permanent dialog for more than 20 years. In 2017, the EWC met on two occasions in a plenary session. The sustainable development EWC commission met on two occasions and the EWC Secretariat met eleven times with senior Group management, allowing these representative bodies to be part of the evolution of the Group. Subject matters receiving particular attention were mergers and acquisitions, restructuring issues, evolution of employment and working conditions in the Group, and strategy and sustainable development issues.

The main topics discussed with the Sustainable Development Commission of the European Works Council in 2017 include the five priority targets of the Group, the health and safety plan, the Human rights due diligence process in the Group, the new wellbeing at work policy, and the results of the Group's sustainability performance assessment by extra-financial rating agencies.

The IndustriALL Agreement

On December 17, 2013, Solvay signed a Corporate Social and Environmental Agreement for the whole Group with IndustriALL Global Union. This agreement is based on International Labor Organization (ILO) standards and the principles of the United Nations Global Compact (UNGC). It is a tangible expression of Solvay's determination to ensure that basic labor rights and the Group's social standards in the areas of health, safety, and environmental protection are respected on all of its sites.

Every year, IndustriALL representatives meet Solvay employees to check on compliance in the field, with two assessment missions taking place at two different sites. One mission measures the results of the Group's safety policy. The second examines the application of the agreement, which, in particular, formally covers the following health and safety aspects:

- Ensuring good working conditions;
- Managing risk as a daily concern;

- · Defining demanding internal policies and their stringent application;
- Improving safety performance and regular monitoring of own and contractors' employees;
- · Ensuring healthy working conditions for all personnel, regardless of the job they perform and its associated risks.

In February 2017, Solvay took that collaboration one step further by renewing its Global Framework Agreement (GFA) with IndustriALL, reinforcing its commitment by adding new social projects, such as societal actions and the protection of mental safety at work.



To ensure all employees comply with the IndustriALL Global Union Agreement, it has been integrated as an employee practice in the Solvay Way reference framework.

Read the full text of the Agreement

Minimum notice periods regarding operational changes

Some of the collective bargaining agreements specify notice periods for consultation and negotiation. The Global framework agreement concluded between Solvay and IndustriALL Global Union includes a provision for employees and unions (where they exist) to be informed in advance of any restructuring plans. In some of the collective bargaining agreements, a notice period and provisions for consultation and negotiation may be specified.

Employee Representation Indicator

Trade unions are present at a majority of Solvay sites around the world. Union membership is estimated at 20% in Europe, 30% in South America, 10% in North America, and 70% in Asia. This increase in Asia is due to a reevaluation of the percentage of the affiliate in China (100%).

(Solvay sets minimum social coverage standard through "Solvay Cares" for all its employees worldwide

Named "Solvay Cares", this initiative perpetuates the pioneering social vision of Ernest Solvay, who introduced forms of social security at the group he founded more than 150 years ago.

Solvay Cares was gradually rolled out in 2017 to provide four major benefits:

- Full income protection during parental leave, with 14 weeks for the mother and one week for the co-parent; and full income protection of one week during adoption;
- A minimum coverage of 75% of medical fees in the event of hospitalization or severe illness;
- Disability insurance in the event of lasting incapacity;
- Life insurance with coverage for the family or partner.

Well-being at work Definition

Well-being at work is a holistic concept which relates to all aspects of the quality of working life that ensure workers are safe, physically and mentally healthy, satisfied, engaged and efficient. It contributes to a culture of recognition and support, to worklife balance, to employees' growth and development, and to good communication and collaboration. The well-being indicator for Solvay's workforce is measured via the yearly "Solvay Engagement Survey". Four questions selected from the survey of employees relate to perceived well-being.

Management approach

Responsibility for the well-being program is assigned to the Head of Group Industrial Relations and Social Innovation, with the support of a multidisciplinary Corporate Committee on Wellbeing at Work. This Committee was set up in October 2016 and

meets monthly. It includes occupational physicians and psychologists, Human Resources, and Health and Sustainable development experts.

An important step in the current well-being program is to develop competences on stress prevention and to implement positive behaviors within the Group. The Committee is currently developing specific training material for managers and for local teams that support well-being (Human Resources, Occupational Health, physicians, and Health, Safety, and Environment staff), and it is also creating materials to raise awareness among all employees. Training of managers started with the Executive Committee and the leadership council in September 2017.

The network of occupational physicians and psychologists will increasingly examine the root causes of professional burnout and report cases to the Comex twice a year.

A Group Guideline on the Prevention and Management of Stress at Work offers entities guidance. In 2016, Solvay issued guiding principles on employees' work-life balance and on practical steps

to ensure this balance. Those principles have been given a high profile throughout the Group, targeting everyone on the shop floor



A full section of the Solvay Way framework, which Solvay entities use to perform annual self-assessments and define improvement plans, is now dedicated to well-being. It encourages sites to develop local well-being programs and assess stress risks. Well-being is part of the management aspects examined during the annual visits organized with IndustriAll.

Solvay Way commitments and practices

Local initiatives

Site management teams are informed of the local results of the Group perception survey and are invited to design action plans to foster improvement where needed, especially for sites with below-average performance.

Good practices at Solvay sites for stress prevention and management

The focus is on organizational factors such as the quality of managerial support and the degree of employee autonomy in their job.

Four key practices are in place at more than 50% of the sites, namely:

- individual local medical care: access to a physician or nurse;
- access to a psychiatric expert (internal or external);
- visible commitment of top management;
- employee access to an individual emergency response by phone (e.g. Employee Assistance Program).

Other good practices are in place on a case-by-case basis, representing 20% to 50% of sites, and present opportunities for further deployment:

- dedicated multidisciplinary committees involving worker representatives;
- awareness campaigns for employees and training sessions for managers;
- · assessments of the level and sources of stress;
- · implementation of corresponding practical actions;
- · monitoring with indicators.

From 2018, more extensive practical tools and support will be available for sites:

- adapted training on stress prevention for managers, local support teams and all employees;
- a burnout observatory will be progressively deployed worldwide:
- training for the medical network on the identification of (pre)burnout cases.

(At the Brussels headquarters: 320 persons in well-being workshops

A participatory dynamic got under way at the Solvay Campus headquarters in Brussels in 2017, with the definition of an action plan addressing seven themes selected with workers for concrete improvement. The actions are linked to risk factors identified previously thanks to a 2016 survey. In practice, tips related to well-being at work are communicated regularly and widely: for example, to prevent a sedentary lifestyle, headphones are provided for telephone calls. To alleviate potential workload and time pressure issues, the Solvay Campus has held a number of well-attended workshops on how to reconcile work efficiency and well-being.

6.3. Diversity and inclusion











106

23% of women

*Scope: Consistent with financial reporting.

Definition

Solvay defines diversity as all of the ways in which individuals are different, whether visible or not. Diversity includes more than gender, nationality, age, disability, ethnic origin, and sexual orientation. It includes thought and belief, culture, education, and background. In a business environment, it also includes corporate culture.

Inclusion means valuing and respecting difference, recognizing the unique contributions that many different types of individuals can make, and creating a working environment that maximizes every employee's potential. The Group sees this approach as a way to enhance its performance in its role as employer. It is convinced that its approach will ultimately improve the overall performance of its workforce, and has therefore made diversity and inclusion a performance lever and a growth enabler.

Management approach Commitments and policy

Solvay commits itself to equal opportunities and encourages diversity and inclusion at every level of employment in the company. This commitment is grounded in Solvay's principles of ethical behavior, respect for people, customer focus, empowerment, and teamwork.

Group Diversity and Inclusion Policy

Diversity and inclusion are championed at the highest level in the organization by Solvay's Executive Committee and Leadership Council. Each GBU and each Function entity management team is responsible for putting this commitment into practice. To reflect business objectives and cultural context, business, regional, and local leaders will set specific and relevant objectives within the Group Diversity and inclusion framework. Strategies and action plans have to be locally owned and driven by entity, region, and country, to take into consideration local laws, customs, and priorities.

At the Group level, four areas of focus in terms of diversity will receive specific attention and monitoring to ensure consistent improvement across the organization:

- 1. Improving the gender mix at all levels of the organization;
- Leveraging the generation mix to optimize learning, knowledge, and experience;
- 3. Developing national/cultural talent that mirrors growth opportunities;
- 4. Enriching team mix by leveraging experiences and backgrounds.

Diversity of the Board of Directors

The composition of the Board of Directors fulfills the duties imposed on it by Article 518 of the Companies Code.

6 of 16

Board members are women

Indicators and objectives

The various initiatives carried out in 2017 focused on three main areas:

SOLVAY Waly

Fostering awareness through Diversity and Inclusion workshops in various regions and business entities, through Solvay Way assessments, and through country-specific actions crafted in response to the local context;

- Training and development programs inclusive behaviors and female leadership pilot programs;
- Challenging Human Resources Processes such as the hiring process (e.g. for junior/middle management candidates to ensure the shortlist is in line with the demographic gender balance) and succession planning.



2020

20%

of senior executive positions held by women

Gender diversity by employee category

Percentage of headcount	2017	2016
Women in senior management	16%	14%
Women in middle management	24%	23%
Women in junior management	32%	33%
Women in non-managerial positions	21%	19%
Total	23%	22%

Scope: Consistent with financial reporting.

Age group by employee category

Percentage of headcount	2017	2016
Senior management	396	428
Percentage under 30 years old	0%	0%
Percentage between 30-49 years old	29%	31%
Percentage 50 years old and older	71%	69%
Middle management	2,898	3,026
Percentage under 30 years old	0%	0%
Percentage between 30-49 years old	48%	49%
Percentage 50 years old and older	52%	51%
Junior management	5,090	5,348
Percentage under 30 years old	11%	11%
Percentage between 30-49 years old	63%	63%
Percentage 50 years old and older	26%	26%
Non-managerial	16,075	18,228
Percentage under 30 years old	14%	14%
Percentage between 30-49 years old	55%	56%
Percentage 50 years old and older	31%	30%

Scope: Consistent with financial reporting.

Solvay's workforce by age

	2017	2016
Under 30 years old	2,765	3,242
Between 30-49 years old	13,578	15,107
50 years old and older	8,116	8,681
Total headcount	24,459	27,030

Scope: Consistent with financial reporting.

According to the above table, the age structure is currently:

- 33% older than 50;
- 56% aged between 30 and 49;
- 11% younger than 30.

6.4. Recruitment, development and retention











Solvay is committed to cultivating employees' personal and professional growth by offering career paths and opportunities, and by building skills for the future. Solvay is also committed to aligning its workforce with the needs of implementing a sound business strategy. The Group has developed and launched policies and processes with a view to attracting and retaining staff, and to fostering the development of all employees.

26,827

Total headcount (all active employees)

24,459 Headcount*

24,289

Full-Time Equivalent*

Group's social reporting practices Recruitment

A common hiring framework

A key lever to achieving the business strategy is the ability to attract, select, and retain the right talent in accordance with the Group evolving business needs. Solvay applies key principles globally to attract a qualified and diverse talent pool able to contribute to the successful achievement of business objectives while ensuring the Group's corporate social responsibility.

Three of our key principles:

- Provide equal opportunity without regard to race, ethnicity, religion, national origin, gender, sexual orientation, disability, age, family status, or any other legal basis;
- Strive for diversity and multidisciplinary profiles for greater business performance;
- Select candidates for positions based on their capacity to contribute now as well as in the future.

The Talent Acquisition process begins with creating visibility among targeted candidates and ends with the full integration of individuals into the Group.

Foundations for the future

147

Participants since 1998

"Foundations for the Future" is an example of how Solvay helps young people launch their careers. In 1998, Solvay introduced "Foundations for the Future", a rotational development program for new graduates around the world, to help them expand their horizons.

The program offers graduates in the early stages of their career, in particular engineers and marketing graduates, an intensive rotating experience within the company. It combines training and work, allowing participants to experience project management, hands-on field work, and advanced analytical problem-solving in different locations and countries. After three to five years of rotations, graduates pursue their career in the Solvay group.

68

Current participants in 2017

Engaging with the European Pact for Youth

The Pact for Youth is a mutual engagement of business, European Union leaders, and NGOs working in the field. Initiated by CSR Europe, it brings together representatives from business, education, younger generations, and the European institutions to develop and consolidate partnerships in support of youth employability and inclusion.

Through the Pact, Solvay commits to pursuing the following objectives and actions:

- Boost the number and quality of business-education partnerships;
- Reduce the skills gap; and
- Contribute to European and national policies for the development of skills for employability.

^{*} Consistent with financial perimeter

In line with these objectives and proposed actions, the Pact participants set a goal to support the creation of 10,000 quality business-education partnerships, with the shared target of jointly establishing at least 100,000 new quality apprenticeships, traineeships, or entry-level jobs in 2017.

Developing a culture of business-education Partnerships

In 2016, Solvay began working with three multinational companies to test apprenticeship mobility under the auspices of the ErasmusPro program in Europe. Solvay's goal is to allow five young people to experience this international assignment in 2018.

1.033

New learning opportunities in Europe since 2016*

*Apprenticeships, internships, and traineeships

Onboarding the newcomers

To help increase newcomers' engagement level, success, and retention, in late 2016 Solvay began putting in place a global onboarding platform to ensure that:

• newcomers receive a standard "getting started" experience when they begin working at Solvay; and

95.2% of newcomers

satisfied by the hiring process

Workforce and turnover figures

Solvay's workforce by region

	2017	2016
Europe	11,351	13,030
Percentage of women	25%	23%
Percentage of permanent staff	97%	97%
Asia-Pacific & rest of the world	4,696	5,229
Percentage of women	25%	24%
Percentage of permanent staff	62%	62%
North America	6,057	6,424
Percentage of women	20%	20%
Percentage of permanent staff	100%	100%
Latin America	2,355	2,347
Percentage of women	21%	21%
Percentage of permanent staff	100%	100%
Total headcount	24,459	27,030
Percentage of women	23%	23%
Percentage of permanent staff	91%	91%

Scope: Consistent with financial reporting.

Alliance for Youth

Since 2016, by participating in the Alliance for Youth pan-European business driven movement, Solvay has worked to create concrete opportunities for young people to enter the labor market, to strengthen Solvay's employer brand regarding social responsibility, and to fill Solvay's talent pipeline in an effective and structured manner (e.g. apprenticeships in countries with less of a tradition in this area).

166

Entry positions offered in Europe since 2016

• they have the requisite equipment they need to do their work right from day 1.

In order to get feedback and monitor the global onboarding process along the way, surveys will be systematically sent to newcomers after one month, six months, and one year from the date of hire.

97.1% of newcomers

satisfied with their decision to join the Group

The strong reduction of the workforce in Europe and Asia in 2017 compared to 2016 was due to the size of the Polyamide GBU headcount.

Solvay's workforce by contract and by gender

	2017	2016
Permanent contract	22,255	24,710
of which women	23%	22%
Temporary contract	2,204	2,320
of which women	28%	27%
Total headcount	24,459	27,030

Scope: Consistent with financial reporting.

Solvay's workforce by employment type

	2017	2016
Full-time contract	23,893	26,460
of which women	22%	20%
Part-time contract	556	570
of which women	76%	80%
Total headcount	24,459	27,030

Scope: Consistent with financial reporting.

The vast majority of Solvay's employees are full time (98%). Among part-time employees, women represent a large majority (76%). This is mainly due to requests from this group for family purposes.

Solvay's workforce by employment category

	2017	2016
Senior manager	396	428
Middle managers	2,898	3,026
Junior manager	5,090	5,348
Non managerial	16,075	18,228
Total headcount	24,459	27,030

Scope: Consistent with financial reporting.

Since Solvay has a strong industrial footprint, 66% of employees are not managerial staff, but rather operators in plants.

Global staff turnover

Hirings by region

	2017	2016
Asia and rest of the world	334	348
Europe	647	638
North America	516	353
Latin America	154	111
Total headcount	1,661	1,450

Scope: Consistent with financial reporting.

Hirings by gender

	2017	2016
Male	1,134	949
Female	527	501
Total headcount	1,658	1,450

Scope: Consistent with financial reporting.

Hirings by age

	2017	2016
<30	721	647
30-49	812	692
>49	128	111
Total headcount	1,661	1,450

Scope: Consistent with financial reporting.

All leaves by region

	2017	2016
Asia and rest of the world	642	1,091
Europe	925	775
North America	715	247
Latin America	260	575
Total headcount	2,542	2,688

Scope: Consistent with financial reporting.

All leaves by gender

	2017	2016
Male	1,853	2,011
Female	689	677
Total headcount	2,542	2,688

Scope: Consistent with financial reporting.

All leaves by age

	2017	2016
<30	534	550
30-49	1,141	994
>49	867	1,144
Total headcount	2,542	2,688

Scope: Consistent with financial reporting.

Voluntary leaves by region

	2017	2016
Asia and rest of the world	349	394
Europe	341	334
North America	222	187
Latin America	61	33
Total headcount	973	948

Scope: Consistent with financial reporting.

Voluntary leaves by gender

	2017	2016
Male	653	654
Female	320	294
Total headcount	973	948

Scope: Consistent with financial reporting.

Voluntary leaves by age

	2017	2016
<30	294	273
30-49	505	450
>49	174	225
Total headcount	973	948

Scope: Consistent with financial reporting.

Employee mobility

The Group's approach is to ensure that employees can move across functions and countries in order to develop their skills while also increasing the exchange of skills across regions and/ or businesses. Solvay Employee Mobility Rules clearly prioritize internal moves over external recruitment:

- transparency with job posting of the open positions;
- there is a 15-day priority period for internal candidates before external recruitment may be considered;
- employees who have been in a job for three years or more are free to apply without managerial approval.

Of the 2,603 positions filled in 2017, 36% were filled internally.

Development

Solvay's ambition is to enable every employee to maximize their potential for performance and increase their employability. Each employee is empowered to grow and to develop their career, while Solvay pledges to foster a development culture and provide policies and tools that help everyone succeed.

At Solvay, knowledge, skills, and behaviors are acquired through an array of developmental actions: through experience, from others (feedback and coaching), through training sessions, and by self-learning. The Group envisions a culture of development characterized by challenges, feedback, and trust.

€6,726,589

training budget

Solvay Corporate University

Solvay Corporate University programs and services provide training opportunities for all employees globally on a wide range of subjects and levels. Solvay Corporate University is organized as follows:

 The Leadership & Management Division aims to enhance the managerial effectiveness and competencies of tomorrow's business leaders and team managers on subjects ranging from basic management skills to advanced leadership behaviors;

32.9

average training hours per employee

- The Academies Division helps Solvay Professional Families achieve their strategic objectives by working closely to identify, design, and deliver the expertise they require around the world. Academies focus on a learning curriculum that supports the professional development within the Professional Family and provides cross-functional content. Solvay has launched six Academies to date;
- Four Zone Learning Teams support the deployment of the global initiatives and manage training needs related to soft and hard skills within their zones.

Training figures

The Solvay Corporate University offers a virtual learning service, practical learning programs available to all Solvay employees, wherever they are.

+1,300

managers in the Leadership & Management programs

+2,300

participants in Academy programs

56

Academy learning program

In 2017, each zone received a budget to support cross-functional initiatives related to frontline management and interpersonal skills. This made it possible to organize training in the areas considered to be a priority within the Group's subsets. Below are some examples:

- Diversity & Inclusion (640 participants in Brazil, France, Singapore, and the US);
- Work-Life Balance (390 participants in China and Brazil);
- Wellbeing@work for managers and collaborators (317 participants in Belgium).

■ SOLVAY'S OBJECTIVE:

2020

One week

of training per employee, per year on average

The results below include all training provided in all four zones, including Leadership & Management programs, Academies, and local training.

Average hours of training

Hours	2017	2016
By men	33.1	33.7
By women	32.5	33.8
By senior managers	10.6	22.8
By middle managers	25.0	31.9
By junior managers	36.0	37.8
By non managerial	33.9	33.1
Per employee	32.9	33.7

 $Legend: in Solvay \ Corporate \ University \ calculations, we exclude the "apprentices" employee \ sub-group, and the headcount basis for our calculation is the average number of FTE for the year.$

In 2017, the average number of learning hours per employee (32.9 instead of 33.7 hours) remained stable at the Group level. There was a significant difference for the senior managers, who completed a round of global training on such topics as Transformational Leadership.

Delivery methods

In %	2017
Instructor led	80.4
Digital learning	9.7
On-the-job training	9.9

In line with the learning strategy, there was a specific focus on diversifying delivery methods and expanding digital learning offers.

- Implementation of a new eLearning external platform: 5,700 users with learning activity;
- Custom internal eLearning: more than 280 modules available, with around 100 launched in 2017;
- Continued adoption of the virtual classroom to help transform the way we learn and become more agile in the way we deploy;
- Deeper exploration and continued piloting of new digital technologies, including two custom Corporate Open Online Courses (COOCs), testing of 70 on-the-shelves Massive Open Online Courses (MOOCs), and serious games.

Hours of training by learning domain

In %	2017
Health, Safety, Environment, and Industrial	62.0
Professional Development	11.6
Leadership & Management	6.6
Human Resources	4.7
Others	15.1

Average training investment

In€	2017
Per senior manager	293
Per middle manager	452
Per junior manager	417
Per non managerial	196
Per employee	274

Transition assistance programs to facilitate continued employability and the management of career aims

Specific training programs designed to help manage career endings – whether through termination of employment or retirement - are not consistently deployed in the Group as a global initiative.

In France, pre-retirement workshops were offered to prospective retirees in 2017. The workshops focused on themes such as change management, financial planning, time management, legal aspects, and health. The aim of these events was to prepare departing employees for the transition to retirement and to help them develop a new life project.

Retention

Performance, Development and Career Review (PDCR)

Solvay is committed to ensuring that each employee has a formal Performance, Development, and Career discussion with their Manager at least once a year, with a specific focus on development. An important focus of this process is on employee's development and career management:

- · assessment of behavioral competencies;
- · agreement on a development plan;
- discussion of career aspirations.

The process is supported by an online tool and will be used in the Compensation Review and other HR processes such as training, succession planning, and career development.

Since 2016, the PDCR cycle has been adapted to ensure that one of the three discussions in the cycle was repositioned to focus on long-term development needs and employability. In addition to this initiative, a project was launched to extend the PDCR to more non-managerial employees. This requires willingness on the part of both local management and employee representatives.

The PDCR process applies to the entire managerial population. Beyond its initial scope, the PDCR is also used by about **4,400** non-managerial employees.

52% of Solvay employees were covered by the 2017 online Performance, Development, and Career Review (PDCR):

- 100% of the managerial population (29% women);
- 27% of the non-managerial population (45% women).

Local performance and development tools and processes are available for the population not covered by the PDCR online tool, without global reporting.

Development and Succession Planning

Solvay has a Development and Succession Planning (DSP) process for its managerial population. This management meeting is organized according to a yearly cycle. It is where topics related to Succession Planning, Talent Identification and Career Development are discussed and where decisions are made collectively.

The DSP process aims to ensure the Group has the right people at the right place to achieve its growth strategy and performance goals by:

- identifying and developing talents, with a specific focus on High Potentials and owners of critical expertise;
- securing the succession planning for key positions and 100% of the key professional pipelines;
- encouraging cross-functional moves across Businesses / Functions and Regions.

Since 2016, managers have had access to an online display of the DSP results related to their teams so that they can have deeper development discussions. In 2017, both new GBUs - from the Cytec acquisition - integrated the DSP process with the support of a new DSP eLearning.

(□) Talent Days

Talent days are regional events where selected internal talents meet with Solvay leaders and Human Resources. It is an opportunity for development and increased visibility outside their respective entities. During these events, talents have scheduled face-to-face meetings with Solvay leaders and Human Resources in which they present themselves and clarify their career aspirations.

In 2015, to harmonize the Talent Day objectives, process, and timeline, Solvay published common guidelines on its intranet.

110 talents

participated in 2017

Employee benefits

Benefits reflect local market practice and laws. Legislation in this field differs from country to country. Benefits for part-time employees are generally on a par with those for full-time staff-prorated for the number of hours worked. In exceptional cases, at some sites, e.g. in the United States, not all long-term benefits apply to part-time employees.

For temporary employees in Europe, benefits are generally granted according to the same principles as for full-time employees, whereas standards can differ outside Europe.

More details on Solvay Cares

7. **SOCIAL CAPITAL**

This chapter on social capital discusses Solvay's perceived role in society, i.e. expectations of what Solvay will contribute to society in return for its social license to operate. It addresses the management of relationships with key outside stakeholders, such as customers, local communities, the public, and the government.

(Q) Solvay partners with the Ellen MacArthur Foundation: a bold step towards a circular economy

Solvay has taken action to accelerate the transition towards a circular economy by signing a three-year partnership agreement with the Ellen MacArthur foundation. The Group is the only multinational chemical company among the foundation's Global Partners, which include Danone, Google, H&M, Intesa Sanpaolo, Nike, Philips, Renault, and Unilever.

Through this partnership, Solvay will explore solutions that adhere to the principles and requirements of the circular economy by leveraging the internal mindset and driving concrete business projects. The Group generated almost half of its 2017 revenue from sustainable solutions – including those aligned with the circular model's requirements – by using efficient manufacturing processes and renewable energy and materials, and by designing smarter solutions for customers to help reduce resource consumption, encourage the re-use of materials, and extend the product life cycle.



Read more details on the partnership

7.1. Customer welfare

+ Highly material

36%

Net Promoter Score

Definition

Customer centricity is about transforming the Group to accelerate its growth by fostering its ability to engage, inspire and co-create sustainable value with customers. Solvay should become a strategic and agile partner for its clients, providing innovative and tailor-made solutions through a seamless omnichannel customer experience.

Management approach

In 2017, the Corporate Marketing and Sales Function launched a worlwide initiative to embark more than 1000 managers in the identification of the major challenges the group is facing today in terms of customer centricity. "What stands between us today and the worldclass BtoB companies that deliver robust growth". This question was the cornerstone of very insightful exchanges and brain storming sessions around this burning platform on how to better integrate customer feedback in all Solvay's decision making processes in order to boost growth.

Leveraging this broad expertise, a common definition of Customer Centricity as well as a structured framework has been co-constructed to share best practices and support each single entity across the entire group to elaborate its own customer centricitry roadmap.

The framework is articulated around 4 pillars:

- · Cultural Shift,
- Better understand markets and customers needs,
- · Co-construction of innovative solutions,
- Seamless Customer Interactions.

Consequently, about 20 workshops and webinars took place across the group, with more than 500 participants, around this framework in order to mobilize managers from all functions far beyond marketing and sales to join the customer centricity tranformation of the group. The objective is to accompany each single team within the group while starting their own journey, building their own short term action plan within their own environment and contribute as such to make the group a true solution provider.

Indicator and objective

Since 2014, Solvay has been monitoring and publishing the Group's Customer Satisfaction index by consolidating the Group Net Promoter Score (NPS), which is compiled through GBUdriven, "Voice of the Customer" surveys.

In 2017, the Group made substantial progress, with a NPS of 36%, exceeding its original 2020 objective set a few years ago by implementing action plans and follow-up programs across the entire group.

In %	2017	2016	2015
Solvay's Net Promoter Score (NPS)	36	27	24

Scope: Net Promoter Score is a customer loyalty metric developed by (and registered trademark of) Fred Reichheld, Bain & Company, and Satmetrix.

7.2. Societal actions















Societal actions are how we create shared social value. Today, value creation is a collaborative effort both within the company and between the company and its stakeholders. The Group aims to strengthen its commitment by facilitating employee involvement in projects that serve society and by offering Solvay's expertise to regions where the Group operates. Disclosure of Solvay's indirect economic impact is provided in this section.

€3.919 million

Solvay Group donations, sponsorships and own projects

33%

of employees involved in local societal actions



70% of the industrial sites have a working group, composed of the site manager, Human Resource manager, and employee representatives, that defines the major issues facing the region and which relevant societal actions the site will take.

Local societal actions Definition

A local societal action is a volunteer activity developed by a site in collaboration with associations, governmental initiatives, or NGOs, with the aim of improving the human condition and contributing to local communities. It should address one of the four issues identified by the Group:

- · scientific solutions;
- · education and youth employment;
- · environmental actions;
- solidarity at the local level.

Responsibilities and resources

Each site is invited to design its own societal actions plan in accordance with the principles of the Solvay Way framework. Guidelines have been provided to the sites, inviting them to start by designating a working group composed of the site manager, Human Resource manager, communication manager, Solvay Way correspondent, and employee representatives, with the support

of the industrial relations network. The site manager is accountable for developing and implementing the societal actions plan. The working groups must update the site plans annually in pursuit of continuous improvement.

Solvay sites manage their societal approach locally, independently choosing and funding initiatives that meet the needs of their surrounding communities.

Indicators and objectives

Societal Actions is not subject to assurance procedures as the reporting process is undergoing recalibration to strengthen data quality.



SOLVAY'S PRIORITY OBJECTIVE:

2025

40%

of employees involved in societal actions

In % of headcount	2017	2016	2015
Employees involved in local societal actions	33	23	20

Legend: Number of employees that participated at least in one societal action in 2017 (even if they are no long present at the company on 31/12/2017) divided by the headcount on 31/12/2017.

Example of local initiatives

- 20 volunteers from Solvay's Italian sites joined together to build a country-specific network: Solvay Way Italia. Each year, they act as facilitators to engage with local communities. They share and promote good practices, help engagement for safety, and collaborate in societal actions;
- The "All Star Game" at the Santo André Site (Brazil). This action, linked to the Solidarity focus, raised funds to help pay for infrastructure improvements at the Casa da Acolhida Santa Gema in Santo André and Lar Sol da Esperança in Mauá. The volunteers organized a volleyball match and barbecue involving employees from the Santo André plant. All profits from the ticket sales went towards the infrastructure improvements of the two charitable institutions;
- "The planting of young trees to improve local ecology" at Changshu in China. Managers, union representatives, and other employees joined local authorities and other companies in a tree-planting activity at the local park. Participants planted many loquat trees with the help of representatives from the local school, and will continue to do regular maintenance at Fushan Village in order to show Solvay's strong commitment to the environment. This kind of initiative has been repeated at other Solvay sites across the world;
- "Creative heads" at the Wimpfen Site in Germany. The "creative heads" project is a joint initiative of cities, schools, and companies in the region to promote and support the creative ideas of students. This action is linked to both educational efforts and science efforts, as another activity at the same site consists in teaching and managing the "natural sciences lessons" at Ludwig-Fronhäuser Schule (a school partnership in the town).

Corporate citizenship and philanthropy

Management approach

250

Requests for financial support

The Group aims to connect its philanthropic efforts with the Group's areas of expertise and support causes where its products or activities can deliver added value.

In 1923, Solvay created the Ernest Solvay Fund to honor the founder of the Company, who died the year before. Today, the majority of Solvay's corporate philanthropy goes through the Ernest Solvay Fund. This Fund is managed by the independent King Baudouin Foundation.

Solvay concentrates its philanthropic and funding efforts at the corporate level on science promotion, education, and youth employment, and in some circumstances it supports humanitarian initiatives in response to certain disasters and/or where our products or services are of particular value.

125

Funded projects

Major projects

Chemistry for the Future Solvay Prize

The Chemistry for the Future Solvay Prize rewards a major scientific discovery that could shape tomorrow's chemistry and aid human progress. The prize perpetuates the strong support Ernest Solvay lent to scientific research. It is intended to endorse basic research and underline the essential role of chemistry, both as a science and an industry, in helping to solve some of the world's most pressing issues. The € 300,000 prize is awarded every two years.

The 2017 Chemistry for the Future Solvay Prize was awarded to Professor Susumu Kitagawa for his work in developing metal organic frameworks, a new class of materials with a range of potential future applications, including the capturing of polluting gases.

The International Solvay Institutes for Physics and Chemistry

The Solvay Institutes were founded by Ernest Solvay in 1912 to support and develop curiosity-driven research in physics, chemistry, and associated fields with the purpose of "enlarging and deepening the understanding of natural phenomena".

The central activity of the Institutes is the periodic organization of the celebrated Solvay Conferences on Physics and Chemistry ("Conseils de Physique Solvay" and "Conseils de Chimie Solvay"). This support for fundamental science is complemented by the organization of open workshops on specific selected topics, international chairs, colloquia, and an international doctoral school.

In addition to these activities, the Solvay Institutes promote the popularization of science through the organization of the annual Solvay public lectures devoted to today's big scientific challenges.

Examples of Group science educational and social projects

- In 2017, we supported the University for Children initiative at the University of Brussels, in particular the science program. The project aims to attract children from underprivileged communities whose parents may never have had the chance to study;
- "A Bridge between two worlds" is a project developed together with the La Monnaie Opera House in Brussels to bring art and music to underprivileged communities and schools;
- The creation at the University of Strasbourg of "bourses de doctorat d'excellence en chimie", which support candidates from the Imperial College of London, University of Cambridge, and Saint Andrews University;
- The annual grant to the Queen Elisabeth Medical Foundation (QEMF), which encourages laboratory research and contact between researchers and clinical practitioners, with a particular focus on neurosciences. The QEMF supports 17 university teams throughout Belgium;

- The International IUPAC/Solvay Award for Young Chemists, which will reward five young chemists and researchers from top universities all around the world;
- The "Solvay Awards", which have been recognizing excellent master's and doctoral students from two major universities in Belgium for more than 20 years;
- Since 2014, Solvay has supported VOCATIO scholarships, which allow talented young people to achieve their dream or to start pursuing it;
- The creation of the research chair "Chimie et Auto assemblage" at the University of Bordeaux.

Group Strategic Partnerships Ellen MacArthur Foundation

In January 2018, Solvay and the Ellen MacArthur Foundation signed a three-year Global Partner agreement, giving the Group an opportunity to make a difference in accelerating the transition towards a circular economy in the chemicals sector.

Known for its expertise and work with businesses, governments, and academia, the Ellen MacArthur Foundation helps foster the economy's transition from a take-make-dispose model to a more sustainable and economic one



More details on this partnership

World Alliance for efficient technologies

Solvay joined the World Alliance for Efficient Solutions, created by Solar Impulse founder Bertrand Piccard, to promote efficient technologies, processes, and systems that help improve the quality of life on earth. The Alliance members consist of start-ups, companies, institutions, and organizations.

By combining the forces of governments, corporations, and international institutions, the Alliance will facilitate their ability to share experiences and create synergies in order to develop and implement concrete solutions to reach environmental and health targets.



More details on this partnership

Business programs for social needs

Sustainable Guar Initiative, or how we do inclusive business

4.056 farmers registered in the

856 women impacted by the program

Solvay is the world's leading producer of guar derivatives. Since 2015, Solvay has been spearheading a large-scale development initiative to improve the sustainability of guar cultivation and to make a positive contribution to the livelihood of the farmers

629 kitchen gardens planted 42,000+ trees planted

who produce it. Guar is a drought-resistant legume grown in semi-arid areas, predominantly in India. Rajasthan accounts for approximtely 70% of the country's production.

In collaboration with L'Oreal and Henkel, two strategic customers active in Personal Care, and with the support of the nonprofit organization TechnoServe, more than 4,000 farmers in Bikaner were trained over two and a half years, and more than 330 kitchen gardens were developed in 20 villages.

The initiative's primary objective is to encourage sustainable agriculture, thereby increasing farmers' revenues through guar cultivation good practices for seed selection, seed treatment, sowing, and pest management.

The initiative also empowers women through specific training on hygiene, health, and nutrition:

- fostering better nutritional practices by growing vegetables in kitchen gardens in a region where the traditional diet is very limited;
- improving health and hygiene practices for themselves and their children.

Lastly, the initiative focuses on agroforestry with more than 42,000 trees planted to fight sand movement and soil erosion in the fields. The outcome means guar farmers can earn a better living, global buyers can obtain higher quality guar, and the market can benefit from improved supply security.

8. LEADERSHIP AND GOVERNANCE

This chapter covers regulatory compliance, lobbying, and political contributions. It also covers risk management, safety management, supply chain and resource management, conflicts of interest, anticompetitive behavior, and corruption and bribery. Lastly, it deals with the risk of business complicity with human rights violations.

8.1. Management of the legal, ethics, and regulatory framework













Management of the legal, ethics, and regulatory framework encompasses business ethics – human rights, anti-corruption, and non-discrimination – and anti-competitive behavior.

Commitments and policies Solvay's Code of Conduct

Solvay's Code of Conduct and the policies and procedures it has adopted to enhance good governance apply to all employees wherever they are located. In addition:

- Third parties are expected to act within the framework of the Code of Conduct;
- All critical suppliers must confirm that they adhere to the principles set out in the Solvay Supplier code;

 Majority-owned joint ventures are held to the Solvay Code of Conduct or to a separate code adopted based on similar principles.

Solvay's Code of Conduct

Gifts, Entertainment and Anti-Bribery policy

Solvay's Code of Conduct expressly states that the Group prohibits bribery in any form. Solvay and its employees do not use gifts or entertainment to gain competitive advantage. Facilitation payments are not permitted by Solvay. Disguising gifts or entertainment as charitable donations is equally a violation of the Code of Conduct. The Code is supported by a more detailed policy on Gifts, Entertainment and Anti-bribery. Solvay is a member of Transparency International Belgium.

Solvay employs an internal tracking system to record gifts and entertainment that exceed the acceptable reasonable value applicable in each region and requires manager approval for the acceptance or giving of same. The use of the Gift and Entertainment Tracking System ("GETS") is part of Solvay's Internal Audit review process.

Human rights in business policy

Solvay's Human Rights in Business Policy, published on Solvay's website, sets forth Solvay's commitment to respect human rights and act with due diligence to avoid any infringement of human rights or any adverse impact on or abuses of such rights. The policy emphasizes Solvay's commitments to its stakeholders (its employees, its business partners, the communities and environment in which it operates, and children).

Following the work of an internal steering committee in 2017 and ultimate adoption by the Executive Committee anticipated in 2018, Solvay will appoint the Global Human Rights Committee to oversee the implementation of the policy, ensure compliance, and monitor the Group's performance in meeting its commitments. Members of the Global Human Rights Committee (GHRC) will include the Heads of the following Solvay Business Service Activities and/or their delegates: Legal & Compliance, Human Resources, Purchasing and Supply Chain Excellence, Industrial, Internal Audit & Risk Management, and Sustainable Development. The GHRC will be chaired by the Group General Counsel, who is the Head of Legal & Compliance. Members of Solvay's Global Business Units and other Business Service Activities will contribute to the work of the GHRC, as required, on an ad hoc basis.

Going forward, it will be the responsibility of the GHRC to provide an annual written summary of its activities (including KPI results) to the Executive Committee in advance of the issuance of the Group's Annual Report and to validate the Human Rights reporting made in conjunction with the issuance of that Report. Upon request, the Chair of the GHRC may be called upon to provide an annual report to the Audit Committee.

Solvay is also a pilot participant in the Belgium Commission for Children's Rights and Business Principles.



Solvay Human Rights in Business Policy

Competition Law policy

Solvay's goal is to conduct business ethically and not to enter into any business arrangements that eliminate or distort competition. Solvay is committed to developing and maintaining a culture of compliance to keep Solvay and its people on the right side of the law. Solvay has a formal Competition Law policy which stresses the importance of strict adherence to all competition laws. This formal Competition Law policy was approved by Solvay's Executive Committee and is published on the intranet, to which all Solvay's employees have access. Any violation of this policy may result in disciplinary action, subject to and in conformity with applicable laws.

Resources and responsibilities

A Compliance organization under the leadership of the Group General Counsel enhances a Group-wide culture based on ethics and compliance.

Regional Compliance Officers serve in all four zones where the Group operates. Every Solvay Global Business Unit and function appoints Compliance Liaisons to enhance adherence to compliance objectives and to instill a commitment to compliance throughout Solvay.

Implementation of the competition law policy

Solvay has put in place a Competition Compliance Program which propagates a zero tolerance approach towards competition law infringements. Solvay has dedicated resources within the Legal

Function responsible for the implementation of the Competition Law Compliance Program. They are in charge of providing competition law advice and guidance, as well as deploying effective and recurrent communication and training on competition law-related subjects.

As part of its Compliance Program, Solvay provides a Competition Law Tool-Kit on its intranet that includes up-to-date guidelines on specific areas of competition law, on dealing with competitors, information exchange in M&A transactions, swaps, price announcements, volume allocation in case of shortage, vertical agreements, rebates and discounts under European law, agency and distribution agreements, etc.

To minimize cartel risks, Solvay has put in place a computerbased system that tracks all contacts of relevant employees with competitors through a managerial approval procedure (CCTS).

Grievance mechanisms

Employees are encouraged to report violations as a condition of employment through various internal avenues, including management, Human Resources, Legal & Compliance, and Internal Audit.

A Group-wide Speak Up program is in place and overseen by the Audit Committee of the Board of Directors. An external thirdparty helpline active 24 hours a day, 365 days a year allows employees to ask questions, raise concerns or file reports.

The following chart shows the types of claims submitted in 2017 through Solvay's Speak Up program:

Type of Grievance

Number of claims	2017	2016
Misconduct or Inappropriate Behavior	26	18
Discrimination/Harassment	15	16
Conflict of Interest	7	12
Computer, Email, Internet	1	0
Environmental, Health or Safety Law	6	6
Accounting or Auditing	2	3
Anti-Bribery	2	0
Confidentiality/Misappropriation	2	2
International Trade Compliance	0	1
Substance Abuse	1	0
Theft	3	1
Violence or Threat	2	0
Other	16	6
Total	83	65

Through the Speak Up program, any concern regarding a breach is investigated by the Ethics & Compliance function. In keeping with its commitment to transparency, the Speak Up tool is used to report progress on the investigation and is used to communicate the results of investigations directly to the

reporters upon conclusion. Posters and an online brochure are available to employees and advertise the web address and toll-free numbers to access this tool in their regions. The Board's Audit Committee oversees the running of Speak Up.

83 Total claims made

71
Total claims closed*

19 Substantiated claims among resolved cases 38
Unsubstantiated claims among resolved cases

^{*} Includes cases for which there was insufficient information or cases that were misdirected or referred

-						
Resolved Cases	No Action	Policy Review	Training	Discipline	Termination	Resignation
Substantiated		21%	11%	5%	58%	5%
Unsubstantiated	58%	37%	5%			

Communication and training Solvay's Code of Conduct

Code of Conduct training (web-based training) is organized to ensure understanding and to address behavioral risks such as anti-trust, anti-bribery and corruption, and human rights abuses. Specific anti-corruption training is tailored to management and other personnel in sensitive positions (sales, procurement, industrial development, etc.). Special campaigns to maintain and/ or enhance the level of awareness within the Group are identified and adopted annually. New employee training is organized as part of the orientation process.

Anti-Competition

Solvay has a concrete Action Plan designed to mitigate the specific risks identified. It has been in force since 2003 and is updated yearly. In 2017, this action plan included a new onboarder antitrust training followed successfully by 132 relevant on-boarders, as well as Contacts with Competitors Tracking System (CCTS) training for 241 individuals and additional tailored face-to-face training sessions for 280 high-risk individuals.

Annual Internal Audits check effective implementation of the Action Plan.

Anti-Corruption

Anti-Bribery and anti-corruption training was the focus of a 2016-2017 campaign that reached Leadership Teams in numerous GBUs and Business Support Activities, as well as employees in sensitive business positions. Commencing with the training of the Executive Committee and its Leadership Council in 2016, training has now been conducted in all four regions in which Solvay does business and included targeted training for Sales & Marketing teams throughout the world. Through this program, more than 1,000 persons have received live training, the majority of it occurring in 2017. A web-based training is now ready for introduction to all employees who will be assigned by their management in 2018. Anti-bribery and anti-corruption topics continue to be offered as part of the Code of Conduct training that is mandatory for all employees.

Human Rights

In 2017, the Group initiated a one-hour training course on its Human Rights in Business Policy. Over 90 members of the Legal & Compliance Function representing all regions received the training. For 2018, Solvay will prepare a global training template, conduct training for all Leadership Teams, plant managers, and sensitive populations (Purchasing, Human Resources, Industrial managers, Marketing & Sales), and will prepare a multilingual web-based training for all employees.

8.1.1. Health, safety, environment management and compliance Management approach

+ Highly material

Definition

Protecting people and the environment is part of Solvay's Sustainable Development policy and its health, safety, and environment policies. Health, safety, and environment aspects of Solvay's operations are managed in the framework of ad hoc management systems, with a focus on compliance with group rules and regulatory requirements. Management systems require risk analysis, monitoring of performance and compliance, follow-up of the corresponding corrective actions, performance reviews, and improvement plans.



2018

100%

100% of industrial sites to have a system in line with Group requirements

Health, safety, and environment management systems in manufacturing sites (2017)

	2017	2016
Solvay manufacturing sites	165	163
with integrated management systems addressing Health, Safety, and Environment	154	130

Compliance

HSE regulatory compliance is ensured at the site level and through audits. Each manufacturing site is audited at least once every five years. Audits are carried out by internal auditors or by external parties under contract. All identified compliance gaps identified by the HSE regulatory audits are addressed. They are preferably mitigated during the audit itself or recorded and included in an action plan.

Compliance follow-up in sites for health and hygiene, safety, and environment

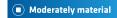
% of sites	2017	2016	2015
Sites with a compliance audit in the last 5 years in line with Group's requirements	96	75	50
Regulatory watch process in place at the site level	95	82	50

Scope: all manufacturing and R&I sites except newly integrated sites (Chemlogic and Cytec)

Regulatory watch process at the site level

One hundred six sites have installed a systematic system for HSE regulatory watch as required in line with the Group policy. This is done via third parties or using internal resources in order for every site to be aware of new regulations ahead of time. Sites equipped with such a system regularly receive alerts and updates on new regulatory requirements from their service provider based on the site's profile.

8.1.2. Public policy











The Government and Public Affairs (GPA) Department raises the Group's awareness of the general political context, the main challenges faced by public authorities, and more specific policy issues. In line with Solvay's values and ethics, the Group GPA team works to foster long-term partnerships with public authorities and other relevant stakeholders by building on transparent and constructive dialogue.

Commitments and positions

The typical issues in the scope of activities of the Government and Public Affairs function are the following:

- Fight against climate change: Solvay supports the Paris Climate agreement and contributes to its implementation. In this context, Solvay pleads for the development of a clear, predictable, and sustainable legislative framework for Climate Change policy in the EU and globally, ensuring a balanced transition to a low carbon economy.
- Competitiveness: Solvay advocates for a regulatory system that fosters industrial innovation and creates highly skilled jobs worldwide.
- Responsible chemicals handling: Solvay's CEO sponsors the International Council of Chemistry Associations' (ICCA) Responsible Care program to encourage the safe handling of chemicals around the world and across the value chain.
- **Environment**: Solvay collaborates with trade associations and public authorities to develop and implement effective environmental regulations and standards.
- **Trade**: as an international company, Solvay recognizes the importance of free trade. Reducing trade barriers is essential for economic growth and thus for industrial activity.

Resources and responsibilities

The Solvay Global GPA team counts nineteen employees, who work to establish a permanent dialogue and a long-term partnership with public authorities and other relevant stakeholders.

This includes participation in many trade associations, such as the World Business Council for Sustainable Development (WBCSD), the International Council of Chemistry Associations (ICCA), BusinessEurope, the European Round Table of Industrialists (ERT), the American Chemistry Council (ACC), the European Chemical Industry Council (CEFIC), and Corporate and Social Responsibility Europe (CSR).

Solvay's political contributions

The Group does not take part in party political activities, nor does it make corporate donations to political parties or candidates. However, the Group will engage in a constructive debate with public authorities on subjects of legitimate interest to Solvay. Only those employees specifically authorized to do so will carry out these activities.

Solvay respects the freedom of its employees to make their own political decisions. Any personal participation or involvement by an employee in the political process must be on an individual basis, on the employee's own time, and at the employee's personal expense.

8.1.3. Animal testing

+ Highly material

Solvay provides innovative products for a wide variety of uses and a large number of users. A proper understanding of products' hazards is indispensable for the Group's to continue its activities and protect users, the general public, Solvay personnel, and the environment. Society expresses a continuing demand for new, better, and safer chemicals and plastics. There is a growing demand for product risk and hazard assessments by regulatory authorities and the public which, in turn, requires testing, both with and without using animals.

Management approach

All Solvay businesses are required to adhere to the Solvay Animal Care and Use Standard. A Solvay corporate committee is in charge of monitoring compliance with the standard.

Solvay's Animal Care and Use Standard is based on the 3Rs (Replacement, Reduction and Refinement). All studies are performed by Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC)-accredited laboratories. This worldwide organization sets the quality standards for testing laboratories and ensures responsible and humane treatment of laboratory animals.

Prior to initiation, all studies commissioned by Solvay are subject to an ethical assessment at the local or national level by the laboratory conducting the study. Once a study is underway, Solvay staff monitor the execution and quality of the studies and conduct a continuing qualification and evaluation program for the laboratories in place.

Typically, tests are carried out once, on individual substances. Those substances are then mixed, used and/or sold by Solvay for the manufacture of a wide variety of final products and applications.

Indicators

To comply with existing and future chemical regulations, Solvay continued to commission animal tests in 2017. When tests are needed, Solvay commits to the greatest care, professionalism, animal welfare, and humaneness.

2017 Animal testing

	Number of	Number of
	studies	vertebrates
Registration obligations (EU, China, Korea)	28	2,943
Additional product safety questions (toxicity, classification)	32	410
Total	60	3,353

In total, 3,353 vertebrate animals (77% rats, 10% mice, 2% rabbits, 8% fish, and 3% guinea pigs) were used in 2017. The number of tests on vertebrate animals is driven by the number of studies for registration obligations. In 2017, there was a significant decrease in registration obligations (from 56 in 2016 to 28). The number of tests on vertebrate animals also decreased, from 11.002 in 2016 to 2.943.

All studies comply with international standards, and care was taken to avoid future duplication of testing by simultaneously addressing the requirements of several countries or regulations in a single study.

Limiting the number of studies

Solvay adheres to the objective outlined in Europe's REACH regulation, i.e. promoting non-animal testing and the replacement, reduction, and refinement of animal testing.

In 2017, 84% of vertebrate animals tested were used in the framework of the REACH Regulation.

The increased regulatory acceptance of in vitro tests for classification purposes has allowed Solvay to replace a number of in vivo studies with alternative tests, especially in the field of skin irritation, eye irritation, and skin sensitization.

Another alternative to in vivo testing is the use of in silico methodologies, which predict substance properties based on existing data on other similar substances (structure-activity relationships). Solvay has continued to apply this methodology as the first-tier approach when new information on a substance is required. Moreover, a three-year project was launched in 2017 in collaboration with the University of Strasbourg (France) to reinforce this capability by further developing such approaches, using in-house and Solvay-specific data.

8.2. Process accident and safety















56 situations with high risks

0 High incidents

281 Medium incidents

0.9 Process safety rate

Definition

Process accident and safety focuses on preventing and controlling incidents in industrial processes, especially scenarios involving potentially catastrophic consequences for people or the environment. Solvay's process safety management is risk-based. Process safety programs continue to ensure the integrity of operations and incorporate good design principles alongside

best engineering and operating practices. Emergency preparedness and response and the management of contaminated soils are also key aspects.

Why is it material?

Management approach

The identification of risk 1 situations (situations with the highest risk) and their in-time management are audited in the frame of the Health, Safety, and Environment management and compliance. Solvay deploys rules and indicators to monitor:

- · risk analysis programs,
- identification and mitigation of Risk Level 1 situations,
- implementation of process safety management systems at sites,
- · incident follow-up and reporting.

Completion of the risk analysis program is part of the Solvay HSE dashboard regularly reviewed by the Executive Committee. All Solvay industrial and Research and Innovation sites are required to develop and implement an ad hoc process safety management system (PSM). They must implement the PSM practices required by the Group and adapted to their risk level, according to a classification system defined in 2015.

Process safety monthly bulletins are widely distributed in 14 languages. They describe incidents that have occurred at Solvay sites and provide recommendations for improvement.

Indicators Risk analysis program

The main pillar of Solvay's preventive, risk-based approach is the process risk analysis of existing, new, or modified installations. Quantified risk analysis is a best practice among industrial companies: standardized risk analysis makes it possible to quantify the risk level of every possible accident scenario, combining severity and probability factors. Risk analysis forms the backbone of risk control.



2020

100%

of the sites with a risk analysis updated in the last five years, for every production line

In %	2017	2016	2015
Percentage of concerned product lines having a risk analysis updated in the last five			
years	77	65	69

Scope: The consolidated data for process safety risk analysis covers 134 sites out of a total of 145 operational sites, including R&I sites.

The risk analysis program makes it possible to identify major accident scenarios and take the necessary preventive measures to make the level of risk acceptable. Solvay uses tiered risk analysis methods and adapts them to the level of potential hazard of every process at every GBU. The increase between 2016 and 2017 is mainly due to the deployment of the simplified method - called PRAMAPOR - for material and processes with low potential hazards.

Mitigation of priority risks

A systematic approach is used across the whole Group to efficiently identify and remediate the highest risks. Handling 100% of "Level 1 Risk Sheet" situations – situations with the

highest risks – is a key element of Solvay's process safety policy, as prescribed by Solvay's "Red Line" on health, safety, and environment risk management. The Group has repeatedly succeeded in resolving all level 1 risk sheet situations within one year. This represents 48 risks level 1 situation resolved.

Red Lines are essential Solvay rules that must be respected to the extent that they cover issues which constitute major risks for the Group. All major identified risks are validated and reported at corporate level. Then, as defined by the Red Line, they must be mitigated within a maximum of one year.

Mitigation Process Safety Risk Level 1 situations

	2017	2016	2015
Number of "risk sheets level 1" at the end of the year	56	46	94

Scope: The consolidated data for process safety risk analysis covers 134 sites out of a total of 145 operational sites, including R&I sites.

Process safety management systems (PSM)



In %	2017	2016	2015
Sites with required PSM practices in line with their PSM level	79	90	84

Scope: The consolidated data for PSM system analysis covers 145 operational sites, including R&I sites.

The decrease of the figures between 2016 and 2017 can be explained by the change of the calculation methodology. 2017 has been calculated based on the number of sites audited whereas data in 2016 and 2015 have been calculated based on all sites.

Breakdown of sites according to their Process Safety Management (PSM) level

In %	2017	2016
Sites with a PSM level 1 (Low)	49	54
Sites with a PSM level 2 (Medium)	41	34
Sites with a PSM level 3 (High)	10	11

 $Scope: The \ consolidated \ data \ for \ PSM \ system \ analysis \ covers \ 145 \ operational \ sites, \ including \ R\&I \ sites.$

Process safety incidents

Solvay's target is to avoid any high severity incident and to reduce the incident rate for medium severity incidents. Solvay's incident rate (PSI rate) is consistent with the method proposed by the International Council of Chemical Associations (ICCA).

Incidents per 100 full time employee (employees and contractors, assuming 2,000			
hours of work/worker/year)	2017	2016	2015
Process safety rate	0.9	0.7	0.6

The increasing trend in the number of reported PSIs reflects the increasing number of reporting sites, along the newly introduced reporting process.

Solvay has a worldwide rule for reporting process safety incidents based on a severity matrix that takes into account :

• the consequences for people;

- · for the environment;
- damages to assets and volumes of chemicals released.

Reportable incidents are classified according to severity (medium, high, and catastrophic). No catastrophic incidents have been reported since 2012.

Process incidents classified according to severity

Number	2017	2016	2015
Medium	281	259	215
High	0	1	1

Scope: The consolidated data for process safety incident covers 134 sites out of a total of 145 operational sites, including R&I sites.

8.2.1. Environmental accidents and remediation

Highly material











Spill prevention is an important part of process safety management. In parallel, Solvay has to manage historical soil and groundwater contamination. Such environmental legacies must be managed and remediated to protect health and the environment at an acceptable cost.

The objectives are to:

- Prevent the unintentional release of chemicals into the air. water, and soil:
- Characterize the nature and extent of soil and groundwater contamination:

• Manage the impact of soil and groundwater contamination in agreement with regulatory agencies.

Follow-up of incidents with environmental consequences

No High or Catastrophic severity incidents were reported for 2017, meaning there was no accidental event with long-term damage off site for the environment.

Process incidents with environmental consequences are being monitored and classified according to several criteria: quantity of material spilled, consequences on site or off site, damage to the immediate vicinity, fish kills, and severity (medium, high, and catastrophic).

In 2017, 59 incidents with environmental consequences were reported, and among those, 27 process were associated with releases above operating limits. The Group has followed up on each incident to ensure adequate actions are taken to avoid recurrence.

	2017	2016
Number of medium-severity incidents with environmental consequences	59	40
of which those with operating permit exceedance	27	26

Remediating soils after spills

Solvay manages soil contamination and related environmental financial provisions with a long-term vision. Assessing soil conditions is a key step in characterizing contamination and, if needed, defining the most appropriate treatments in case of soil contamination. Whenever concerned, a sites is investigated. For existing soil contaminations resulting from own activities or from acquired activities, management control and remediation projects are implemented on a site-specific basis (legal and technical context). Solvay's soil management is in line with the most recent developments in this area.

Innovative remediation approaches

Identifying new remediation technologies and improving existing ones is an ongoing activity. A project has just started to improve the efficiency of nanoparticles of iron introduced into the soil to remediate chlorinated compounds, hence improving the economical balance of the technology. This project is a followup of the Nanorem EU-funded project and is subsidised by the Czech Republic.

8.2.2. Emergency preparedness

+ Highly material













Emergency Preparedness and Response plans in Solvay's plants encompass off-site emergencies related to transport and distribution, including periodic simulations and training sessions. In addition, Solvay seeks to ensure worldwide emergency response when there are incidents involving its products.

Worldwide emergency assistance

Mitigating the consequences of transport incidents is equally important. For worldwide emergency assistance, Solvay continues to rely on the services of Carechem 24 (and Chemtrec in the US). This service answers any call anywhere in the world, supplying technical advice in the caller's language 24 hours a day. Phone numbers are displayed on Safety Data Sheets, transport documents, and labeling.

Within their areas, Solvay sites offer assistance via national chemical emergency plans, where such plans exist. Such involvement currently covers the following 12 countries: Austria, Belgium, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden, Thailand, the United Kingdom, and the United States.

Medical emergency response

109

sites performed emergency drills including scenarios with injured persons during 2017

In order to follow how medical emergency preparedness is included in emergency drills, an indicator was introduced in 2017. 69% of sites performed emergency drills including scenarios with injured persons during 2017.

A survey of Asia Pacific sites medical emergency responses was conducted to catalogue current practices and define what is still needed to ensure timely access to quality medical treatment the event of an emergency.

Topics covered included:

- Hospitals and ambulances (characteristics, usual time to arrive to the site, etc.);
- Site specifics, such as medical emergency response plans, drills, first responder training, physicians and nurses, antidotes, and specific needs;
- · Local regulations.

The survey made it possible to craft a site-level action plan proposal.

8.3. Supply chain management











39,400 Suppliers worldwide 76% Local suppliers

810 Critical suppliers

Management approach

The purchasing and supply chain organization is designed to coordinate the entire network of Purchasing and Supply Chain professionals, who number around 400 and around 2,400 respectively. They are responsible for:

- creating additional value through simple and clear purchasing processes and excellence programs;
- and for organizing a sustainable and timely supply of goods and services to all of Solvay's sites and customers.

The organization must provide not only the required level of service and safety, but also an optimized total cost of ownership. The purchasing strategy is defined by the Purchasing and Supply Chain Excellence Function, jointly with the 12 GBUs. The strategy can be executed and deployed at a global, regional or local level, whichever best leverages the supplier market structure.

The Function implemented a new governance structure, with a Leadership Team focusing on strategy and a newly appointed Management Team focusing on operational execution.

Purchasing CSR Committee

Solvay has also set up a CSR committee in charge of making decisions about any potential exceptions to the rules and any serious breach of the principles inherent to the Solvay Supplier Code of Conduct.

Based on the due diligence performed to date:

- the Group has terminated its relationship with one transportation supplier whose activities were questionable.
- Solvay also decided to not commit to a contract with a Japanese supplier that sets out good commercial conditions until he agreed to conduct a CSR assessment. Eventually, this supplier decided to go through a third party CSR assessment.
- As another example, we have conducted a due diligence of our 25 hauliers located in Belgium in order to ensure that they comply with applicable laws and the Solvay Supplier Code of Conduct. Solvay performed this due diligence in response to incidents of some Belgian hauliers exposing their employees to inhumane treatment and poor working conditions. As these may not be isolated cases, the Group asked all Belgian hauliers to reaffirm their commitment to the Supplier Code of Conduct. Hauliers generally welcomed the initiative, with 18 having responded so far. However, further action is required for seven hauliers that have not yet replied despite reminders.
- Furthermore, an offer for anthracite from Ukraine was refused because a bid far below market level was received and would have breached fair business practices. Two transport companies were confronted with legal issues; Solvay reviewed the information the suppliers provided and deemed it satisfactory to permit continuation of the relationship. Meanwhile, the outcome of the prosecution is being monitored.

Our suppliers

Solvay purchases raw materials to manufacture its 14,000 distinct finished products, technical goods for its production sites, and various kinds of services such as transport, technical maintenance, and consultancy. Together, these purchases amount to around € 7.5 billion. Solvay has 39,400 suppliers worldwide. Nevertheless, 76% of this spend is sourced locally.

The suppliers work with Solvay throughout the whole value chain, from the delivery of raw materials through production, to logistics services, to transporting the finished products to the Group's customers.

Among its suppliers, Solvay has identified 810 "critical suppliers". These suppliers have been selected either because they present a risk to the business, social standards, or the environment, or because Solvay is developing or wishes to develop an innovation in partnership with them.

Solvay requires these critical suppliers to pass a third-party Corporate Social Responsibility (CSR) assessment and implement an action plan to mitigate risk if the supplier does not meet the Group's standard requirements. By doing so, Solvay expects a significant long-term improvement in its suppliers' sustainability practices and a positive impact on its supply chain sustainability. The share of critical suppliers represents at least 55% of Solvay's total spend.

The Group's ambition is to assess all critical suppliers before the end of 2020. At the end of 2017, half of the 810 critical suppliers had been assessed by a third party, and buyers are following up on improvements to 69 suppliers through a corrective action plan.

2017 Solvay's critical suppliers

-	Raw Materials	Technical Goods and Services	Logistics and Packaging	Energy	General Ex- penses IT and Telecom	Total
Asia Pacific	190	76	79	21	8	374
Europe, Middle East, Africa	78	21	114	20	22	255
Latin America	8	1	21	2	2	34
North America	56	4	75	4	8	187
Total	332	102	289	47	40	810

Our policies

In 2016, Solvay adopted its Responsible Purchasing and Sustainable Supply Chain Statement. This statement outlines how Solvay conducts business with its suppliers, what it expects from them, and what they can expect from Solvay. It covers, inter alia, Solvay's contribution to a circular economy and conflict-free minerals. The Statement is published on the Solvay website and helps Solvay to demonstrate to customers its commitment to sustainability. The commitments Solvay makes in this Statement are progressively embedded in its sourcing strategies.

@ Responsible Purchasing and Sustainable Supply Chain Statement

Solvay's partnership with the Ellen MacArthur Foundation will boost the incorporation of the circular economy principles into the purchasing activities and develop innovation initiatives in collaboration with our suppliers.

Solvay's partnership with the Ellen MacArthur Foundation

Moreover, in 2017 Solvay reinforced its commitment to meeting its responsibility to respect human rights and issued a new Solvay Human Rights in Business Policy, which covers all Solvay Business Partners, including suppliers. During this year, the Group has terminated its relationship with one transportation supplier who did not properly respect the principles set up in this policy.

Solvay's Human Rights in Business Policy

Solvay Way commitments

SOLVAY Walz

Solvay Way is fully embedded in the Solvay Purchasing Processes, and progress is evaluated annually.

- ⊕ 100% of buyers include CSR prerequisites in supplier's selection process.
- ⊕ More than 55% of Solvay's spend is covered by a CSR approach that includes questionnaires, assessments, and/or audits.
- Complying with CSR requirements is part of buyers' performance as assessed in their Performance Development Career Review (PCDR).

Buyers are also now taking CSR impacts into account when selecting innovation projects with their strategic suppliers. These projects are developed jointly in collaboration with the suppliers. For example, Solvay works closely with a supplier to substitute the us of coal by Refuse Derived Fuel to generate the steam needed for the factory.

Solvay way approach and Solvay Way commitments management and practices

Solvay's supplier code of conduct

Solvay's Supplier Code of Conduct is aligned with Solvay's Code of Conduct and the CSR agreement with IndustriALL Global Union. It was inspired by the UN Global Compact principles and Responsible Care® practices.

All written purchase contracts need to make reference to the Solvay Supplier Code of Conduct or a valid alternative. In addition, and notwithstanding the existence or the absence of a written purchase contract, all critical suppliers must subscribe to the principles detailed in the Solvay Supplier Code of Conduct.

Solvay achieved full implementation of the Supplier Code of Conduct in 2017, in accordance with the above principles.

Solvay extended its purchasing contracts over the course of 2017 to include an additional clause by which the supplier commits to a CSR assessment and an improvement plan and, ultimately, Solvay may interrupt the contract in the event of a material breach.

Through its CSR committee, Solvay ensures compliance with its Supplier Code of Conduct. For instance, the issue related to working hours in Asia has been addressed in CSR committee and has been escalated to Together for Sustainability (TfS) to define a joint position of our TfS partners.

CSR Supplier assessment and audits Together for Sustainability

In 2011, Solvay became a founding member of the Together for Sustainability initiative (TfS), an international non-profit association located in the CEFIC offices in Brussels. TfS aims to develop and implement a global audit program to assess and improve sustainability practices within the supply chains of the chemical industry. TfS welcomed its 20th member, Borealis, in 2017.

Following the principle, "An audit for one is an audit for all", sustainability assessments and audits are shared between all of its members, resulting in fewer individual requests for multiple standards and a more efficient allocation of resources. Ultimately, collaboration within the initiative could lead to a common standard for benchmarking the sustainability performance of companies within chemical industry supply chains

Solvay is actively supporting TfS development, CPO Kristian Saksida is member of the TfS Steering Committee, and several employees are directly involved in TfS work streams, as well as in regional teams (United States, Asia and South America).

Since the start of the TfS initiative, almost 10,000 supplier sustainability evaluations have been conducted under the TfS program. The sustainability performance of 8,692 suppliers has been rated within the TfS initiative based on EcoVadis assessments, and 1,187 TfS audits have been conducted by means of the TfS Audit Program.

In the year 2017, 1,794 new supplier assessments were done via EcoVadis, and 441 TfS audits were conducted through the TfS Audit Program. In the framework of the TfS initiative, 857 of Solvay's suppliers have meanwhile been assessed by EcoVadis. 4,057 suppliers have already gone through a re-assessment process, and 60% of these suppliers improved their score.

In 2017, Solvay strengthened its efforts to initiate sustainability audits based on the TfS methodology. More than 30 conducted audits revealed 120 major findings. These findings are subject to Corrective Action Plans followed up by the buyers to ensure improvement.

Solvay also likes to award its top performing supplier in CSR. It has recognized Mondi Industrial Bags as Solvay's best supplier in terms of corporate social responsibility (CSR). The award was based on 2017 rankings by EcoVadis, a company that monitors sustainability in global supply chains. Mondi achieved a score of 83 out of 100, the highest score of all Solvay (score 77/100) suppliers in the EcoVadis ranking. Mondi scored above average in all categories, scoring in the top 1 percent of all EcoVadis suppliers. The scoring takes into account factors related to the environment (100/100), labour practices (90/100), fair business practices (70/100), and sustainable procurement (60/100). On sustainable procurement, Solvay shared its approach with Mondi to help the company to improve further.

Solvay supports CSR supplier training in Shanghai

On September 19, 2017, CPCIF (China Petrochemical Industry Federation) and TfS (Together for Sustainability) jointly organized the Supplier Training in Shanghai. About 300 participants from Chinese suppliers and TfS member companies joined the training taught by TfS member company representatives from BASF, Covestro and Solvay. The training was conducted in Mandarin so that the content could be communicated more effectively to the Chinese-speaking community.

Supplier Relationship Management

Last year we completed the full roll-out of our Supplier Relationship Management tool, Convergence. This tool supports our work with suppliers.

Our "Every Buyer Every Visit" (EBEV) approach, which requires each buyer to write a report on the CSR topics they discussed with the supplier, is now fully integrated into Convergence. In the

visit minutes section, specific fields have been added to register discussions about CSR aspects such as the Supplier Code of Conduct, Health, Safety and Environment, and Innovation. The Group recorded 2,771 EBEV reports in 2017. "Success stories" are a special feature integrated into the EBEV report. If a buyer is able to suggest that a supplier realize certain improvement actions during a visit and observes that the suggestions are translated into successful action, a success story is registered. Success stories not only provide evidence of concrete improvements realized in collaboration with the supplier, they can also inspire other buyers to realize similar actions.

If the performance of a third-party assessment is not feasible for the supplier, for instance in cases of small spends or urgent purchases, Solvay uses its Standardized CSR Questionnaire.

The full integration of the CSR Questionnaire into Convergence lets us send a link to the supplier giving access to the online questionnaire rather than asking them to fill in an Excel file. Once a supplier has completed the questionnaire, it is recorded in Convergence and every Solvay buyer can consult the result, so the supplier won't be asked to complete the questionnaire multiple times. All results are stored in a shared repository, which also allows us to better monitor underperforming suppliers.

Purchasing and Supply Chain Academies

Solvay launched a Purchasing Academy and a Supply Chain Academy to further develop the Group's talents, improve their skill sets, and increase their ability to deliver on more challenging personal objectives, all while building world-class capabilities.

The Purchasing Academy has designed three learning programs for different aspects of the purchasing experience, with 20 modules. The modules mirror various aspects of the purchasing process to develop and improve the professional skills and expertise of our purchasing job family.

685 supply chain employees people from over 14 countries have been trained in the Supply chain Academy. To date, the Academy has developed and deployed four modules for Supply Chain professionals. The modules focus on actions and experience, and they include sustainable topics, e.g. optimizing the use of alternative non-polluting transportation or taking CO₂ emissions into account.

8.3.1. Raw materials











As a large chemical manufacturer, Solvay uses raw materials from a range of suppliers and sources: it used or purchased over 4.8 million tons in 2017. The Solvay group transforms large quantities of petrochemicals and uses large amounts of water.

Conflict-free minerals policy

Solvay supports increased supply chain transparency and sources conflict-free minerals: Solvay is concerned that the trade in tantalum, tin, tungsten and gold - and the metals refined from such minerals (referred to as 3TGs) - mined in certain conflict affected and high risk regions, including but not limited to the Democratic Republic of the Congo and its adjoining countries, may be contributing to human rights abuses. We pledge to continue working to verify the integrity of our sourcing, and to support the actions of governments, our customers and suppliers toward this end on a global basis. To the extent that our suppliers fail to meet our expectations in this regard, Solvay will take these factors into consideration in future business and sourcing decisions.

Non-biosourced and biosourced raw material - material purchased

1,000 tons	2017	2016
Mineral products	2,520	3,000
Biosourced products (agro-forestry and animal-based)	190	240
Natural gas	810	1,410
Petrochemicals	770	1,340
Other raw materials	480	530
Total	4,770	6,520

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FINANCIAL STATEMENTS

1. CONSOLIDATED FINANCIAL STATEMENTS

Solvay (the "Company") is a public limited liability company governed by Belgian law and quoted on Euronext Brussels and Euronext Paris. The principal activities of the Company, its subsidiaries, joint operations, joint ventures, and associates (jointly the "Group") are described in note F1 Segment information.

The consolidated financial statements were authorized for issue by the Board of Directors on February 27, 2018. They have been prepared in accordance with IFRS accounting policies, details of which are given below.

Main events and changes in consolidation scope during the year

On January 4, 2017, Solvay agreed to sell its formulated resins business to Altana AG's Elantas PDG Inc. Under the agreement, Solvay's Global Business Unit Technology Solutions has divested the business line, which generated sales of €17 million in 2016. The divestment includes the formulated resins product portfolio, the manufacturing and R&D facility based in Olean, New York, US, and all associated technical, commercial, and administrative staff. Completion of the transaction was subject to customary closing conditions, including antitrust approvals, and occurred on June 1, 2017. The assets of the business were presented as assets held for sale until completion of the transaction, which had no material impact on the result in the period.

On February 1, 2017, Solvay announced the acquisition of Energain™ Li-Ion high voltage technology from DuPont for €13 million. Energain™ technology and formulations enlarge Solvay Special Chem Global Business Unit's existing portfolio of high performance salts and additives for electrolytes and strengthen its capabilities to develop further innovative high-voltage solutions for Li-ion batteries.

On February 23, 2017, Solvay completed the divestment of its 58.77% stake in its Thai subsidiary, Vinythai PCL (Emerging Biochemicals), to Japanese company AGC Asahi Glass. The assets and liabilities of the business were presented as assets held for sale and associated liabilities in December 2016, following the announcement of the intended divestment. The transaction was based on a total enterprise value of 16.5 billion Thai baht (€435 million), and triggered a capital gain of €24 million, recognized in discontinued operations.

On March 24, 2017, Solvay signed a definitive agreement to sell its 25.1% shares in National Peroxide Limited (BOM:500298) to the Wadia Group, a conglomerate of corporate India and promoter shareholder of National Peroxide Limited. The transaction was closed in March with a capital gain of €13 million.

On March 30, 2017, Solvay signed a definitive agreement to sell its polyolefin cross-linkable compounds business in Italy to family-owned group Finproject SpA. Based in Roccabianca, Parma, the business makes compounds that are used in applications in the wire and cable industry and the pipe industry, generating sales of €82 million in 2016. Finproject is a leading manufacturer of injection molded foam, polyolefin-based compounds and PVC compounds. The transaction was subject to customary closing conditions and closed on June 8, 2017. The assets of the business were presented as assets held for sale until completion of the transaction, which triggered a capital gain of €43 million.

On May 31, 2017, Solvay completed the divestment of its cellulose acetate tow business, Acetow, to private equity funds managed by Blackstone. The assets and liabilities of the business were presented as assets held for sale and associated liabilities in December 2016, following the announcement of the intended divestment. The transaction was based on an enterprise value of around €1 billion, resulting in a net financial debt reduction of €734 million and a capital gain of €180 million recognized in discontinued operations, subject to potential post-closing adjustments.

Solvay has deconsolidated its investment in Venezuela triggered by the political situation in the country, and consequently a loss of $\[\]$ 72 million, related mainly to the $\[\]$ 60) million recycling of currency translation adjustments (CTAs), has been recognized in the second quarter.

On July 5, 2017, Solvay agreed to sell its 50% stake in Dacarto Benvic to its joint venture partner who will become the sole owner of the Brazilian PVC compounder. The transaction led to an impairment of $\mathfrak{E}(5)$ million in the second quarter and $\mathfrak{E}(8)$ million of CTA recycling and was completed on September 14, 2017.

On September 19, 2017, Solvay announced that it had entered into a binding agreement with German chemical company BASF for the sale of its Polyamides business. Under the proposed terms of the agreement, the transaction is based on an enterprise value of €1.6 billion. The expected net cash proceeds are estimated to be around €1.1 billion. The polyamide business to be divested has been reclassified to assets and liabilities held for sale and discontinued operations at the end of the third quarter. As a result of the discontinuation, the retained Latin American polyamide business incurred an impairment of €(91) million recognized at the end of September. This impairment is expected to be more than compensated by the capital gain on the transaction at the closing. Solvay and BASF aim to close the transaction in the second half of 2018, after customary regulatory approvals have been obtained.

On September 21, 2017, Solvay launched a cash tender offer to repurchase bonds on the following issuances:

- Senior US\$400 million debt at 3.5%, due in 2023,
- Senior US\$250 million debt at 3.95%, due in 2025,
- Senior €500 million debt at 4.625% due in 2018.

On September 28, 2017, Solvay published the final results of the repurchase operation related to the aforementioned issuances. It committed to repurchasing 51% of the outstanding aggregate principal amount of the US\$400 million senior bonds due in 2023 for a total amount of US\$204 million, 34.6% of the outstanding aggregate principal amount of the US\$250 million senior bonds due in 2025 for a total amount of US\$87 million, and 23.6% of the outstanding aggregate principal amount of the €500 million senior bonds due in 2018 for a total amount of €118 million. The repurchase closed on October 2 and resulted in an expense of

€(25) million, comprising an accretion (acceleration) amounting to €(10) million and premiums amounting to €(15) million (see note F6 Net financial charges).

On November 7, 2017, Solvay completed the acquisition of European Carbon Fiber GmbH ("ECF"), a German producer of high-quality "precursor" for large-tow (50K) polyacrylonitrile (PAN) carbon fibers.

On November 15, 2017, Solvay agreed to sell its US facility in Charleston, South Carolina, and the phosphorus derivatives-based products made at the plant to German specialty chemicals company Lanxess. Employees at the site will also be transferred. The products at the site are used primarily as intermediates in plastic additives, flame retardants, and agricultural applications. The business represents sales of approximately €65 million. The transaction was completed on February 8, 2018.

Consolidated income statement

In € million	Notes	2017	2016
Sales	(F1)	10,891	10,045
of which revenue from non-core activities	(F3)	766	476
of which net sales		10,125	9,568
Cost of goods sold		(7,805)	(7,213)
Gross margin		3,086	2,831
Commercial and administrative costs		(1,437)	(1,363)
Research and development costs		(290)	(284)
Other operating gains and losses	(F4)	(154)	(200)
Earnings from associates and joint ventures		44	85
Results from portfolio management and reassessments	(F5)	(188)	(157)
Results from legacy remediation and major litigations	(F5)	(84)	(54)
EBIT	(F2)	976	858
Cost of borrowings	(F6)	(172)	(187)
Interest on lendings and short term deposits	(F6)	15	13
Other gains and losses on net indebtedness	(F6)	(44)	(50)
Cost of discounting provisions	(F6)	(97)	(115)
Income/loss from available-for-sale financial assets	(F6)		5
Profit for the year before taxes		678	524
Income taxes	(F7)	197	68
Profit for the year from continuing operations		875	592
Profit (loss) for the year from discontinued operations	(F8)	241	82
Profit for the year	(F9)	1,116	674
attributable to:			
Solvay share		1,061	621
non-controlling interests		56	53
Basic earnings per share from continuing operations (€)		7.97	5.34
Basic earnings per share from discontinued operations (€)		2.29	0.67
Basic earnings per share (€)	(F10)	10.27	6.01
Diluted earnings per share from continuing operations (€)		7.92	5.33
Diluted earnings per share from discontinued operations (€)		2.28	0.66
Diluted earnings per share (€)	(F10)	10.19	5.99

Consolidated statement of comprehensive income

In € million	Notes	2017	2016
Profit for the year		1,116	674
Other comprehensive income			_
Recyclable components			_
Gains and losses on available-for-sale financial assets	(F11)	(1)	9
Gains and losses on hedging instruments in a cash flow hedge	(F11)	15	36
Currency translation differences – Subsidiaries and joint operations	(F11)	(790)	278
Currency translation differences – Associates and joint ventures	(F11)	(40)	51
Non recyclable components			
Remeasurements of the net defined benefit liability	(F11)	95	(275)
Income tax relating to recyclable and non recyclable components	(F11)	37	56
Other comprehensive income, net of related tax effects	(F11)	(684)	155
Comprehensive income for the year		433	830
attributable to:			
Solvay share		412	762
non-controlling interests		20	67

Consolidated statement of cash flows

The amounts below include both continuing and discontinued operations.

In € million	Notes	2017	2016
Profit for the year		1,116	674
Adjustments to profit for the year			
Depreciation, amortization and impairments	(F12)	1,152	1,302
Earnings from associates and joint ventures		(44)	(86)
Other non operating and non cash items	(F13)	(179)	(16)
Net financial charges and income/loss from available-for-sale financial assets		302	374
Income tax expense	(F14)	(131)	(21)
Changes in working capital	(F15)	(216)	(99)
Changes in provisions	(F16)	(192)	(151)
Dividends received from associates and joint ventures		18	22
Income taxes paid (excl. income taxes paid on sale of investments)	(F14)	(223)	(212)
Cash flow from operating activities		1,604	1,788
of which cash flow linked to acquisition of subsidiaries and excluded from Free Cash Flow		(23)	7
Acquisition (-) of subsidiaries	(F17)	(44)	(23)
Acquisition (-) of investments – Other	(F17)	(11)	4
Loans to associates and non consolidated companies		(7)	(25)
Sale (+) of subsidiaries and investments	(F17)	891	144
Income taxes paid on sale of investments	(F17)	(14)	
Acquisition (-) of property, plant and equipment	(F17)	(707)	(883)
of which capital expenditures required by share sale agreement and excluded from Free Cash Flow		(12)	
Acquisition (-) of intangible assets	(F17)	(115)	(98)
Sale (+) of property, plant and equipment and intangible assets	(F17)	75	76
of which cash flow related to the sale of real estate in the context of restructuring/dismantling/remediation		12	35
Dividends from available-for-sale financial assets		2	
Changes in non-current financial assets		(1)	(2)
Cash flow from investing activities		70	(807)
Acquisition (-) / sale (+) of treasury shares	(F35)	(14)	(55)
Increase in borrowings	(F33)	1,692	1,133
Repayment of borrowings	(F33)	(2,584)	(2,300)
Changes in other current financial assets	(F33)	(27)	(50)
Interests paid		(255)	(216)
Coupons paid on perpetual hybrid bonds	(F18)	(111)	(84)
Dividends paid		(396)	(386)
Other	(F19)	13	7
Cash flow from financing activities		(1,684)	(1,951)
Net change in cash and cash equivalents		(10)	(970)
Currency translation differences		(52)	(12)
Opening cash balance		1,054	2,037
Closing cash balance ⁽¹⁾	(F33)	992	1,054

⁽¹⁾ Including cash in assets held for sale (€ 0 million in 2017 and € 85 million in 2016).

Consolidated cash flows from discontinued operations

In € million	Notes	2017	2016
Cash flow from operating activities		183	351
Cash flow from investing activities		(105)	(166)
Cash flow from financing activities		(1)	(67)
Net change in cash and cash equivalents	(F20)	77	118

The cash flow from investing activities of discontinued operations excludes the proceeds linked to the divestments (Acetow and Emerging Biochemicals in 2017; Indupa in 2016).

Consolidated statement of financial position

In € million	Notes Notes	2017	2016
ASSETS			
Non-current assets		15,394	17,548
Intangible assets	(F21)	2,940	3,600
Goodwill	(F22)	5,042	5,679
Property, plant and equipment	(F23)	5,433	6,472
Available-for-sale financial assets	(F32)	44	44
Investments in associates and joint ventures	(F26)	466	497
Other investments	(F27)	47	55
Deferred tax assets	(F7)	1,076	890
Loans and other assets	(F32)	346	312
Current assets		6,057	6,597
Inventories	(F29)	1,504	1,672
Trade receivables	(F32)	1,462	1,621
Income tax receivables		100	166
Dividends receivables			2
Other financial instrument receivables	(F32)	89	101
Other receivables	(F30)	627	736
Cash and cash equivalents	(F33)	992	969
Assets held for sale	(F25)	1,284	1,331
Total assets		21,451	24,145
EQUITY & LIABILITIES			
Total equity		9,752	9,956
Share capital	(F18)	1,588	1,588
Reserves		8,051	8,118
Non-controlling interests		113	250
Non-current liabilities		7,571	9,188
Provisions for employee benefits	(F31)	2,816	3,118
Other provisions	(F31)	793	860
Deferred tax liabilities	(F7)	600	909
Financial debt	(F33)	3,182	4,087
Other liabilities		180	214
Current liabilities		4,128	5,001
Other provisions	(F31)	281	291
Financial debt	(F33)	1,044	1,338
Trade payables	(F32)	1,330	1,547
Income tax payables		129	197
Dividends payables		147	139
Other liabilities	(F34)	848	1,086
Liabilities associated with assets held for sale	(F25)	349	403
Total equity & liabilities		21,451	24,145

Consolidated statement of changes in equity

				Equity	attributable	to equity	/ holders	of the parent					
						, ,		Revaluation (Fair v	n reserve				
In € million	Notes	Share capital	Share pre- miums	Trea- sury shares	Perpet- ual hybrid bonds	Re- tained earn- ings	Cur- rency trans- lation differ- ences	Available- for-sale financial assets	Cash flow hedges	Defined benefit pension plan	Total re- serves	e- inter-	Total equity
Balance at December 31, 2015		1,588	1,170	(230)	2,188	5,720	(353)	(2)	(28)	(630)	7,834	245	9,668
Profit (loss) for the year						621					621	53	674
Items of other comprehensive income	(F11)						313	10	23	(205)	141	14	155
Comprehensive income						621	313	10	23	(205)	762	67	830
Cost of stock options						9					9		9
Dividends						(336)					(336)	(45)	(381)
Coupons of perpetual hybrid bonds						(84)					(84)		(84)
Acquisition (-) / sale of treasury shares				(44)		(13)					(57)		(57)
Increase / decrease (-) through changes in ownership interests in subsidiaries that do not result in loss of control						(19)				7	(12)	(17)	(29)
Balance at December 31, 2016		1,588	1,170	(274)	2,188	5,899	(39)	8	(5)	(828)	8,117	250	9,956
Profit (loss) for the year						1,061					1,061	56	1,116
Items of other comprehensive income	(F11)						(795)	(3)	22	128	(648)	(35)	(684)
Comprehensive income						1,061	(795)	(3)	22	128	412	20	433
Cost of stock options						10					10		10
Coupons of perpetual hybrid bonds						(363)					(363)	(41)	(404)
Acquisition (-) / sale of treasury shares				(7)		(7)					(14)		(14)
Increase / decrease (-) through changes in ownership interests in subsidiaries that result in loss of control				(*)		(34)				34	1	(117)	(116)
Balance at December 31, 2017		1,588	1,170	(281)	2,188	6,454	(834)	5	16	(665)	8,051	113	9,752

The €(117) million reduction in equity relates mainly to non-controlling interests following the completion of the Emerging Biochemicals divestment in 2017.

2. NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

IFRS general accounting policies

1. Basis of preparation

This information was prepared in accordance with European Regulation (EC) 1606/2002 on the application of international accounting standards dated July 19, 2002. The Group's consolidated financial statements for the year ended December 31, 2017 were prepared in accordance with IFRS (International Financial Reporting Standards) as published by the International Accounting Standards Board (IASB), and endorsed by the European Union.

The accounting standards applied in the consolidated financial statements for the year ended December 31, 2017 are consistent with those used to prepare the consolidated financial statements for the year ended December 31, 2016.

Standards, interpretations, and amendments applicable for the first time in 2017

No new standards, interpretations, or amendments that have a material impact on the Group's consolidated financial statements have become applicable for the first time in 2017.

For the year ended 2017, in accordance with the amendments to IAS 7 *Statement of Cash Flows* that are part of the IASB's Disclosure Initiative, the Group provided disclosures that enable users of financial statements to evaluate changes in liabilities arising from financing activities, including both changes arising from cash flows and non-cash changes (see note F33 Net indebtedness).

Standards, interpretations, and amendments applicable for the first time in 2018

No new standards, interpretations, or amendments applicable for the first time in 2018, are expected to have a material impact on the Group's consolidated financial statements.

IFRS 15 Revenue from Contracts with Customers (applicable for annual periods beginning on or after January 1, 2018). On January 1, 2018 the Group adopted IFRS 15, using a modified retrospective application.

IFRS 15 establishes a five-step model to account for revenue arising from contracts with customers. Under IFRS 15, revenue is recognized at an amount that reflects the consideration to which an entity expects to be entitled in exchange for transferring goods or services to a customer. The new revenue standard supersedes all current revenue recognition requirements under IFRS. During 2017, the Group finalized its assessment of IFRS 15 impacts that it had commenced in 2016.

- a. Sale of goods: As the Group is in the business of selling chemicals, contracts with customers generally concern the sale of goods. As a result, revenue recognition generally occurs at a point in time when control of the chemicals is transferred to the customer, generally on delivery of the goods. In preparing for IFRS 15, the Group considered the following:
 - i. Distinct elements: The revenue of the Group consists mainly of sales of chemicals, which qualify as separate performance obligations. Value-added services – mainly customer assistance services – corresponding to Solvay's know-how are rendered predominantly over the period that the corresponding goods are sold to the customer. Ancillary services, such as training, are not material. At transition date, the Group does not have a more than insignificant adjustment compared to its current practice.
 - ii. Variable consideration: Some contracts with customers provide trade discounts or volume rebates. Currently, the Group recognizes revenue from the sale of goods measured at the fair value of the consideration received or receivable, net of returns and allowances, trade discounts, and volume rebates. Trade discounts and volume rebates give rise to variable consideration under IFRS 15, and are required to be estimated at contract inception. IFRS 15 requires the estimated variable consideration to be constrained to prevent overstatement of revenue. The Group assessed individual contracts to determine the estimated variable consideration and related constraints. At transition date, the Group does not have a more than insignificant adjustment compared to its current practice on its retained earnings. As from 2018, the liability for expected future rebates will be presented as part of contract liabilities.
 - iii. **Moment of recognition of revenue:** The Group sells its chemicals to its customers, (a) directly, (b) through distributors, and (c) with the assistance of agents. The Group analyzed whether the moment control of the goods passes, as described in IFRS 15, would result in a different moment to recognize the revenue. At transition date, the Group does not have a more than insignificant adjustment compared to its current practice.

b. Presentation and disclosure requirements: IFRS 15 provides presentation and disclosure requirements, which are more detailed than under current IFRSs. The presentation requirements represent a change from current practice and increase the volume of disclosures required in Group's financial statements. Many of the disclosure requirements in IFRS 15 are new. The Group has analyzed those disclosure requirements, including the need for policies, procedures, and internal controls necessary to collect and disclose the required information.

IFRS 9 Financial Instruments (applicable for annual periods beginning on or after January 1, 2018). IFRS 9 brings together all three aspects of the accounting for the financial instruments project: classification and measurement, impairment, and hedge accounting. Except for hedge accounting, retrospective application is required, but providing comparative information is not compulsory. For hedge accounting, the requirements are generally applied prospectively, with some limited exceptions. The Group adopted the new standard on January 1, 2018, and did not restate comparative information. During 2017, the Group finalized the impact assessment of all three aspects of IFRS 9. This assessment is based on currently available information and may be subject to changes arising from further reasonable and supportable information being made available to the Group in 2018. Overall, the Group expects no significant impact on its statement of financial position and equity. The Group expects an increase in the loss allowance resulting in a negative impact on equity as discussed below. In addition, the Group will implement changes in classification of certain financial instruments.

a. Classification and measurement: The application of the classification and measurement requirements of IFRS 9 does not have a significant impact on the Group's consolidated statement of financial position or equity. It will continue measuring at fair value all financial assets currently held at fair value. The equity shares in non-listed companies, currently presented as available for sale, are intended to be held for the foreseeable future. The Group expects to apply the option to present fair value changes in OCI, and therefore the application of IFRS 9 does not have a significant impact. The fair value gains or losses accumulated in the other comprehensive income will no longer be subsequently reclassified to profit or loss, which is different from the current treatment. This will not have an impact on the Group's comprehensive income for the year. Loans as well as trade receivables are held to collect contractual cash flows and give rise to cash flows representing solely payments of principal and interest. Thus, the Group will continue to measure those financial assets at amortized cost under IFRS 9.

b. **Impairment:** IFRS 9 requires the Group to recognize expected credit losses on all of its trade receivables: the Group will apply the simplified approach and recognize lifetime expected losses on all trade receivables, using the provision matrix in order to calculate the lifetime expected credit losses for trade receivables as required by IFRS 9, using historical information on defaults adjusted for the forward looking information. Impacts related to debt securities, loans, financial guarantees, and loan commitments provided to third parties, as well as cash and cash equivalents, are immaterial. The impact on the Group's equity amounts to €(5) million.

In € million	
(a) Trade and other receivables	(6)
(b) Assets held for sale	
(c) Subtotal (a)+(b)	(7)
(d) Deferred tax assets	2
(e) Deferred tax assets included in assets held for sale	
(c)-(d)-(e) Impact on retained earnings	(5)
of which NCI	

c. **Hedge accounting:** In accordance with IFRS 9's transition provisions for hedge accounting, the Group applies the IFRS 9 hedge accounting requirements prospectively from the date of initial application on January 1, 2018. The Group's qualifying hedging relationships in place as at January 1, 2018 also qualify for hedge accounting in accordance with IFRS 9 and were therefore regarded as continuing hedging relationships. No rebalancing of any of the hedging relationships was necessary on January 1, 2018.

Standards, interpretations, and amendments applicable for the first time after 2018

IFRS 16 Leases (applicable for annual periods beginning on or after January 1, 2019). IFRS 16 sets out the principles for the recognition, measurement, presentation, and disclosure of leases and requires lessees to account for all leases under a single on-balance sheet model, similar to the accounting for finance leases under IAS 17. The Standard includes two recognition exemptions for lessees: leases of low-value assets and short-term leases, i.e. leases with a lease term of 12 months or less. At the commencement date of a lease, lessees will recognize a lease liability (i.e. a liability to make lease payments), and a right-of-use asset (i.e. an asset representing the right to use the underlying asset over the lease term). The right-of-use asset will be depreciated over the term of the lease, and interest expense will be recognized on the lease liability. The lease liability will be remeasured upon the occurrence of certain events (e.g. a change in the lease term, a change in future lease payments resulting from a change in index). Such remeasurements of the lease liability will generally be recognized as an adjustment to the right-of-use asset. Lessor accounting under IFRS 16 is substantially unchanged from today's accounting under IAS 17. Finally, disclosure requirements under IFRS 16 are more extensive when compared with IAS 17.

As part of its implementation project of IFRS 16, in 2017, the Group undertook a review of its operating lease contracts with a focus on the entities with the highest future minimum lease payments. The Group also challenged the non-cancellable period of the leases, especially for buildings.

During 2018 the Group will continue to assess the impacts of IFRS 16 on its consolidated financial statements. The Group expects an impact mainly on leases currently classified as operating leases and for which Solvay is the lessee. In this respect, we refer to note F24 *Leases* for more information on existing operating leases. The Group expects to apply IFRS 16 using the modified retrospective approach and to exclude services from its lease liabilities.

IFRIC 23 Uncertainty over Income Tax Treatment. The interpretation addresses the accounting for income taxes when tax treatments involve uncertainty that affects the application of IAS 12 Incomes Taxes and does not apply to taxes or levies outside the scope of IAS 12, nor does it specifically include requirements relating to interest and penalties associated with uncertain tax treatments. The Interpretation specifically addresses the following:

- Whether an entity considers uncertain tax treatments separately,
- The assumptions an entity makes about the examination of tax treatments by taxation authorities,
- How an entity determines taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, and
- How an entity considers changes in facts and circumstances.

An entity must determine whether to consider each uncertain tax treatment separately or together with one or more other uncertain tax treatments. The approach that better predicts the resolution of the uncertainty should be followed. The interpretation is effective for annual reporting periods beginning on or after January 1, 2019, but certain transition reliefs are available. The Group will apply the interpretation from its effective date. The Group operates in a complex multinational tax environment, and is currently assessing the impact of the Interpretation on its consolidated financial statements, including presentation.

Other standards, interpretation, and amendments applicable for the first time after 2018 are not expected to have a material impact on the Group's consolidated financial statements.

2. Basis of measurement and presentation

The consolidated financial statements are presented in millions of euros, which is also the functional currency of the parent company.

The preparation of the financial statements requires the use of estimates and assumptions that have an impact on the application of accounting policies and the measurement of amounts recognized in the financial statements. The areas for which the estimates and assumptions are material with respect to the consolidated financial statements are presented in the section *Critical accounting judgments and key sources of estimation uncertainty*.

3. Principles of consolidation

3.1. Consolidation scope

3.1.1. General

The consolidated financial statements incorporate the financial statements of the Company, and:

- entities controlled by the Company (including through its subsidiaries) and that hence qualify as subsidiaries (see 3.1.2. below),
- arrangements over which the Company (including through its subsidiaries) exercises joint control, and that qualify as joint operations (see 3.1.3. below),
- arrangements over which the Company (including through its subsidiaries) exercises joint control, and that qualify as joint ventures (see 3.1.4. below), and
- entities over which the Company (including through its subsidiaries) has significant influence and that hence qualify as associates (see 3.1.4. below).

Where necessary, adjustments are made to the financial statements of the investees so as to align their accounting policies with those of the Group.

In accordance with the principle of materiality, certain companies which are not of significant size have not been included in the consolidation scope. Companies are deemed not to be significant when, during two consecutive years, they do not exceed any of the three following thresholds in terms of their contribution to the Group's accounts:

- sales of €30 million,
- total assets of €15 million,
- headcount of 150 persons.

Companies that do not meet these criteria are, nevertheless, consolidated where the Group believes that they have a potential for rapid development, or where they hold shares in other companies that are consolidated based on the above criteria.

In the aggregate, the non-consolidated companies have an immaterial impact on the consolidated financial statements of the Group.

The full list of companies is filed with the National Bank of Belgium as an attachment to the Annual Report, and can be obtained from the Company head office.

3.1.2. Investments in subsidiaries

A subsidiary is an entity over which the Group has control. Control is achieved when the Group has (a) power over an investee, (b) exposure, or rights, to variable returns from its involvement with the investee, and (c) the ability to use its power over the investee to affect the amount of the investor's returns. To assess whether the Group has control, potential voting rights are taken into account. Subsidiaries are fully consolidated. The results of subsidiaries acquired or disposed of during the year are included in the consolidated income statement from the effective date of acquisition and up to the effective date of disposal.

Intra-group transactions, balances, income, and expenses are eliminated on consolidation.

Non-controlling interests in subsidiaries are presented separately from the Group's equity. Non-controlling interests are initially measured, either at fair value (full goodwill method), or at the non-controlling interests' proportionate share in the recognized amounts of the acquiree's identifiable net assets (proportionate goodwill method). The choice of measurement is made on an acquisition-by-acquisition basis. Subsequent to the acquisition, the carrying amount of non-controlling interests is the amount of those interests at initial recognition plus the non-controlling interests' share of subsequent changes in equity. Total comprehensive income is attributed to non-controlling interests even if this results in the non-controlling interests having a deficit balance.

Changes in the Group's equity interest in a subsidiary that do not result in a loss of control are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiary. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognized directly in equity.

When the Group loses control of a subsidiary, the profit or loss on disposal is calculated as the difference between (i) the aggregate of the fair value of the consideration received and the fair value of any retained interest, and (ii) the previous carrying amount of the assets (including goodwill) and liabilities of the subsidiary and any non-controlling interests. Amounts previously recognized in other comprehensive income in relation to the subsidiary are accounted for (i.e. reclassified to profit or loss or

transferred directly to retained earnings) in the same manner as would be required if the relevant assets or liabilities were disposed of. The fair value of any investment retained in the former subsidiary at the date when control is lost is considered to be the fair value on initial recognition for subsequent accounting in accordance with IAS 39 Financial Instruments: Recognition and Measurement or, when applicable, the cost on initial recognition of an investment in an associate or joint venture in accordance with IAS 28 Investments in Associates and Joint Ventures.

3.1.3. Investments in joint operations

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about relevant activities require the unanimous consent of the parties sharing control. In its consolidated financial statements, the Group recognizes its share of the joint operations' assets, liabilities, revenue, and expenses, based on its ownership interest in the joint operations.

3.1.4. Investments in associates and joint ventures

An associate is an entity over which the Group has significant influence and that is neither a subsidiary nor an interest in a joint arrangement. Significant influence is the power to participate in the financial and operating policy decisions of the investee but is not control or joint control over those policies.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the net assets of the arrangement. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about relevant activities require the unanimous consent of the parties sharing control.

The results, assets, and liabilities of associates and joint ventures are incorporated in the consolidated financial statements using the equity method of accounting, except when the investment is classified as held for sale, in which case it is accounted for in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations. Under the equity method, on initial recognition, investments in associates and joint ventures are recognized in the consolidated statement of financial position at cost, and the carrying amount is adjusted for post-acquisition changes in the Group's share of the net assets of the associate or joint venture, less any impairment of the value of individual investments. Losses of an associate or joint venture in excess of the Group's interest in that associate or joint venture (which includes any long-term interests that, in substance, form part of the Group's net investment in the associate or joint venture) are recognized only to the extent that the Group has incurred legal or constructive obligations or made payments on behalf of the associate or joint venture.

Any excess of the cost of acquisition over the Group's share of the net fair value of the identifiable assets and (contingent) liabilities of the associate or joint venture recognized at the date of acquisition is goodwill. The goodwill is included within the carrying amount of the investment and is assessed for impairment as part of that investment.

Where a Group entity transacts with an associate or joint venture of the Group, profits and losses are eliminated to the extent of the Group's interest in the relevant associate or joint venture.

3.1.5. Main changes in consolidation scope in prior year

On March 16, 2016, Solvay and INEOS announced their intention to end their 50/50 Inovyn chlorovinyls joint venture earlier than originally foreseen, with INEOS becoming the sole shareholder. Solvay and INEOS formed Inovyn in July 2015, with Solvay's exit originally planned in July 2018. On March 31, 2016, Solvay and INEOS announced they had signed the binding agreement to end their Inovyn chlorovinyls joint venture, following their intentions announced on March 16, 2016. On July 7, 2016, upon completion of the transaction, Solvay received a payment of €335 million and INEOS became Inovyn's sole shareholder. The exit of the joint venture followed regulatory clearances from the relevant authorities. In 2017, Solvay paid a total price adjustment approximating €80 million.

On May 2, 2016, Solvay entered into a Share Purchase Agreement with Unipar Carbocloro for the sale of its equity interests held in Solvay Indupa. During the third quarter of 2016, the fair value less cost to sell has been updated, so as to reflect the impact of the worsening of the business environment on the deal. An impairment loss in the amount of €63 million was recognized in 2016. On December 7, 2016, Solvay obtained clearance from the Brazilian antitrust authority, CADE, for the agreed sale of its 70.59% stake in Solvay Indupa to chemical group Unipar Carbocloro. Completion of the transaction, at a total enterprise value of US\$202.2 million, took place on December 27, 2016.

On May 19, 2016, Solvay and Eastman Chemical Company signed a definitive agreement to end their cellulose acetate production joint venture Primester with Solvay acquiring Eastman's 50% stake in the US-based plant and becoming its sole owner. Following the transaction, Eastman provides the long-term supply of basic utilities and raw materials to the plant, based in Kingsport, Tennessee. The closing occurred on June 2, 2016.

On December 7, 2016, Solvay reached an agreement to sell its cellulose acetate tow business, Acetow, to private equity funds managed by Blackstone (see *Main events and changes in consolidation scope during the year*).

On December 14, 2016, Solvay signed a definitive agreement to sell its 58.77% stake in its Thai subsidiary Vinythai PCL to Japanese company AGC Asahi Glass, thereby exiting its Asian polyvinyl chloride (PVC) activities (see *Main events and changes in consolidation scope during the year*).

4. Foreign currencies

The individual financial statements of each Group entity are prepared in the currency of the primary economic environment in which the entity operates (its functional currency). For the purpose of the consolidated financial statements, the results and financial position of each Group entity are expressed in euros (EUR, \in), which is the functional currency of the Company and the presentation currency of the Group's consolidated financial statements.

In preparing the financial statements of the individual entities, transactions in currencies other than the entities' functional currency are recognized at the exchange rates prevailing at the dates of the transactions. At the end of each reporting period, monetary items denominated in foreign currencies are translated at the closing rate.

Non-monetary items carried at fair value that are denominated in foreign currencies are translated at the rate when the fair value was measured. Non-monetary items that are measured in terms of historical cost in a foreign currency are not translated at the closing rate.

Exchange differences are recognized in profit or loss in the period in which they arise except for:

- exchange differences on foreign currency borrowings relating to assets under construction for future productive use, which are included in the cost of those assets when they are regarded as an adjustment to interest costs on those foreign currency borrowings,
- exchange differences on transactions entered into in order to hedge certain foreign currency risks (see note F32 Financial instruments and financial risk management for hedge accounting policies), and
- exchange differences on monetary items receivable from or payable to a foreign operation for which settlement is neither planned nor likely to occur in the foreseeable future (therefore forming part of the net investment in the foreign operation), which are recognized initially in other comprehensive income under "currency translation differences".

The main exchange rates used are:

		Year-e	nd rate	Average rate		
		2017	2016	2017	2016	
1 Euro =						
Brazilian Real	BRL	3.9789	3.4297	3.6050	3.8558	
Yuan Renminbi	CNY	7.8112	7.3231	7.6278	7.3516	
Pound Sterling	GBP	0.8875	0.8551	0.8766	0.8195	
Indian Rupee	INR	76.5611	71.5180	73.5188	74.3655	
Japanese Yen	JPY	135.0098	123.3626	126.6917	120.1886	
Korean Won	KRW	1,284.1248	1,272.7193	1,276.6749	1,283.7503	
Mexican Peso	MXN	23.6551	21.7758	21.3273	20.6674	
Russian Ruble	RUB	69.4061	64.2959	65.9317	74.1393	
US Dollar	USD	1.1995	1.0538	1.1294	1.1068	

5. Government grants

Government grants are not recognized until there is reasonable assurance that the Group will comply with the conditions attaching to them and that the grants will be received.

Government grants relating to the purchase of property, plant, and equipment are deducted from the cost of those assets. They are recognized in the consolidated statement of financial position at their expected value at the moment of initial recognition. The grant is recognized in profit or loss over the depreciation period of the underlying assets as a reduction of depreciation expense.

Other government grants are recognized as income on a systematic basis over the periods in which the related costs, which they are intended to compensate, are recognized. Government grants that are receivable as compensation for expenses or losses already incurred or for the purpose of giving immediate financial support to the Group with no future-related costs are recognized in profit or loss in the period in which they become receivable.

Critical accounting judgments and key sources of estimation uncertainty Impairment

The Group performs annual impairment tests on (groups of) cash-generating units (CGUs) to which goodwill has been allocated, and each time there are indicators that their carrying amount might be higher than their recoverable amount. This analysis requires management to estimate the future cash flows expected to be generated by the CGUs and a suitable discount rate in order to calculate present value.

Further details are provided in note F28 Impairment of property, plant and equipment, intangible assets, and equity method investees.

Taxes Deferred tax assets

The carrying amount of the deferred tax assets is reviewed at each reporting date. The carrying amount of a deferred tax asset is reduced to the extent that it is no longer probable that the Group will earn sufficient taxable profits against which the deductions can be utilized. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

Deferred tax assets other than tax loss carryforwards are analyzed on a case-by-case basis, taking into account all relevant facts and circumstances. For example, a zero taxable profit, after deducting the amounts paid to retirees under a defined benefit plan and for which a deductible temporary difference existed, can justify the recognition of the underlying deferred tax assets. Recognition of deferred tax assets for tax loss carryforwards require a positive taxable profit during the year that enables the utilization of tax losses that originated in the past. Because of uncertainties inherent to predicting such positive taxable profit, recognition of deferred tax assets from tax loss carryforwards is based on a case-by-case analysis, which is usually based on five-year profit forecasts, except with respect to financial companies for which ten-year financial profit forecasts are considered highly predictable and are consequently used.

The corporate tax reporting team, which has the overview of the Group deferred tax positions, is involved in assessing deferred tax assets.

Tax reform in the United States

The enactment of the tax reform in the United States at the end of 2017 necessitated key estimates related to the recognition of foreign tax credits and the transitional tax on unremitted earnings, due to the transition from a global to a territorial taxation system.

Further details are provided in note F7.B. Deferred taxes in the consolidated statement of financial position.

Provisions

Employee benefits obligations

The actuarial assumptions used in determining the defined benefit obligations at December 31, as well as the annual cost, can be found in note F31 *Provisions*. All main employee benefits plans are assessed annually by independent actuaries. Discount rates and inflation rates are defined centrally by management. The other assumptions (such as future salary increases and expected rates of medical care cost increases) are defined at a local level. All plans are supervised by the Group's central Human Resources department with the help of a central actuary to check the acceptability of the results and ensure consistency in reporting.

Further details are provided in note F31.A. *Provisions for employee benefits*.

Environmental provisions

Environmental provisions are managed and coordinated jointly by the Environmental Rehabilitation department and the Finance department.

The forecasts of expenses are discounted to their present value.

The discount rates fixed by geographical area correspond to the average risk-free rate on 10-year government bonds. These rates are set annually by the Finance department and can be revised based on the evolution of economic parameters of the country involved.

To reflect the passage of time, the provisions are increased each year at the discount rates described above.

Further details are provided in note F31.B. *Provisions other than for employee benefits*.

Provisions for litigations

Any significant litigation (tax and other, including threat of litigation) is reviewed by Solvay's in-house lawyers with the support, when appropriate, of external counsels at least every quarter. This review includes an assessment of the need to recognize provisions and/or remeasure existing provisions together with the Finance department and the Insurance department.

Further details are provided in note F31.B. *Provisions other than for employee benefits*.

Classification as held for sale

Assets are classified as held for sale if their carrying amount will be recovered through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset is available for immediate sale in its present condition. Amongst other conditions, management must be committed to the sale, which should be expected to qualify for recognition as a completed sale within one year from the date of classification. However, in some cases, an asset may remain classified as held for sale for a period exceeding one year if it remains unsold due to events or circumstances beyond the Group's control.

Polyamides

On September 19, 2017, Solvay announced that it had entered into a binding agreement with German chemical company BASF for the sale of its Polyamides business. In this context, management concluded that the conditions to classify the business as held for sale and as a discontinued operation were met as of that date. In particular, management considers the Polyamides business as a separate major line of business and expects the transaction to be completed during the second half of 2018, after customary regulatory approvals have been obtained

Under the proposed terms of the agreement, the transaction is based on an enterprise value of €1.6 billion. The expected net cash proceeds are estimated to be around €1.1 billion. As a result of the discontinuation, the retained Latin American polyamide business incurred an impairment of €(91) million recognized at the end of September. This impairment is expected to be more than compensated by the capital gain on the transaction at the closing.

Further details are provided in note F25 Assets held for sale.

Control assessment

During the second quarter of 2017, Solvay deconsolidated its investment in Venezuela triggered by the political situation in the country. Consequently a loss of $\[\in \]$ 72 million, related mainly to the $\[\in \]$ 60) million recycling of CTAs, has been recognized in the second quarter.

Notes to the consolidated income statement

Preliminary comment: consistent with the presentation in the consolidated income statement, the notes to the consolidated income statement as presented hereinafter do not include the consolidated income statement impacts from discontinued operations that are presented on a separate line. Those are disclosed in note F8 Discontinued operations. As a consequence, the comparative numbers presented in the notes hereafter are different from those published in the 2016 Annual Report due to the impacts from the polyamides business, which is presented as discontinued operations as from 2017.

NOTE F1 Segment information

Accounting policy

An Operating Segment is a component of the Group that engages in business activities from which it may earn revenues and incur expenses, whose operating results are regularly reviewed by the entity's chief operating decision maker, and for which discrete financial information is available. The Solvay Group's chief operating decision maker is the Chief Executive

Net sales comprise the sales of goods and value-added services corresponding to Solvay's know-how. Net sales and other revenue are measured at the fair value of the consideration received or receivable, net of returns, rebates and trade benefits granted, and sales tax.

Revenue from non-core activities primarily includes commodity and utility trading transactions and other revenue deemed incidental by the Group.

Net sales and other revenue are recognized when all the following conditions have been satisfied:

- the Group has transferred to the buyer the significant risks and rewards of ownership of the goods,
- the Group retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold,
- the amount of revenue can be measured reliably,
- it is probable that the future economic benefits associated with the transaction will flow to the Group, and
- · the costs incurred or to be incurred in respect of the transaction can be measured reliably.

General

Solvay is organized into four Operating Segments:

- · Advanced Materials offers high-performance materials for multiple applications primarily in the automotive, aerospace, electronics, and health markets. In particular, it provides sustainable mobility solutions, reducing weight and improving CO2 and energy efficiency.
- · Advanced Formulations serves primarily the consumer goods, agro and food, and energy markets. It offers customized specialty formulations that impact surface chemistry and alter liquid behavior, to optimize efficiency and yield, while minimizing the environmental impact.
- Performance Chemicals operates in mature and resilient markets and has leading positions in chemical intermediates. Success is based on economies of scale and state-of-the-art production technology. It serves mainly the consumer goods and food markets. As from 2017, Performance Chemicals also encompasses the remaining business activities previously included in the segment Functional Polymers (which was composed mainly of polyamide activities, which were reclassified to discontinued operations). The comparative information has been adjusted accordingly.
- Corporate & Business Services includes corporate and other business services, such as the Research & Innovation Center. It also incorporates the GBU Energy Services, whose mission is to optimize energy consumption and reduce CO₂ emissions.

Information per segment

2017				Corporate &	
In € million	Advanced	Advanced	Performance	Business	
Income statement items	Formulations	Materials	Chemicals	Services	Group Total
Net sales (including the inter-segment sales)	2,972	4,371	2,797	23	10,163
Inter-segment sales	(6)	(2)	(31)		(38)
Net sales	2,966	4,370	2,766	23	10,125
Gross margin	764	1,514	761	46	3,086
Depreciation and amortization	280	432	263	79	1,054
Earnings from associates and joint ventures	8	10	27		44
Underlying EBITDA ⁽¹⁾	524	1,202	749	(244)	2,230
EBIT					976
Net financial charges		_			(298)
Income taxes					197
Profit (loss) for the year from discontinued operations					241
Profit (loss) for the year					1,116

⁽¹⁾ Underlying EBITDA is a key performance indicator followed by management (see Business Review section – 5. Reconciliation of underlying with IFRS figures).

2017 In € million Statement of financial position and other items	Advanced Formulations	Advanced Materials	Performance Chemicals	Corporate & Business Services	Group Total
Capital expenditures (continuing operations)	130	366	152	68	716
Capital expenditures (discontinued operations)			105		105
Investments (continuing operations)		28		28	56
Working capital					
Inventories	403	802	288	10	1,504
Trade receivables	410	546	430	76	1,462
Trade payables	327	411	324	268	1,330

Capital expenditures relate to property, plant, and equipment and to intangible assets.

Information per segment for 2016 as presented below takes into account the new organization of the Operating Segments applicable as from 2017.

2016 In € million Income statement items	Advanced Formulations	Advanced Materials	Performance Chemicals	Corporate & Business Services	Group Total
Net sales (including the inter-segment sales)	2,671	4,313	2,606	7	9,596
Inter-segment sales	(3)		(25)		(28)
Net sales	2,668	4,313	2,581	7	9,568
Gross margin	695	1,398	715	22	2,831
Depreciation and amortization	292	413	260	110	1,074
Earnings from associates and joint ventures	8	8	70	(1)	85
Underlying EBITDA ⁽¹⁾	484	1,110	718	(237)	2,075
EBIT					858
Net financial charges					(334)
Income taxes					68
Profit (loss) for the year from discontinued operations					82
Profit (loss) for the year					674

⁽¹⁾ Underlying EBITDA is a key performance indicator followed by management (see Business Review section – 5. Reconciliation of underlying with IFRS figures).

2016 In € million Statement of financial position and other items	Advanced Formulations	Advanced Materials	Performance Chemicals	Corporate & Business Services	Group Total
Capital expenditures (continuing operations)	134	435	281	79	929
Capital expenditures (discontinued operations)			51		51
Investments (continuing operations)	16	4		44	64
Investments (discontinued operations)			33		33
Working capital					
Inventories	388	794	478	11	1,672
Trade receivables	365	571	603	82	1,621
Trade payables	293	429	570	255	1,547

Capital expenditures relate to property, plant, and equipment and to intangible assets.

External net sales by cluster

In € million	2017	2016
Advanced Materials	4,370	4,313
Specialty Polymers	2,025	1,922
Composite Materials	1,038	1,073
Silica	443	455
Special Chem	865	862
Advanced Formulations	2,966	2,668
Novecare	1,937	1,663
Technology Solutions	662	656
Aroma Performance	366	350
Performance Chemicals	2,766	2,581
Soda Ash & Derivatives	1,629	1,561
Peroxides	600	542
Coatis	410	346
Functional Polymers	126	131
Corporate & Business Services	23	7
Energy Services		4
CBS and NBD	23	3
Total	10,125	9,568

Sales by country and region

The sales disclosed below are allocated based on the customers' location.

In € million	2017	%	2016	%
Belgium	156	2%	137	1%
Germany	716	7%	721	8%
Italy	444	4%	453	5%
France	383	4%	383	4%
United Kingdom	303	3%	298	3%
Spain	210	2%	227	2%
European Union – other	592	6%	583	6%
European Union	2,803	28%	2,802	29%
Europe - other	97	1%	102	1%
United States	2,921	29%	2,814	29%
Canada	159	2%	139	1%
North America	3,079	30%	2,953	31%
Brazil	709	7%	627	7%
Mexico	176	2%	166	2%
Latin America – other	200	2%	202	2%
Latin America	1,084	11%	996	10%
Australia	104	1%	90	1%
China	912	9%	782	8%
Egypt	48	0%	54	1%
Hong Kong	108	1%	79	1%
India	170	2%	161	2%
Indonesia	104	1%	103	1%
Japan	365	4%	365	4%
Russia	79	1%	61	1%
South Korea	264	3%	237	2%
Thailand	181	2%	159	2%
Turkey	65	1%	67	1%
Other	661	7%	557	6%
Asia and rest of the world	3,061	30%	2,715	28%
Total	10,125	100%	9,568	100%

Invested capital, capital expenditures, and investments by country and region

		Invested	d capital		C	apital expenditur	es and investment	S
In € million	2017	%	2016	%	2017	%	2016	%
Belgium	2,075	13%	2,155	12%	(24)	3%	(28)	3%
Germany	516	3%	765	4%	(41)	5%	(46)	5%
Italy	775	5%	743	4%	(87)	11%	(83)	8%
France	1,080	7%	1,922	10%	(124)	16%	(188)	19%
United Kingdom	255	2%	235	1%	(51)	7%	(40)	4%
Spain	166	1%	142	1%	(23)	3%	(18)	2%
European Union – other	727	5%	408	2%	(24)	3%	(51)	6%
European								
Union	5,592	35%	6,370	35%	(374)	49%	(454)	46%
Europe - other	72	0%	81	0%		0%		0%
United States	7,755	49%	9,008	49%	(265)	34%	(309)	31%
Canada	190	1%	212	1%	(8)	1%	(8)	1%
North America	7,946	50%	9,220	50%	(273)	35%	(317)	32%
Brazil	389	2%	570	3%	(27)	3%	(37)	4%
Argentina		0%		0%		0%	(2)	0%
Latin America – other	54	0%	63	0%	(2)	0%	(3)	0%
Latin America	443	3%	633	3%	(29)	4%	(41)	4%
Russia	191	1%	228	1%		0%		0%
Thailand	141	1%	127	1%	(5)	1%	(4)	0%
China	755	5%	798	4%	(54)	7%	(66)	7%
South Korea	260	2%	269	1%	(12)	2%	(69)	7%
India	238	1%	237	1%	(18)	2%	(8)	1%
Singapore	47	0%	81	0%	(1)	0%	(3)	0%
Japan	42	0%	84	0%	(1)	0%	(1)	0%
Egypt	10	0%	10	0%		0%		0%
Other	216	1%	266	1%	(5)	1%	(29)	3%
Asia and rest of the world	1,900	12%	2,099	11%	(96)	12%	(181)	18%
Total	15,953	100%	18,404	100%	(772)	100%	(993)	100%

Invested capital includes the non-current assets (excluding the deferred taxes), inventories, and trade receivables and payables. Capital expenditures and investments include acquisitions of property, plant, and equipment, and intangible assets and investments in subsidiaries and other investments. Both exclude discontinued operations.

NOTE F2 Consolidated income statement by nature

In € million	Notes	2017	2016
Net sales	(F1)	10,125	9,568
Revenue from non-core activities	(F3)	766	476
Raw materials, utilities and consumables used		(4,892)	(4,154)
Use of the PPA step-up for inventories			(82)
Changes in inventories		132	(30)
Personnel expenses		(2,275)	(2,238)
Wages/salaries and direct social benefits		(1,621)	(1,545)
Employer's contribution for social insurance		(313)	(300)
Pensions and insurance benefits		(161)	(190)
Other personnel expenses		(179)	(203)
Amortization, depreciation and impairment	(F12)	(1,054)	(1,075)
Other variable logistics expenses		(658)	(613)
Other fixed expenses		(856)	(980)
Addition and reversal of provisions (excluding employee benefit provisions)	(F31)	(93)	(199)
Operating lease expenses	(F24)	(94)	(107)
M&A costs and gains and losses on disposals	(F5)	(45)	82
Earnings from associates and joint ventures	(, 3)	44	85
EBIT		976	858
Cost of borrowings	(F6)	(172)	(187)
Interest on lendings and short term deposits	(F6)	15	13
Other gains and losses on net indebtedness	(F6)	(44)	(50)
Cost of discounting provisions	(F6)	(97)	(115)
Income/loss from available-for-sale financial assets	(F6)		5
Profit for the year before taxes		678	524
Income taxes	(F7)	197	68
Profit for the year from continuing operations		875	592
Profit (loss) for the year from discontinued operations	(F8)	241	82
Profit for the year	(F9)	1,116	674
attributable to:			
Solvay share		1,061	621
non-controlling interests		56	53

NOTE F3 Revenue from non-core activities

This revenue comprises primarily commodity and utility trading transactions and other revenue deemed as incidental by the Group and considered to not correspond to Solvay's know-how and core business. The increase in 2017 relates mainly to the evolution of gas price.

NOTE F4 Other operating gains and losses

Other operating gains and losses	(154)	(200)
Other	53	6
Amortization of intangible assets resulting from PPA	(206)	(214)
Net foreign exchange gains and losses	(9)	2
Capital gains/losses on sales of property, plant and equipment and intangible assets	19	21
Start-up, formation and preliminary study costs	(12)	(15)
In € million	2017	2016

The line "Other" in 2017 relates mainly to the reduction of the Cytec post-retirement medical obligations for €37 million following the harmonization of medical benefit plans in the Group.

NOTE F5

Results from portfolio management and reassessments, legacy remediation and major litigations

Accounting policy

Results from portfolio management and reassessments include:

- gains and losses on the sale of subsidiaries, joint operations, joint ventures, and associates that do not qualify as discontinued operations,
- · acquisition costs of new businesses,
- gains and losses on the sale of real estate not directly linked to an operating activity,
- restructuring charges driven by portfolio management and reassessment, including impairment losses resulting from the shutdown of an activity or a plant, and

• impairment losses resulting from testing of CGUs.

Results from legacy remediation and major litigations include:

- the remediation costs not generated by on-going production facilities (shut-down of sites, discontinued productions, previous years' pollution) and
- the impact of significant litigations.

Results from portfolio management and reassessments

In € million	2017	2016
Restructuring costs and impairment	(143)	(239)
M&A costs and gains and losses on disposals	(45)	82
Results from portfolio management and reassessments	(188)	(157)

Results from legacy remediation and major litigations

In € million	2017	2016
Major litigations	(16)	(12)
Remediation costs and other costs related to non-ongoing activities	(69)	(42)
Results from legacy remediation and major litigations	(84)	(54)

In 2017, these items relate primarily to:

- Restructuring costs and impairment relating to:
 - the closure of sites in China and Korea (€(13) million),
 - the closure of sites of the Soda Ash business (€(23) million),
- Impairment with respect to Polyamides retained assets (€(91) million).
- M&A costs and gains and losses on disposals:
 - the deconsolidation of the Venezuelan entity (€(72) million, of which €(60) million for CTA recycling),
 - the gain on the Cross Linkable Compound business divestment (€43 million),
 - the loss on the disposal of Dacarto Benvic (€(13) million).

In 2016, these items related primarily to:

- Restructuring costs and impairment relating to:
 - the mothballing of the Soda Ash plant in Egypt (€(112) million),
 - the divestment decision of the US torrefied biomass electricity generation project (€(39) million),
 - the resizing of Solvay's shared services due to the changes in the Group's portfolio (€(40) million),
 - the impact of adverse market conditions on the Brazilian electricity cogeneration assets (€(28) million),
- M&A costs and gains and losses on disposals:
 - gain on Inovyn divestment (€71 million),
 - loss on the disposal of a peroxide business in Bussi (Italy) (€(13) million),
 - gain following additional reversal of the holdback included in the Chemlogics purchase price and subject to performance conditions not reached in 2016 (€49 million), and
 - M&A acquisition costs for €(25) million.

NOTE F6 Net financial charges

Accounting policy

Interest on borrowings is recognized in costs of borrowings as incurred, with the exception of borrowing costs directly attributable to the acquisition, construction, and production of qualifying assets (see note F23 Property, Plant and Equipment).

Net foreign exchange gains or losses on financial items and changes in fair value of derivative financial instruments related to net indebtedness are presented in "Other gains and losses on net indebtedness", with the exception of changes in fair value of derivative financial instruments that are hedging instruments in a cash flow hedge relationship, and which are recognized on the same line as the hedged item, when the latter affects profit or loss.

In € million	2017	2016
Cost of borrowing	(172)	(187)
Interest on lendings and short term deposits	15	13
Other gains and losses on net indebtedness	(44)	(50)
Net cost of borrowing	(201)	(224)
Cost of discounting provisions	(97)	(115)
Income/loss from available-for-sale financial assets		5
Net financial charges	(298)	(334)

Details are included in note F33 Net indebtedness.

The decrease of the net cost of borrowing is explained mainly by:

- The repayment of the Senior notes of US\$ 82 million maturing in July 2017,
- The partial early repayment of US\$204 million of Senior Notes 2023 (out of US\$400 million) and of US\$87 million of Senior Notes 2025 (out of US\$250 million) of Cytec Industries,
- The partial early repayment of €118 million of EMTN Bond 2018 (€500 million) of Solvay SA, and
- The repayment of the Solvay Floating Rate Notes of €1 billion maturing early December 2017.

That decrease is partially offset by one-off accretion costs (acceleration) linked to the early repayments for €(10) million.

The other gains and losses on net indebtedness decreased slightly from \in (50) million in 2016 to \in (44) million in 2017. The decrease is explained mainly by:

- A significant decrease linked to the optimization of our subsidiaries' capital structure resulting in rationalization of swap volume needed to cope with local funding in US\$ (€(20) million in 2017 as against €(48) million in 2016), and
- One-off premiums amounting to €(15) million related to the early repayments of the Senior Notes 2023 and 2025 and of the EMTN Bond 2018.

The decrease of cost of discounting provisions relates predominantly to post-employment benefits for €18 million and is explained mainly by the evolution of the applicable discount rates.

NOTE F7 Income taxes



Accounting policy

Current taxes

The current tax payable is based on taxable profit of the year. Taxable profit differs from profit as reported in the consolidated income statement because of items of income or expense that are taxable or deductible in other years and items that are never taxable or deductible. The Group's liability for current tax is calculated using tax rates that have been enacted or substantively enacted by the end of the reporting period.

Deferred taxes

Deferred tax is recognized for temporary differences between the carrying amounts of assets and liabilities in the consolidated financial statements and their corresponding tax bases used in the computation of taxable profit.

Deferred tax assets are generally recognized for all deductible temporary differences, to the extent that it is probable that taxable profits will be available against which those deductible temporary differences can be utilized.

Deferred tax liabilities are generally recognized for all taxable temporary differences.

No deferred tax liabilities are recognized following the initial recognition of goodwill. In addition, no deferred tax assets or liabilities are recognized with respect to the initial recognition of an asset or liability in a transaction which is not a business combination and affects neither accounting profit nor taxable

Deferred tax liabilities are recognized for taxable temporary differences associated with investments in subsidiaries, joint operations, joint ventures, and associates, except where the Group is able to control the timing of the reversal of the temporary difference and it is probable that the temporary difference will not reverse in the foreseeable future.

The carrying amount of the deferred tax assets is reviewed at each reporting date. The carrying amount of a deferred tax asset is reduced to the extent that it is no longer probable that the Group will earn sufficient taxable profits against which the deductions can be utilized. Any such reduction is reversed to the extent that it becomes probable that sufficient taxable profits will be available.

Deferred tax assets other than tax loss carryforwards are analyzed on a case-by-case basis, taking into account all relevant facts and circumstances. For example, a zero taxable profit, after deducting the amounts paid to retirees under a defined benefit plan and for which a deductible temporary difference existed, can justify the recognition of the underlying deferred tax assets. Recognition of deferred tax assets for tax loss carryforwards require a positive taxable profit during the year that enables the utilization of tax losses that originated in the past. Because of uncertainties inherent to predicting such positive taxable profit, recognition of deferred tax assets from tax loss carryforwards is based on a case-by-case analysis, which is usually based on five-year profit forecasts, except with respect to financial companies for which ten-year financial profit forecasts are considered highly predictable and are consequently used.

The corporate tax reporting team, which has the overview of the Group deferred tax positions, is involved in assessing deferred tax assets.

Further details are provided in note F7.B.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply in the period in which the liability is settled or the asset is realized, based on tax rates (and tax laws) that have been enacted or substantively enacted by the end of the reporting period. The measurement of deferred tax liabilities and assets reflects the tax consequences that would follow from the manner in which the Group expects, at the end of the reporting period, to recover or settle the carrying amount of its assets and liabilities.

Deferred tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities, and when they relate to income taxes levied by the same taxation authority and the Group intends to settle its current tax assets and liabilities on a net basis.

Current and deferred taxes for the period

Current and deferred taxes for the period are recognized as an expense or income in profit or loss, except when they relate to items that are recognized outside profit or loss (whether in other comprehensive income or directly in equity), in which case the tax is also recognized outside profit or loss, or when they arise from the initial accounting for a business combination. In the case of a business combination, the tax effect is taken into account in the accounting for the business combination.

F7.A. Income taxes

In € million		2017	2016
Current taxes related to current year		(203)	(194)
Current taxes related to prior years		12	4
Deferred income taxes		234	263
Deferred tax impact of changes in the nominal tax rates		155	(5)
Total income taxes recognized in the consolidated income statement		197	68
In € million	Notes	2017	2016
Income tax on items recognized in other comprehensive income	(F11)	37	56

The taxes related to current year include the estimate for the one-time transition tax due in 2019 in the United States (€(40) million) on unremitted foreign earnings after the enactment of the tax reform in 2017 (see below).

The current taxes related to prior years (€12 million) include mainly the net final tax adjustments for transfer pricing audits in Belgium and the closing of tax litigation in Spain.

The specific items of the year that significantly contribute to the deferred tax income (€234 million) comprise mainly:

- the recognition of previously unrecognized deferred tax assets in France for a total of €202 million due to the statutory reorganization of French subsidiaries (leading to the merger of tax units), of which €184 million for employee benefits obligations and other temporary differences and €18 million for tax loss carryforwards,
- the net derecognition of €(78) million for deferred tax assets related to tax losses carried forward in different countries mainly due to statutory reorganizations,
- the tax impact of the impairment of retained assets for Polyamides in Brazil (€25 million), and
- the deferred tax income resulting from the amortization of Purchase Price Allocation step-ups (€82 million).

Tax reforms were enacted in December 2017 in the United States, in France and in Belgium based on which the tax rates will be reduced as follows:

- in the United States, reduction of the Federal tax rate from 35% to 21% as from 2018,
- in France, reduction of the corporate tax rate as from 2019 and down to 25.825% in 2022,
- in Belgium, reduction of the corporate tax rate as from 2018 and down to 25% in 2020.

The deferred tax impact of changes in the nominal tax rates of $\[\le 155 \]$ million is composed mainly of the impact of the tax reforms enacted in the United States ($\[\le 193 \]$ million), in Belgium ($\[\le (19) \]$ million), and in France ($\[\le (29) \]$ million), and other minor adjustments.

Reconciliation of the income taxes

The effective income taxes have been reconciled with the theoretical tax expense obtained by applying to the pre-tax profit of each Group entity the nominal tax rate prevailing in the country in which it operates.

In € million	2017	2016
Profit for the year before taxes	678	524
Earnings from associates and joint ventures	44	85
Profit for the year before taxes excluding earnings from associates and joint ventures	634	439
Reconciliation of the tax charge		
Total tax charge of the Group entitites computed on the basis of the respective local nominal rates	(169)	(91)
Weighted average nominal rate	27%	21%
Tax effect of permanent differences	97	42
Tax effect on distribution of dividends	(11)	(17)
Tax effect of changes in tax rates	155	(4)
Tax effect of current and deferred tax adjustments related to prior years	(1)	13
Changes in unrecognized deferred tax assets	126	127
Effective income taxes	197	68
Effective tax rate	(29%)	(13%)

The weighted average nominal rate was 6% higher in 2017 than in 2016 due to the higher weight of earnings before tax in countries with higher tax rates (mainly NAFTA, Italy, Germany) and the reversal of deferred tax liabilities in Egypt in 2016. The significant change in effective tax rate from (13)% in 2016 to (29)% in 2017 results mainly from:

- the deferred tax impact of changes in the nominal tax rates (€155 million) due predominantly to the tax reforms enacted in the United States, in Belgium, and in France (see above),
- the change in unrecognized deferred tax assets (€126 million) which includes the recognition of previously unrecognized deferred tax assets in France for a total of €202 million due to the statutory reorganization of French subsidiaries and net derecognition of €(78) million for deferred tax assets related to tax losses carried forward in different countries, and

- the tax impact of increased permanent differences in 2017 for €97 million. The increase of €55 million versus 2016 is due mainly to:
 - higher reversal of tax litigation provisions for €21 million (€37 million in 2017 versus €16 million in 2016),
 - the one-off tax impact of the merger of both tax units in France (€(24) million), and
 - higher non-taxable capital gains for €52 million (€18 million in 2017 versus €(34) million in 2016).

F7.B. Deferred taxes in the consolidated statement of financial position

		Decemined	Recognized in other			Transfer to		
2017	Opening	Recognized in income	comprehensive	Exchange	Acquisition/	asset held		Closing
In € million	balance	statement	income	rate effect	disposal	for sale	Other	balance
Temporary differences								
Employee benefits obligations	435	160	33	(20)	2	(9)	(2)	599
Provisions other than employee benefits	244	(36)		(19)				188
Property, plant and equipment and intangible								
assets	(1,246)	325		129	(38)	18	1_	(810)
Goodwill	15							15
Tax losses	444	(81)		(15)	(10)	(1)	10	346
Tax credits	35	131		(7)				159
Assets held for sale		14					(14)	
Other	55	(125)	4	(2)	34	13	2	(20)
Total (net amount)	(19)	389	37	66	(12)	21	(4)	476
Deferred tax assets in the consolidated statement of								
financial position	890							1,076
Deferred tax liabilities in the consolidated statement of financial position	(909)							(600)

With the enactment of the tax reform in the United States at the end of 2017,

- foreign tax credits were recognized in the income statement for €124 million (out of a total of €131 million),
- a one-time tax on unremitted earnings of €(163) million was recognized in other temporary differences in the consolidated income statement. The recognized foreign tax credits will reduce the one-time tax due in 2019. At this stage, the net amount due (€40 million) is an estimate, is subject to changes based on the 2018 tax return, and has been reclassified to other non-current liabilities and current tax expenses,
- at this stage, the management has not changed his decision to permanently reinvest in overseas affiliates held by the US subsidiaries, except for Canada where local additional deferred tax liability of €(10) million for withholding taxes that will be due upon repatriation has been booked and is included in other temporary difference recognized in the consolidated income statement,
- deferred taxes related to temporary differences on intangible assets have been adjusted in the consolidated income statement for an amount of €175 million.

After the statutory reorganization of French subsidiaries, deferred taxes related to temporary differences for employee benefits obligations have been recognized in the income statement for an amount of €184 million.

A net derecognition of €(78) million on deferred tax assets related to tax losses carried forward in different countries has been recognized in the consolidated income statement and is due to statutory reorganizations.

The closing balance for Other temporary differences (€(20) million) includes deferred tax liabilities related to local unremitted earnings from Solvay affiliates amounting to €27 million in 2017 (€23 million in 2016). An amount for local withholding tax for €54 million is not recognized as the Group controls the timing of the reversal of the temporary differences and it is probable that they will not reverse in the foreseeable future.

In 2017, the total of deferred tax assets amounts to €2,938 million of which €1,862 million are not recognized.

The unrecognized deferred tax assets result from (i) losses carried forward ($\[mathcarcent Frame \]$,044 million mainly in holding companies including Solvay SA and Solvay France SA) for which deferred tax assets ($\[mathcarcent Frame \]$,012 million) have not been recognized and (ii) deferred tax assets on other temporary differences ($\[mathcarcent Frame \]$).

Recognized deferred tax assets, for which utilization depends on future taxable profits in excess of the profit arising from the reversal of existing taxable temporary differences within entities that have suffered a tax loss in either current or preceding year in the related tax jurisdiction, amount to €680 million. This amount includes the newly recognized deferred taxes in France (€202 million). This recognition is justified by favorable expectations as to future taxable profits.

2016 In € million	Opening balance	Recognized in income statement	Recognized in other comprehensive income	Exchange rate effect	Cytec acquisition	Other acquisition/ disposal	Transfer to asset held for sale	Other	Closing balance
Temporary differences									
Employee benefits obligations	328	92	71	3	(29)		(29)	1	435
Provisions other than employee benefits	199	35	(3)	9	7		(3)		244
Property, plant and equipment and intangible assets	(1,361)	58		(36)	16	(3)	76	5	(1,246)
Goodwill	23	(7)			(1)				15
Tax losses	373	46		7	6	(1)	(5)	18	444
Tax credits	86	(8)		(1)	(43)				35
Assets held for sale		(2)					(3)	6	
Other	(44)	47	(11)	(1)	61		2	2	55
Total (net amount)	(396)	259	56	(19)	16	(4)	37	32	(19)
Deferred tax assets in the consolidated statement of financial position	1,059								890
Deferred tax liabilities in the consolidated statement of financial position	(1,456)								(909)

Other information

For the majority of the Group's tax loss carryforwards, no deferred tax assets have been recognized. The unrecognized tax losses are located mainly in countries where they can be carried forward indefinitely.

The tax loss carryforwards generating deferred tax assets are given below by expiration date.

In € million	2017	2016
Within 1 year	16	5
Within 2 years	15	17
Within 3 years	22	21
Within 4 years	20	42
Within 5 or more years	331	278
No time limit	930	1,035
Total of tax losses carried forward which have generated recognized deferred tax assets	1,334	1,397
Tax losses carried forward for which no deferred tax assets were recognized	7,044	7,190
Total of tax losses carried forward	8,378	8,587

The tax losses carryforwards (€1,334 million) have generated deferred tax assets for €346 million. In 2016, the tax losses carryforwards (€1,397 million) had generated deferred tax assets for €444 million. The decrease of deferred tax assets in 2017 versus 2016 is due mainly to the decrease in nominal tax rates in the United States, in Belgium, and in France.

NOTE F8 Discontinued operations

Accounting policy

A discontinued operation is a component of the Group which the Group has disposed of or which is classified as held for sale (see note F25 Assets held for sale), and which:

- represents a separate major line of business or geographical area of operations,
- is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations, or
- is a subsidiary acquired exclusively with a view to resale.

A component of the Group consists of operations and cash flows, which can be clearly distinguished, operationally and for financial reporting purposes, from the rest of the Group.

In the consolidated statement of comprehensive income, the consolidated statement of cash flows and disclosures, discontinued operations are presented again for prior periods.

2017			Emerging		
In € million	Polyamides	Acetow	Biochemicals	Other	Total
Net sales	1,558	204	41		1,803
Breakdown discontinued operations					
EBIT	121	220	25	(54)	311
Financial result	(3)	(1)			(4)
Tax	(60)	(6)			(67)
Profit (loss) from discontinued					
operations	58	213	25	(54)	241
attributable to:					
Solvay share	58	213	20	(54)	237
non-controlling interests			4		4

The €(54) million in the column Other results mainly from post-closing warranties related to the disposal of the Pharma business and the adjustment for the Indupa purchase price.

The EBIT for Polyamides includes M&A costs and impairment on intangible assets for €45 million. The EBIT for Acetow includes the capital gain for €180 million. The EBIT for Emerging Biochemicals includes the capital gain for €24 million.

2016				Emerging		
In € million	Polyamides	Indupa	Acetow	Biochemicals	Other	Total
Net sales	1,315	478	531	404		2,729
Breakdown discontinued operations						
Loss recognized as result of remeasurement to fair value less costs to sell		(63)				(63)
EBIT ⁽¹⁾	104	(95)	116	30	16	172
Financial result	(4)	(31)	(4)	(2)		(42)
Tax	(12)	(3)	(33)			(48)
Profit (loss) from discontinued						
operations	88	(129)	79	28	16	82
attributable to:						
Solvay share	88	(126)	79	12	16	69
non-controlling interests		(3)		16		13

⁽¹⁾ Including recycling of currency translation adjustments for Indupa (€ (55) million).

NOTE F9 Profit for the year

Profit for the year amounts to €1,116 million as against €674 million in the previous year. See previous notes for explanations on the main variations.

NOTE F10 Earnings per share

Accounting policy

The basic earnings per share are obtained by dividing profit for the year by the weighted average number of ordinary shares outstanding during the reporting period. The weighted average number of ordinary shares excludes the treasury shares held by the Group over the reporting period.

The diluted earnings per share are obtained by dividing profit for the year by the weighted average number of ordinary shares, increased by the number of potentially diluting shares attached to the issuance of share options.

The number of potentially diluting shares is calculated for the weighted average number of share options outstanding during the reporting period as the difference between the average market price of ordinary shares during the reporting period and the exercise price of the share option. Share options have a dilutive effect only when the average market price is above the exercise price (share options are "in the money").

For the purpose of calculating diluted earnings per share, there were no adjusting elements to net income of the year (Solvay share).

Basic and diluted amounts per share for discontinued operations are presented in the consolidated income statement.

Number of shares (in thousands)	2017	2016
Weighted average number of ordinary shares (basic)	103,352	103,294
Dilution effect of subscription rights	733	315
Weighted average number of ordinary shares (diluted)	104,084	103,609

	20	17	2016	
	Basic	Diluted	Basic	Diluted
Profit for the year (Solvay share) including discontinued operations (in € thousands)	1,060,922	1,060,922	620,964	620,964
Profit for the year (Solvay share) excluding discontinued operations (in € thousands)	823,962	823,962	552,085	552,085
Earnings per share (including discontinued operations) (in €)	10.27	10.19	6.01	5.99
Earnings per share (excluding discontinued operations) (in €)	7.97	7.92	5.34	5.33

Full data per share, including dividend per share, can be found in the Business Review section.

The average closing price during 2017 was €118.56 per share (2016: €92.41 per share). Based on this average closing price all share options were in the money, and therefore dilutive, for the presented period (see note F35 Share-based payments).

Notes to the consolidated statement of comprehensive income

NOTE F11

Consolidated statement of comprehensive income

Accounting policy

In accordance with IAS 1 Presentation of Financial Statements, the Group elected to present two statements, i.e. a consolidated income statement immediately followed by a consolidated statement of comprehensive income.

The components of other comprehensive income (OCI) are presented before related tax effects with one amount shown for the aggregate amount of income tax relating to those components. Tax impacts are further disclosed in this note.

Presentation of the tax effect relating to each item of other comprehensive income

Note: the below table presents the total other comprehensive income items for the aggregate of the shares of Solvay and the noncontrolling interests.

		2017		2016			
In € million	Before-tax amount	Tax expense(-)/ benefit (+)	Net-of-tax amount	Before- tax amount	Tax expense(-)/benefit (+)	Net-of-tax amount	
Gains and losses on remeasuring available-for-sale financial assets	(1)	(2)	(3)	9		10	
Available-for-sale financial assets (see note F32)	(1)	(2)	(3)	9		10	
Effective portion of gains and losses on hedging instruments in a cash flow hedge	49	6	55	3	(13)	(10)	
Recycling to the income statement	(33)		(33)	33		33	
Cash flow hedges (see note F32)	15	6	22	36	(13)	23	
Currency translation differences - Subsidiaries and joint operations	(799)		(799)	272		272	
Currency translation differences arising during the year	(893)		(893)	199		199	
Recycling of currency translations differences relating to foreign operations disposed of in the year	118		118	63		63	
Other movement of currency translation differences (NCI) relating to foreign operations disposed of in the year	(24)		(24)	10		10	
Currency translation differences - Associates and joint ventures	(31)		(31)	57		57	
Currency translation differences arising during the year	(40)		(40)	51		51	
Recycling of currency translations differences relating to foreign operations disposed of in the year	9		9	6		6	
Currency translation differences	(830)		(830)	329		329	
Actuarial gains and losses on defined							
benefit pension plans (see note F31.A)	95	32	127	(275)	68	(207)	
Other comprehensive income	(721)	37	(684)	100	56	155	

Taxes in other comprehensive income include adjustments resulting from tax reforms and the statutory reorganization in France that impact the balance of deferred taxes related to actuarial gains and losses on defined benefit pension plans.

Currency translation differences

Accounting policy

For the purpose of presenting consolidated financial statements at the end of each reporting period, the assets and liabilities of the Group's foreign operations are expressed in euros using closing rates. Income and expense items are translated at the average exchange rates for the period, except when the impact of applying the average rate is materially different from applying the spot rate at the date of the respective transactions, in which case the latter is applied. Exchange differences arising, if any, are recognized in other comprehensive income as "currency translation differences".

Currency translation differences are reclassified from equity to profit or loss, on:

- a disposal of the Group's entire interest in a foreign operation, or a partial disposal involving loss of control over a subsidiary that includes a foreign operation. In this case, all of the accumulated exchange differences in respect of that operation attributable to the Group are reclassified to profit or loss. Any exchange differences that have previously been attributed to non-controlling interests are derecognized, but they are not reclassified to profit or loss;
- a partial disposal of an interest in a joint arrangement or an associate that includes a foreign operation, when the retained interest is a financial asset.

In the case of a partial disposal of a subsidiary (i.e. no loss of control) that includes a foreign operation, the proportionate share of accumulated exchange differences is reattributed to non-controlling interests and is not recognized in profit or loss. In the event of a capital decrease of a subsidiary without loss of control, no accumulated exchange differences are reclassified from equity to profit or loss.

Goodwill and fair value adjustments arising on the acquisition of a foreign operation are treated as assets and liabilities of the foreign operation and translated into the Group's presentation currency at the closing rate.

The total currency translation losses amount to €(830) million in 2017, and include:

- €(932) million currency translation losses, of which €(921) million for the Group's share,
- the recycling of €126 million currency translation loss related mainly to the sale of Acetow (€27 million) and Emerging Biochemicals (€26 million) and the deconsolidation of the investment in Venezuela (€60 million), and
- the derecognition of €(24) million currency translation gains for Emerging Biochemicals non-controlling interests.

The €(932) million currency translation losses are linked to the devaluation of the US Dollar (€(811) million), the Brazilian Real (€(45) million), the Saudi Arabia Riyal (€(30) million), and the Russian ruble (€(17) million), against the euro.

Notes to the consolidated statement of cash flows (continuing and discontinued operations)

NOTE F12

Depreciation, amortization and impairments

In 2017 total depreciation, amortization and impairment losses amount to €1,152 million, of which:

- straight-line depreciation and amortization of €954 million for continuing operations including:
 - cost of goods sold (€552 million),
 - administrative and commercial costs (€106 million),
 - research and development costs (€55 million),
 - other (€241 million), including €206 million for PPA amortization (see note F4 Other operating gains and losses),
- net impairment loss of €100 million for continuing operations (see note F5 Results from portfolio management and reassessments, legacy remediation and major litigations), and
- €98 million for discontinued operations, including €69 million for straight-line depreciation and amortization (including PPA) related to Polyamides.

In 2016 total depreciation, amortization and impairment losses amounted to epsilon1,302 million, of which:

- straight-line depreciation and amortization of €930 million for continuing operations including:
 - cost of goods sold (€541 million),
 - administrative and commercial costs (€101 million),
 - research and development costs (€50 million),
 - other (€238 million), including €214 million for PPA amortization (see note F4 *Other operating gains and losses*),
- net impairment loss of €143 million for continuing operations (see note F5 Results from portfolio management and reassessments, legacy remediation and major litigations),

- impairment loss of Solvay Indupa of €63 million, and
- €165 million for discontinued operations, including €95 million for straight-line depreciation and amortization (including PPA) related to Polyamides.

NOTE F13

Other non-operating and non-cash items

The other non-operating and non-cash items for 2017 (\in (179) million) comprise mainly the result related to the disposal of Acetow (\in (180) million), Cross Linkable Compound (\in (43) million), Emerging Biochemicals (\in (23) million), and the loss related to the deconsolidation of the Venezuelan subsidiary (\in 72 million).

The other non-operating and non-cash items for 2016 (\in (16) million) comprise mainly the gain related to the reversal of the Chemlogics holdback (\in (49) million), the impact from reversals of tax litigations provisions (\in 24 million), and other non-cash losses (impairment and gains on disposals).

NOTEF14 Income taxes In 2017

Income tax income amounts to €131 million, of which €197 million for continuing operations.

Income tax paid amounts to €223 million, of which €199 million for continuing operations.

In 2016

Income tax income amounted to €21 million, of which €68 million for continuing operations.

Income tax paid amounted to €212 million, of which €161 million for continuing operations.

NOTE F15 Changes in working capital

In € million	2017	2016
Inventories	(141)	17
Trade receivables	(137)	(157)
Trade payables	60	88
Other receivables/payables	2	(47)
Changes in working capital	(216)	(99)
Of which discontinued operations	(50)	(28)

See comments in the Business Review section.

NOTE F16

Changes in provisions

In 2017, the amount (€(192) million) includes:

- the cash-out for €(408) million of which €(22) million for discontinued operations, mainly Polyamides, and
- the additions (€375 million) and reversals (€(159) million) presented in note F31 Provisions.

In 2016, the amount (€(151) million) included:

- the cash-out for €(414) million of which €(24) million for discontinued operations, mainly Acetow and Polyamides, and
- the additions (€405 million) and reversals (€(141) million) presented in note F31 *Provisions*.

NOTE F17 Cash flows from investing activities – acquisition/disposal of assets and investments

2017			•
In € million	Acquisitions	Disposals	Total
Subsidiaries	(44)	891	846
Other	(11)		(11)
Total investments	(55)	891	836
Property, plant and equipment/Intangible assets	(822)	75	(746)
Total	(877)	966	89

2016			
In € million	Acquisitions	Disposals	Total
Subsidiaries	(23)	144	120
Other	(2)	6	4
Total investments	(26)	150	124
Property, plant and equipment/Intangible assets	(981)	76	(904)
Total	(1,006)	226	(780)

In 2017

The acquisition of subsidiaries (\in (44) million) is related mainly to the acquisition of European Carbon Fiber GmbH (\in (16) million), Energain (\in (13) million), and post-acquisition payments related to Cytec (\in (17) million).

The disposal of subsidiaries (€891 million) is related mainly to the disposal of Acetow (€734 million), Emerging Biochemicals (€180 million), Cross Linkable Compound (€62 million) and Formulated Resin (€38 million). The balance is mainly composed of amounts paid for prior years disposals without impact on the 2017 income statement (Inovyn (€(79) million), BASF (€(22) million), and Indupa (€(19) million).

The acquisition of property, plant and equipment and intangible assets (€(822) million) relates to various projects:

- Composite Materials: expansion of adhesive capacity in Wrexham (United Kingdom),
- Peroxides: construction of a 60Kt H₂O₂ plant at Zhengiang (China),
- Special Chem: new eH₂O₂ plant in Rosignano (Italy) and in Zhengiang (China),
- Specialty Polymers: investment in Fluorelastomers and PVDF in Changshu (China),

- Specialty Polymers: investment in Polyetheretherketone (PEEK) capacity (United States),
- Specialty Polymers: new production unit dedicated to Polyethersulfone (PESU) in Panoli (India).

In 2016

The acquisition of subsidiaries (\in (23) million) related mainly to the acquisition of Primester (\in (33) million) in 2016. The balance is related to prior year acquisitions: Cytec (\in (44) million), release of the Chemlogics holdback (\in 74 million), and Erca Emery Surfactant (\in (16) million).

The disposal of subsidiaries (€144 million) related mainly to the disposal of Inovyn (€335 million) and Indupa (€(157) million).

The acquisition of property, plant and equipment and intangible assets (€(981) million) related to various projects:

- Composite Materials: expansion of adhesive capacity in Wrexham (United Kingdom),
- Composite Materials: new resin infusion facility in Ostringen (Germany),
- Peroxides: build-up of a megaplant H₂O₂ joint operation in the Kingdom of Saudi Arabia with Sadara (JV Dow-Aramco),

- Peroxides: construction of a 60Kt H₂O₂ plant at Zhengiang
- Peroxides: H₂O₂ capacity expansion in Longview (United States),
- Silica: build-up of new highly dispersible silica (HDS) plant in Gunsan (South Korea),
- Special Chem: new eH2O2 plant in Rosignano (Italy),
- Specialty Polymers: investment in Fluorelastomers and PVDF in Changshu (China),
- Specialty Polymers: investment in Polyetheretherketone (PEEK) capacity (United States).

NOTE F18 Equity

Accounting policy

Share capital

Ordinary shares are classified as equity.

Incremental costs directly attributable to the issuance of new share capital are directly recognized in equity as a deduction, net of tax, from the equity issuance proceeds.

Reserves

The reserves include:

- · treasury shares,
- perpetual hybrid bonds that qualify as equity absent any unavoidable contractual obligation to repay the principal and interest of the perpetual hybrid bonds (no maturity, interest is payable annually but can be deferred indefinitely at the issuer's discretion),
- · retained earnings,
- · impact of hyperinflation accounting,
- currency translation differences from the consolidation process relating to the translation of the financial statements of foreign operations prepared in a functional currency other than the euro,
- the impacts of the fair value remeasurement of available-forsale financial assets,

- the impacts of the fair value remeasurement of financial instruments documented as hedging instruments in cash flow hedges, and
- actuarial gains and losses related to defined benefit plans.

Non-controlling interests

These represent the share of non-controlling interests in the net assets and comprehensive income of subsidiaries of the Group. This share represents the interests in subsidiaries that are not held by the Company or its subsidiaries.

General

To strengthen its capital structure, Solvay issued undated deeply subordinated perpetual bonds ("perpetual hybrid bonds") of respectively €1.2 billion in 2013 following the acquisition of Chemlogics and €1.0 billion (net of issuance costs €991 million) in December 2015 for the financing of the acquisition of Cytec.

Both perpetual hybrid bonds are classified as equity absent any unavoidable contractual obligation to repay the principal and interest of the perpetual hybrid bonds, specifically:

- no maturity, yet the issuer has a call option at every reset date to redeem the instrument, and
- at the option of the issuer, interest payments can be deferred indefinitely.

The coupons related to the perpetual hybrid bonds are recognized as equity transactions and are presented as dividends upon declaration (see consolidated statement of changes in equity):

- amounting to €57 million in 2017 (€57 million in 2016) for the 2013 €1.2 billion issuance (€700 million NC5.5 at 4.199% and €500 million NC10 at 5.425%), and
- amounting to €55 million in 2017 (€27 million in 2016) for the December 2015 €1.0 billion issuance (€500 million NC5.5 at 5.118% and €500 million NC8.5 at 5.869%).

When dividends are paid to the holders of ordinary shares, then interest shall be paid to the holders of the perpetual hybrid bonds.

Number of shares (in thousands)

	2	017 2016
Shares issued and fully paid at January 1	105,	876 105,876
Shares issued and fully paid at December 31	105,	876 105,876
Treasury shares held at December 31	2,	558 2,651

NOTE F19 Other cash flows from financing activities

In 2017 the other cash flows from financing activities (€17 million) relate mainly to the repayment of margin calls in connection with Solvay Energy Services activities.

In 2016 the other cash flows from financing activities (€7 million) related to the repayment of margin calls related to Solvay Energy Services activities.

NOTE F20

Cash flow from discontinued operations

The 2017 cash flow from discontinued operations (€77 million) results mainly from the total cash flow of Polyamides (€67 million) and Acetow (€15 million).

The 2016 cash flow from discontinued operations (€118 million) results from the total cash flow of Polyamides (€76 million), Acetow (€72 million), Emerging Biochemicals (€22 million), and Solvay Indupa (€(52) million).

Notes to the consolidated statement of financial position

NOTE F21 Intangible assets

Accounting policy

General

An intangible asset is an identifiable non-monetary asset without physical substance. It is identifiable when it is separable, i.e. is capable of being separated or divided from the Group, or when it arises from contractual or other legal rights. An intangible asset shall be recognized if, and only if:

- a. it is probable that the expected future economic benefits that are attributable to the asset will accrue to the Group,
- b. the cost of the asset can be measured reliably.

Intangible assets acquired or developed internally are initially measured at cost. The cost of an acquired intangible asset comprises its purchase price, including import duties and nonrefundable purchase taxes, after deducting trade discounts and rebates, and any directly attributable cost of preparing the asset for its intended use. Subsequent expenditure on intangible assets is capitalized only if it is probable that it will increase the future economic benefits associated with the specific asset. Other expenditure is recognized in profit or loss as incurred.

After initial recognition, intangible assets are measured at cost less accumulated amortization and impairment losses, if any.

Intangible assets are amortized on a straight-line basis over their estimated useful lives, which do not exceed the contractual period, if any. The estimated useful lives, residual values, and amortization methods are reviewed at each year end, and any changes in estimates are accounted for prospectively.

Patents and trademarks	2-20 years
Software	3-5 years
Development expenditures	2-5 years
Other intangible assets – Customer relationships	5-29 years
Other intangible assets – Technology	5-20 years

Amortization expense is included in the consolidated income statement within cost of goods sold, commercial and administrative costs, and research and development costs.

The asset is tested for impairment if there is a trigger for impairment, and annually for projects under development (see note F28 Impairment of property, plant and equipment, intangible assets, and equity method investees).

Intangible assets are derecognized from the consolidated statement of financial position on disposal or when no future economic benefits are expected from their use or disposal. The gain or loss arising from the derecognition of an intangible asset is recognized in profit or loss at the moment of derecognition.

Research and Development costs

Research costs are recognized in profit or loss in the period in which they are incurred.

Development costs are capitalized if, and only if, all the following conditions are fulfilled:

- the cost of the asset can be reliably measured,
- the technical feasibility of the product has been demonstrated,

- the product or process will be placed on the market or used internally,
- the assets will generate future economic benefits (a potential market exists for the product or, where it is to be used internally, its future utility has been demonstrated), and
- the technical, financial, and other resources required to complete the project are available.

Development costs comprise employee expenses, the cost of materials and services directly attributable to the projects, and an appropriate share of directly attributable fixed costs including, and where applicable, borrowing costs. The intangible assets are amortized as from the moment they are available for use, *i.e.* when they are in the location and condition necessary for them to be capable of operating in the manner intended by management. Development costs which do not satisfy the above conditions are recognized in profit or loss as incurred.

Other intangible assets

Other intangible assets consist mainly of customer lists and other intangible commercial assets acquired separately or in a business combination.

In € million	Development costs	Patents and trademarks	Customer relationships and	Total
Gross carrying amount	Development costs	trademarks	other intangible assets	TOLAI
At December 31, 2015	298	1,719	3,012	5,029
Additions	68	8	22	98
Disposals and closures	(26)	(14)	(5)	(45)
Currency translation differences	4	33	64	101
Other	(35)	60	(21)	4
Transfer to assets held for sale	(17)	(64)	(111)	-
	· ———————————————			(192)
At December 31, 2016	292 69	1,742	2,961	4,995
Additions		11 (15)	35	115
Disposals and closures	(30)	(15)	(7)	(51)
Increase through business combinations		11		11
Currency translation differences	(8)	(132)	(269)	(410)
Other	9	31	(18)	22
Transfer to assets held for sale	(47)	(60)	(97)	(204)
At December 31, 2017	285	1,588	2,605	4,478
Accumulated amortization	· · <u></u> - · <u></u>			
At December 31, 2015	(105)	(518)	(487)	(1,110)
Amortization	(28)	(123)	(221)	(372)
Impairment	·	2	(4)	(2)
Disposals and closures	26	12	2	39
Currency translation differences	(1)	(11)	(7)	(19)
Other	16	(17)	2	1
Transfer to assets held for sale	8	26	34	67
At December 31, 2016	(84)	(629)	(683)	(1,395)
Amortization	(37)	(121)	(214)	(372)
Impairment		(18)	(12)	(31)
Disposals and closures	30	15	6	50
Currency translation differences	1	30	42	74
Other	(5)	6	(2)	(1)
Transfer to assets held for sale	20	37	78	135
At December 31, 2017	(74)	(680)	(785)	(1,539)
Net carrying amount				
At December 31, 2015	193	1,201	2,525	3,919
At December 31, 2016	208	1,113	2,278	3,600
At December 31, 2017	211	908	1,820	2,940

Intangibles relate mainly to the intangibles acquired through the acquisitions of Rhodia (€264 million) and Cytec (€1,850 million, including €571 million for patents and trademarks and €1,278 million for acquired customer relationships). The average remaining useful life of Rhodia's assets is five years, and that of Cytec's assets is 15 years.

Impairments recognized in 2017 relate to discontinued operations.

NOTE F22 Goodwill and business combinations

Accounting policy

General

Acquisitions of subsidiaries are accounted for using the acquisition method. The consideration for each acquisition is measured at the aggregate of the fair values (at the date of acquisition) of assets transferred and liabilities incurred or assumed, and equity instruments issued by the Group in exchange for control of the acquiree. Acquisition-related costs are recognized in profit or loss as incurred.

Where applicable, the consideration for the acquisition includes any asset or liability resulting from a contingent consideration arrangement, measured at its acquisition-date fair value. Subsequent changes in such fair values are adjusted against the cost of acquisition where they qualify as measurement period adjustments (see below). All other subsequent changes in the fair value of contingent consideration classified as an asset or liability are accounted for in accordance with relevant IFRSs, generally through profit or loss.

Where a business combination is achieved in stages, the Group's previously held interests in the acquired entity are remeasured to fair value at the acquisition date (i.e. the date the Group obtains control) and the resulting gain or loss, if any, is recognized in profit or loss. Amounts arising from interests in the acquiree prior to the acquisition date that have previously been recognized in other comprehensive income are reclassified to profit or loss, where such treatment would be appropriate if that interest were disposed of.

The acquiree's identifiable assets, liabilities, and contingent liabilities that meet the conditions for recognition under IFRS 3 Business Combinations are recognized and measured at their fair value at the acquisition date, except that:

• deferred tax assets or liabilities, and liabilities or assets related to employee benefit arrangements, are recognized and measured in accordance with IAS 12 Income Taxes, and IAS 19 Employee Benefits, respectively,

- liabilities or equity instruments relating to the replacement by the Group of an acquiree's share-based payment awards are measured in accordance with IFRS 2 Share-based Payment,
- assets (or disposal groups) that are classified as held for sale in accordance with IFRS 5 Non-current Assets Held for Sale and Discontinued Operations are measured in accordance with that Standard.

If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the accounting is incomplete. Those provisional amounts are adjusted during the measurement period (see paragraph below), or additional assets or liabilities are recognized, to reflect new information obtained about facts and circumstances that existed as of the acquisition date that, if known, would have affected the amounts recognized as of that date.

The measurement period is the period from the date of acquisition to the date the Group obtains complete information about facts and circumstances that existed as of the acquisition date, and does not exceed twelve months.

Goodwill

Goodwill arising in a business combination is recognized as an asset at the date that control is obtained (the acquisition date). Goodwill is measured as the excess of the sum of:

- the consideration transferred,
- · the amount of any non-controlling interests in the acquiree,
- in a business combination achieved in stages, the acquisition date fair value of the previously held equity interest in the acquiree,

over the share acquired by the Group in the fair value of the entity's identifiable net assets at the acquisition date.

Goodwill is not amortized but is tested for impairment on an annual basis, and more frequently if any impairment triggers are identified.

For the purpose of impairment testing, goodwill is allocated to each of the Group's cash-generating units (or groups of cash-generating units) in accordance with IAS 36 *Impairment of Assets*.

A cash-generating unit (CGU) is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other group(s) of assets.

These tests consist of comparing the carrying amount of the assets or (groups of) CGUs with their recoverable amount. The recoverable amount of an asset or a (group of) CGU(s) is the higher of its fair value less costs to sell and its value in use. If the recoverable amount of the CGU is less than its carrying amount, the impairment loss is allocated to reducing firstly the carrying amount of any goodwill allocated to the unit and then the other

assets of the unit pro rata on the basis of the carrying amount of each asset in the unit. An impairment loss recognized on goodwill shall not be reversed in a subsequent period.

Assets held for sale include their related goodwill.

On disposal of an operation within a CGU to which goodwill has been allocated, the goodwill associated with the operation disposed of is included in the determination of the profit or loss on disposal. It is measured on the basis of the relative values of the operation disposed of and the portion of the CGU retained, unless another method better reflects the goodwill associated with the operation disposed of.

Goodwill - overview

In € million	Total
Net carrying amount	
At December 31, 2015	5,840
Additions	31
Currency translation differences	116
Adjustment of Cytec provisional goodwill within the measurement period	(23)
Transfer to assets held for sale	(286)
At December 31, 2016	5,679
Disposals	(35)
Currency translation differences	(421)
Transfer to assets held for sale	(180)
At December 31, 2017	5,042

In 2017, the change in goodwill is explained by:

- the disposal of a part of the Performance Chemicals segment following the divestment of Acetow (€(35) million),
- currency translation differences relating mainly to goodwill expressed in US dollars, and
- the transfer of goodwill relating to Polyamides (€(173) million) and Phosphorus Derivatives (€(7) million) to assets held for sale

In 2016, the change in goodwill was explained by:

• additions (€31 million) related to the Primester acquisition,

- adjustments of Cytec provisional goodwill within the measurement period (€(23) million), and
- the transfer of goodwill relating to Acetow (€(224) million), Emerging Biochemicals (€(22) million), Formulated Resins (€(29) million), and Cross Linkable Compound (€(11) million) to assets held for sale.

Goodwill by CGU

Goodwill acquired in a business combination is allocated to the CGU or groups of CGUs (Operating Segments) that are expected to benefit from that business combination.

				2016						2017		
In € million	At beginning of the period	Transfer	Adjust- ments	Transfer to assets held for sale	Acquisitions and divestments	Currency trans- lation differ- ences	At the end of the period	Adjust- ments	Transfer to assets held for sale	Acquisitions and divestments	Currency trans- lation differ- ences	At the end of the period
Groups of CGUs (Operating segments)	-											
Advanced												
Formulations	227	(35)					192	2				194
Advanced Materials	493			-		-	493					493
Performance				-		-						
Chemicals	164	35		(75)			124		(3)	(35)		86
Cytec	2,598	(2,575)	(23)									
Cash generating units												
Composites materials	-	1,399		-		48	1,447				(181)	1,266
Novecare	1,157	145		-		33	1,335				(104)	1,231
Technology solutions	-	1,032		(29)	-	35	1,037		(7)		(127)	903
Special Chem	228			·		(1)	227	(2)			, ,	225
Polyamides	170					·	170		(170)			
Specialty Polymers	194			(11)		1	184		, ,		(7)	178
Acetow	120			(151)	31							
Soda ash and derivatives	162						162					162
Coatis	82						82					82
Silica	72			-	-		72					72
Aroma Performances	49			-			49					49
Energy Services	50						50					50
Hydrogen Peroxyde Europe	20						20				1	21
Emerging biochemicals	20			(20)								
Hydrogen Peroxyde Mercosul	14				-		14					14
Hydrogen Peroxyde Nafta	8			-			8				(1)	7
Hydrogen Peroxyde Asia	10			-			10					11
PVC Mercosur	1						1				(1)	
Total goodwill	5,840		(23)	(286)	31	116	5,679		(180)	(35)	(421)	5,042

In 2016, following the acquisition of Cytec, Solvay re-organized its segment set-up to enhance strategic coherence and improve alignment. Cytec's former Aerospace Materials and Industrial Materials activities are included in Advanced Materials and its In Process Separation and Additive Technologies activities are included in Advanced Formulations, Solvay's GBU Coatis has been transferred to Performance Chemicals.

Business combinations Energain

On February 1, 2017, Solvay announced the acquisition of Energain™ Li-Ion high voltage technology from DuPont for €13 million. Energain™ technology and formulations enlarge Solvay Special Chem Global Business Unit's existing portfolio of high performance salts and additives for electrolytes and strengthen its capabilities to develop further innovative highvoltage solutions for Li-ion batteries. The identified net assets acquired amount to €13 million and relate mainly to intangible assets.

European Carbon Fiber GmbH

On November 7, 2017, Solvay completed the acquisition of European Carbon Fiber GmbH ("ECF"), a German producer of high-quality "precursor" for large-tow (50K) polyacrylonitrile (PAN) carbon fibers for €16 million. The identified assets acquired amount to €22 million and relate mainly to tangible assets, less deferred tax liabilities of €6 million.

NOTE F23 Property, plant, and equipment



Accounting policy

General

Property, plant, and equipment are tangible items that:

- are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes,
- are expected to be used during more than one period.

The items of property, plant, and equipment owned by the Group are recognized as property, plant, and equipment when the following conditions are satisfied:

- it is probable that the future economic benefits associated with the asset will accrue to the Group, and
- the cost of the asset can be measured reliably.

Items of property, plant, and equipment are initially measured at cost. The cost of an item of property, plant, and equipment comprises its purchase price and any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management. If applicable, the cost comprises borrowing costs during the construction period.

After initial recognition, items of property, plant, and equipment are measured at cost less accumulated depreciation and impairment losses, if any.

Items of property, plant, and equipment are depreciated on a straight-line basis over their estimated useful lives. The components of an item of property, plant, and equipment with different useful lives are depreciated separately. Land is not depreciated. The estimated useful lives, residual values, and depreciation methods are reviewed at each year end, and any changes in estimates are accounted for prospectively.

Buildings	30-40 years
IT equipment	3-5 years
Machinery and equipment	10-20 years
Transportation equipment	5-20 years

Depreciation expense is included in the consolidated income statement within cost of goods sold, commercial and administrative costs, and R&D costs.

The asset is tested for impairment if there is a trigger for impairment (see note F28 Impairment of property, plant, and equipment, intangible assets, and equity method investees).

Items of property, plant, and equipment are derecognized from the consolidated statement of financial position on disposal or when no future economic benefits are expected from their use or disposal. The gain or loss arising from the derecognition of an item of property, plant, and equipment is recognized in profit or loss at the moment of derecognition.

Subsequent expenditure

Subsequent expenditure related to items of property, plant, and equipment is capitalized only if it is probable that it will increase the future economic benefits associated with the specific asset. Other expenditure is recognized in profit or loss as incurred. Subsequent expenditure incurred for the replacement of a component of an item of property, plant, and equipment is recognized as an asset only if it satisfies the recognition criteria mentioned above. The carrying amount of replaced items is derecognized.

Repair and maintenance costs are recognized in the consolidated income statement as incurred.

Regarding its industrial activity, Solvay incurs expenditure for major repairs over several years for most of its sites. The purpose of this expenditure is to maintain certain installations in proper working order without altering their useful life. This expenditure is considered a specific component of the item of property, plant, and equipment and is depreciated over the period during which the economic benefits are expected to be obtained, *i.e.* the interval between major repairs.

Dismantling costs

Dismantling and restoration costs are included in the cost of an item of property, plant, and equipment if the Group has a legal or constructive obligation to dismantle or restore. They are depreciated over the useful life of the items to which they pertain. Generally, Solvay's obligation to dismantle and/or restore its operating sites is likely to arise only upon the discontinuation of a site's activities. A provision for dismantling discontinued sites or installations is recognized if there is a legal obligation (due to a request or injunction from the relevant authorities), or if there is no technical alternative to dismantling, so to ensure the safety compliance of the discontinued sites or installations.

Borrowing costs

Borrowing costs directly attributable to the acquisition, construction, or production of qualifying assets, which are assets that necessarily take a substantial period of time to get ready for their intended use or sale, are added to the cost of those assets until such time as the assets are substantially ready for their intended use or sale.

Investment income earned on the temporary investment of specific borrowings pending their expenditure on qualifying assets is deducted from the borrowing costs eligible for capitalization.

All other borrowing costs are recognized in profit or loss in the period in which they are incurred.

In € million	Land and buildings	Fixtures and equipment	Other tangible assets	Property, plant and equipment under construction	Total
Gross carrying amount					
At December 31, 2015	3,332	11,718	480	1,248	16,778
Additions	22	170	11	621	823
Disposals and closures	(72)	(302)	(24)		(397)
Currency translation		(502)	(= 1)		(33.7)
differences	(48)	35	2	2	(9)
Other	260	687	41	(922)	66
Transfer to assets held					
for sale	(256)	(1,378)	(102)	(33)	(1,769)
At December 31, 2016	3,237	10,929	409	916	15,492
Additions	80	241	16	352	689
Disposals and closures	(34)	(266)	(22)	(1)	(322)
Increase through business combinations		22			22
Currency translation differences	(149)	(594)	(21)	(46)	(808)
Other	64	451	17	(551)	(19)
Transfer to assets held	(25.4)	(1, 422)	(20)	(06)	(1.002)
for sale	(354)	(1,422)	(20)	(86)	(1,882)
At December 31, 2017 Accumulated depreciation	2,844	9,362	381	585	13,171
At December 31, 2015	(1,530)	(7,935)	(367)		(9,832)
Depreciation	(111)	(572)	(42)		(725)
Impairment	(57)	(75)	(-2)		(132)
Reversal of impairment			3		3
Disposals and closures	41	301	23		364
Currency translation					
differences	39	51	(0)		89
Other	(7)	(34)	(8)		(50)
Transfer to assets held for sale	84	1,083	96		1,263
At December 31, 2016	(1,543)	(7,181)	(297)		(9,020)
Depreciation	(99)	(517)	(36)		(652)
Impairment	(43)	(56)			(99)
Reversal of impairment			2		2
Disposals and closures	31	265	22		318
Currency translation differences	56	341	14		411
Other	19	(30)	2		(10)
Transfer to assets held for sale	220	1,076	16		1,312
At December 31, 2017	(1,359)	(6,101)	(278)		(7,737)
Net carrying amount	(1,555)	(0,101)	(2,0)		(,,,51)
At December 31, 2015	1,802	3,783	113	1,248	6,946
At December 31, 2016	1,695	3,748	112	916	6,472
At December 31, 2017	1,485	3,260	103	585	O, . / Z

Cash flows related to major investments have been disclosed in note F17 Cash flows from investing activities – acquisition/disposal of assets and investments.

NOTE F24 Leases



Accounting policy

General

Leases are classified as finance leases whenever the terms of the lease transfer substantially all the risks and rewards incidental to ownership. All other leases are classified as operating leases.

Agreements not in the legal form of a lease contract are analyzed in accordance with IFRIC 4 Determining whether an Arrangement contains a Lease to determine whether or not they contain a leasing contract to be accounted for in accordance with IAS 17 Leases.

Finance leases - lessee

On commencement of the lease, assets held under finance leases are initially recognized as assets of the Group at their fair value, or, if lower, at the present value of the minimum lease payments. The corresponding liability to the lessor is included in the consolidated statement of financial position as a finance lease obligation.

Assets held under finance leases are depreciated over their expected useful lives on the same basis as owned assets or, where shorter, the term of the lease.

Lease payments are apportioned between finance expenses and reduction of the lease obligation so as to produce a constant periodic rate of interest on the remaining balance of the liability. Finance expenses are recognized immediately in profit or loss, unless they are directly attributable to qualifying assets, in which case they are capitalized in accordance with the Group's general policy on borrowing costs (see above). Contingent rentals arising under finance leases are recognized as expenses in the periods in which they are incurred.

Operating leases - lessee

Operating lease payments are recognized as an expense on a straight-line basis over the lease term, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed. Contingent rentals arising under operating leases are recognized as an expense in the period in which they are incurred.

In the event that lease incentives are received to enter into operating leases, such incentives are recognized as a liability. The aggregate benefit of incentives is recognized as a reduction of rental expense on a straight-line basis, except where another systematic basis is more representative of the time pattern in which economic benefits from the leased asset are consumed.

Finance leases

In € million	2017	2016
Net carrying amount of finance leases included in the previous table		
Land and buildings	2	5
Fixtures and equipment	33	47
Total	35	53

Finance lease obligations

	Minimum lea	se payments
In € million	2017	2016
Amounts payable under finance leases:		
Within one year	9	11
In years two to five inclusive	28	34
Beyond five years	72	88
Less: future finance charges	(64)	(81)
Present value of minimum lease payments of finance leases	46	52
Amount due for settlement within 12 months	9	11
Amount due for settlement after 12 months	101	122

Operating lease obligations

In € million	2017	2016
Total minimum lease payments under operating leases recognized in the consolidated income statement of the year	94	107
In € million	2017	2016
Within one year	84	96
In years two to five inclusive	226	281
Beyond five years	141	113
Total of future minimum lease payments under non-cancellable operating leases (undiscounted)	450	490

Operating leases relate mainly to buildings and fleet (mostly railcars). The lease commitments reported at the end of each year exclude those from discontinued operations. The lease commitments reported for 2016 include €16 million for Polyamides that were classified as discontinued operations for the first time in 2017. Future minimum lease payments in 2017 decreased also because of foreign exchange of €(30) million

In preparation for IFRS 16 implementation, the 2017 future minimum lease payments have been reviewed and:

- exclude non-lease components,
- include amounts due related to extension options when it is reasonably certain to exercise the options. This pertains mainly to buildings, and
- exclude future minimum lease payments for assets with a commencement date in 2018 (€67 million at the end of 2017).

The lease debt as of January 1, 2019 will be computed for IFRS 16 based on discount rates applicable as of January 1, 2019.

NOTE F25 Assets held for sale



Accounting policy

Non-current assets and disposal groups are classified as held for sale if their carrying amount will be recovered principally through a sale transaction rather than through continuing use. This condition is regarded as met only when the sale is highly probable and the asset (or disposal group) is available for immediate sale in its present condition. For a sale to be highly probable, management should be committed to a plan to sell the asset (or disposal group), an active program to locate a buyer and complete the plan should be initiated, the asset (or disposal group) should be actively marketed at a price which is reasonable in relation to its current fair value, the sale should be expected to be completed within one year from the date of classification, and actions required to complete the plan should indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

When the Group is committed to a sale plan involving loss of control of a subsidiary, all of the assets and liabilities of that subsidiary are classified as held for sale when the criteria described above are met, regardless of whether the Group will retain a non-controlling interest in its former subsidiary after the

Non-current assets (and disposal groups) classified as held for sale are measured at the lower of their previous carrying amount and their fair value less costs to sell. Any excess of the carrying amount over the fair value less costs to sell is recognized as an impairment loss. Depreciation of such assets is discontinued as from their classification as held for sale. Prior period consolidated statements of financial position are not restated to reflect the new classification of a non-current asset (or disposal groups) as held for sale.

		2017					
In € million	Polyamides	Phosphorus Derivatives	Acetow	Total			
Operating segment	Performance Chemicals	Adanced Formulations	Performance Chemicals				
Property, plant and equipment	557	13		569			
Goodwill	173	7		180			
Intangible assets	68			68			
Investments	1			1			
Inventories	178	8		186			
Trade and other receivables (including deferred tax assets)	262		17	279			
Assets held for sale	1,238	28	17	1,284			
Non-current liabilities	111			111			
Trade payables and other liabilities	238			238			
Liabilities associated with assets held for sale	349			349			
Net carrying amount of the disposal group	890	28	17	935			
Included in other comprehensive income							
Currency translation differences	21			21			
Defined benefit plans	(3)			(3)			
Other comprehensive income	19			19			

			2016		
		Emerging		Cross Linkable	
In € million	Acetow	Biochemicals	Formulated Resin	Compound	Total
	Performance	Performance	Adanced		
Operating segment	Chemicals	Chemicals	Formulations	Adanced Materials	
Property, plant and equipment	282	205	5	14	506
Goodwill	224	22	29	11	286
Intangible assets	95	1	29		125
Investments	2	11			13
Inventories	73	30	3	8	115
Trade and other receivables (including					
deferred tax assets)	119	76	2		196
Cash and cash equivalent		85			85
Assets held for sale	800	429	68	33	1,331
Non-current liabilities	265	4	10	1	280
Trade payables and other liabilities	60	62	1		123
Liabilities associated with assets held for					
sale	325	66	10	1	403
Net carrying amount of the disposal					
group	474	364	58	32	928
Included in other comprehensive income					
Currency translation differences	(25)	(1)			(25)
Defined benefit plans	(36)	(1)			(36)
Cash flow hedges	(1)		<u> </u>	<u> </u>	(1)
Other comprehensive income	(61)	(1)			(63)

NOTE F26

Investments in associates and joint ventures

Investments in associates(1)

In € million	2017	2016
Carrying amount at January 1	24	41
Acquisition/Disposal		(1)
Profit (loss) for the year from associates	3	2
Dividends received from associates	(2)	(2)
Impairment (loss)/reversal		(11)
Currency translation differences	(1)	(1)
Transfer to assets held for sale	(1)	(5)
Other		2
Carrying amount at December 31	23	24

(1) See note F39.

In 2016, the impairment loss of €(11) million related to the US torrefied biomass electricity generation project following the decision to exit the project.

Investments in joint ventures(1)

In € million	2017	2016
Carrying amount at January 1	473	357
Acquisition/Disposal	(19	(2)
Capital increase/decrease	3	3
Profit (loss) for the year from joint ventures	41	83
Dividends received from joint ventures	(16	(20)
Transfer from other investments		1
Currency translation differences	(39	53
Other		(2)
Carrying amount at December 31	443	473

(1) See note F39.

In 2017, the disposal relates to the sale of Dacarto Benvic. The currency translation differences relate mainly to the devaluation of the Russian ruble and the Brazilian real against the euro.

NOTE F27 Other investments

Accounting policy

In accordance with the concept of materiality, certain companies which are insignificant have not been included in the consolidation scope. They are measured at cost and tested for impairment on an annual basis. For more information, refer to Principles of consolidation.

In € million	2017	2016
Carrying amount at January 1	54	92
Disposals	(1)	(8)
Increase through business combination		(5)
Capital increase/decrease		4
Changes of consolidation method		(4)
Changes in consolidation scope		(4)
Impairments	(6)	(7)
Transfer to assets held for sale		(11)
Other	(1)	(3)
Carrying amount at December 31	47	54

NOTE F28

Impairment of property, plant, and equipment, intangible assets, and equity method investees



Accounting policy

General

At the end of each reporting period, the Group reviews whether there is any indication that those assets have suffered an impairment loss. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss (if any). Where it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the CGU to which the asset belongs. Where a reasonable and consistent basis of allocation can be identified, corporate assets are allocated to individual CGUs, or otherwise they are allocated to the smallest group of CGUs for which a reasonable and consistent allocation basis can be identified.

The recoverable amount is the higher of the fair value less costs to sell and the value in use. In assessing value in use, the estimated future cash flows are discounted to their present value using a pre-tax discount rate. Future cash flows are adjusted for risks not incorporated into the discount rate.

If the recoverable amount of an asset (or CGU) is estimated to be less than its carrying amount, the carrying amount of the asset (or CGU) is reduced to its recoverable amount. An impairment loss is recognized immediately in profit or loss.

Where an impairment loss subsequently reverses, the carrying amount of the asset (or CGU) is increased to the revised estimate of its recoverable amount, but so that the increased carrying amount does not exceed the carrying amount that would have been determined (net of amortization or depreciation) had no impairment loss been recognized for the asset (or CGU) in prior years. A reversal of an impairment loss is recognized immediately in profit or loss.

Assets other than non-current assets held for sale

In accordance with IAS 36 Impairment of Assets, the recoverable amount of property, plant, and equipment, intangible assets, CGUs or groups of CGUs, including goodwill, and equity method investees corresponds to the higher of their fair value less costs of disposal and their value in use. The latter equals the present value of the future cash flows expected to be derived from each asset, CGU or group of CGUs, and equity method investees and is determined using the following inputs:

- business plan approved by management based on growth and profitability assumptions, taking into account past performances, forecast changes in the economic environment, and expected market developments. Such business plan generally covers five years, unless management is confident that projections over a longer period are reliable,
- consideration of a terminal value determined from the cash flows obtained by extrapolating the cash flows of the last year of the business plan referred to above, affected by a longterm growth rate deemed appropriate for the activity and the location of the assets, and
- discounting of expected cash flows at a rate determined using the weighted average cost of capital formula.

Discount rate

The discount rate is estimated based on an extensive benchmarking with peers, so as to reflect the return investors would require if they were to choose an investment in the underlying assets. The weighted average cost of capital used to discount future cash flows was set at 6.7% in 2017 (7.2% in 2016). The discount rate of 6.7% is in line with 2016 computation, except that the reduction in the discount rate was capped to 50 bps in 2016 (i.e. from 7.7% in 2015 to 7.2% in 2016) to avoid excess volatility.

Long-term growth rates

In 2017 and 2016, the long-term growth rate was set at 2%, except for Aroma, for which a 1% rate was set. The growth rates are consistent with the long-term average market growth rates for the respective CGUs and the countries in which they operate.

Other key assumptions are specific to each CGU (energy price, volumes, margin, etc.).

General

The impairment tests performed at CGU level at December 31, 2017 and 2016 did not lead to any impairment of assets, as the recoverable amounts of the (groups of) CGUs were significantly higher than their carrying amounts. More specifically, except as described below, the difference between the (groups of) CGUs' carrying amount and their value in use (headroom) represents in all cases more than 10% of their carrying amount. As such, for those CGUs or groups of CGUs, a reasonable change in a key assumption on which the recoverable amount of the CGUs or groups of CGUs is based would not result in an impairment loss for the related CGUs or groups of CGUs.

In this respect, for Composite Materials and Technology Solutions, which are the CGUs resulting from the acquisition of Cytec at the end of 2015, the sensitivity analysis below leads to headrooms that are around 10% of their respective carrying amounts.

Assumptions: Discount rate = 6.7% Long term growth rate = 2%	Recoverable am	ount (in € billion)	Headroom	(in € billion)
	Composite Materials	Technology Solutions	Composite Materials	Technology Solutions
Sensitivity to long term growth rate -1%	(0.6)	(0.4)	0.4	0.4
Sensitivity to long term growth rate +1%	0.9	0.6	1.9	1.4
Sensitivity to discount rate -0.5%	0.5	0.3	1.4	1.2
Sensitivity to discount rate +0.5%	(0.4)	(0.3)	0.5	0.6

An unfavorable change in growth or discount rate as disclosed above is not expected to result in an impairment.

RusVinyl

RusVinyl is a Russian joint venture in chlorovinyls (Operating Segment: Performance Chemicals) in which Solvay holds a 50% equity interest and Sibur holds the other 50% equity interest.

The recoverable amount of the investment has been estimated based on a dividend discount model taking into account the latest business plan. It is highly sensitive to the RUB/€ exchange rate. This rate impacts the carrying amount of the investment, the foreign currency losses on the euro denominated debt, and consequently the distributable earnings potential. The impairment test confirms that the value-in-use (based on dividend discount model) is in line with the carrying amount.

Other

Impairment losses have been recognized in 2017 with respect to the retained Latin American assets in the Polyamides business (€91 million).

Impairment losses have been recognized in 2016 mainly with respect to the following assets: the Egyptian Soda Ash plant following the mothballing decision (€82 million – Operating Segment: Performance Chemicals), Brazilian electricity cogeneration assets following adverse market conditions (€28 million – Operating Segment: Corporate and Business Services), the Coleopterre assets (€16 million – Operating Segment: Advanced Materials), and the US torrefied biomass electricity generation project following the decision to exit the project (€10 million – Operating Segment: Corporate and Business Services).

Non-current assets held for sale

No impairment has been identified for business classified as noncurrent assets held for sale at the end of 2017.

On May 2, 2016, Solvay entered into a Share Purchase Agreement with Unipar Carbocloro for the sale of its equity interests held in Solvay Indupa. During the third quarter of 2016, the fair value less cost to sell had been updated, so as to reflect the impact of the worsening of the business environment on the deal. An impairment loss of €63 million was recognized in 2016.

NOTE F29 Inventories

Accounting policy

Cost of inventories includes the purchase, conversion, and other costs incurred in bringing the inventories to their present location and condition. The cost of inventories is determined by using the weighted average cost or first-in, first-out (FIFO) method. Inventories having a similar nature and use are measured using the same cost formula.

Inventories are measured at the lower of purchasing cost (raw materials and merchandise) or production cost (work in progress and finished goods), and net realizable value. Net realizable value represents the estimated selling price, less all estimated costs of completion and the estimated costs necessary to make the sale.

CO₂ emission rights

With respect to the mechanism set up by the European Union to encourage manufacturers to reduce their greenhouse gas emissions, the Group was granted carbon dioxide (CO₂) emission rights for some of its installations. The Group is also involved in the Clean Development Mechanism (CDM) under the Kyoto protocol. Under these projects, the Group has deployed facilities in order to reduce greenhouse gas emissions at the relevant sites in return for Certified Emission Reductions (CER).

In the absence of any IFRS regulating the accounting treatment of CO₂ emission rights, the Group applies the Trade/Production model, according to which CO₂ emission rights are presented as inventories if they will be consumed in the production process or as derivatives if they are held for trading. Energy Services is involved in CO2 instrument trading, arbitrage, and hedging activities. The net income or expenses from these activities are recognized in other operating income for the industrial component, where Energy Services sells the CO₂ emission rights generated by Solvay, as well as for the trading component, where Energy Services acts as a trader/broker with respect to those CO₂ emission rights.

In € million	2017	2016
Finished goods	975	1,051
Raw materials and supplies	568	649
Work in progress	24	45
Total	1,567	1,745
Write-downs	(63)	(73)
Net total	1,504	1,672

NOTE F30 Other receivables (current)

In € million	2017	2016
VAT and other taxes	266	289
Advances to suppliers	69	79
Financial instruments – operational	153	188
Insurance premiums	24	24
Loan receivables	13	9
Receivables on assets disposal	3	39
Other	99	107
Other current receivables	627	736

Financial instruments - operational include held for trading and cash flow hedge derivatives (see note F32.A. Overview of financial instruments).

NOTE F31 Provisions

In € million	Employee benefits	Restructuring	Environment	Litigation	Other	Total
At December 31, 2016	3,118	99	737	167	148	4,269
Additions	91	61	78	28	117	375
Reversals of unused amounts	(40)	(33)	(24)	(39)	(24)	(159)
Uses	(217)	(55)	(81)	(25)	(29)	(408)
Increase through discounting	64		33	3		100
Remeasurements	(95)					(95)
Currency translation differences	(79)	(3)	(36)	(9)	(10)	(137)
Disposals	8					7
Transfer from/to liabilities associated with assets held for sale	(70)	(1)			(3)	(74)
Other	34	(5)	(5)	5	(20)	9
At December 31, 2017	2,816	62	702	129	180	3,890
Of which current provisions		56	112	12	100	281

In total provisions decrease by €379 million.

The main events of 2017 are:

- a net decrease in provisions of €192 million for additions, reversals and uses. The use of €408 million (cash-out) includes €386 million for continuing operations, of which €208 million for employee benefits, €55 million for restructuring plans, and €81 million for environmental items,
- an increase from discounting for €100 million,

- remeasurement of employee benefits obligation for €(95) million,
- currency translation differences for €(137) million, and
- the transfer of liabilities from continuing operations to liabilities associated with assets held for sale for €(74) million relating mainly to employee benefits obligations in connection with Polyamides.

Management expects provisions (other than employee benefits) to be used (cash outlays) as follows:

		Between		
In € million	Up to 5 years	5 and 10 years	Beyond 10 years	Total
Total provisions for environment	317	122	264	702
Total provisions for litigation	126	3		129
Total provisions for restructuring and other	206	14	22	242
At December 31, 2017	648	139	286	1,073

F31.A. Provisions for employee benefits

Accounting policy

General

The Group's employees are offered various post-employment and other long-term employee benefits as a result of legislation applicable in certain countries, and contractual agreements entered into by the Group with its employees or constructive obligations.

The post-employment benefits are classified as defined contribution or defined benefit plans.

Defined contribution plans

Defined contribution plans involve the payment of fixed contributions to a separate entity and release the employer from any subsequent obligation, as this separate entity is solely responsible for paying the amounts due to the employee. The expense is recognized when an employee has rendered service to the Group during the period.

Defined benefit plans

Defined benefit plans concern all plans other than defined contribution plans and include:

- post-employment benefits: pension plans, termination benefits, other retirement obligations, and supplemental benefits,
- other long-term employee benefits: long-service benefits granted to employees according to their seniority in the Group, and
- other post-employment benefits: medical care.

Taking projected final salaries into account on an individual basis, post-employment benefits are measured by applying a method (projected unit credit method) using assumptions involving discount rate, life expectancy, turnover, wages, annuity revaluation, and medical cost inflation. The assumptions specific to each plan take into account the local economic and demographic contexts.

The discount rates are interest rates of high-quality corporate bonds that are denominated in the currency in which the benefits will be paid, and that have terms to maturity approximating the terms of the related pension obligation.

The amount recognized under post-employment obligations corresponds to the difference between the present value of future obligations and the fair value of the plan assets funding the plan. If this calculation gives rise to a deficit, an obligation is recognized in liabilities. Otherwise, a net asset limited to the lower of the surplus in the defined benefit plan and the present value of any future plan refunds or any reduction in future contributions to the plan is recognized.

The defined benefit cost consists of service cost and net interest (based on discount rate) on the net liability or asset, both recognized in profit or loss, and remeasurements of the net liability or asset, recognized in other comprehensive income.

Service cost consists of current service cost, past service cost resulting from plan amendments or curtailments, and settlement gains or losses.

The interest expenses arising from the reverse discounting of the benefit obligations, the financial income on plan assets (determined by multiplying the fair value of the plan assets by the discount rate), and interest on the effect of the asset ceiling are recognized on a net basis in the net financial charges.

Remeasurements of the net liability or asset consist of:

- actuarial gains and losses on the benefit obligations arising from experience adjustments and/or changes in actuarial assumptions (including the effect of changes in the discount rate), and
- the return on plan assets (excluding amounts in net interest) and changes in the limitation of the net asset recognized.

Other long-term benefits such as long service awards are accounted for in the same way as post-employment benefits but remeasurements are fully recognized in the net financial charges during the period in which they occur.

The actuarial calculations of post-employment obligations and other long-term benefits are performed by independent actuaries.

Overview

In € million	2017	2016
Post-employment benefits	2,635	2,949
Other long-term benefits	132	120
Termination benefits	49	48
Total employee benefits	2,816	3,118

A. Defined contribution plans

For defined contribution plans, Solvay pays contributions to publicly or privately administered pension funds or insurance companies. For 2017, the expense amounted to €55 million as against €56 million for 2016.

B. Defined benefit plans

Defined benefit plans can either be funded via outside pension funds or insurance companies ("funded plans") or financed within the Group ("unfunded plans").

The net liability results from the net of the provisions and the capitalized pensions assets.

In € million	2017	2016
Provisions	2,635	2,949
Asset plan surplus	(14)	(13)
Net liability	2,622	2,936
Operational expense	31	55
Finance expense	62	80

B.1. Management of risks

Over recent years, the Group has reduced its exposure to defined benefit plan obligations stemming from future services by converting existing plans into pension plans with a lower risk profile (hybrid plans, cash balance plans, and defined contribution plans) or by closing them to new entrants.

Solvay continuously monitors its risk exposure, focusing on the following risks:

Asset volatility

Equity instruments, though expected to outperform corporate bonds in the long-term, create volatility and risk in the short term. To mitigate this risk, the allocation to equity instruments is monitored using Assets and Liabilities Management techniques, to ensure it remains appropriate given the long-term objectives of the Group and of the respective schemes.

Changes in bond yields

A decrease in corporate bond yields will increase the carrying amount of the plan's liabilities. For funded schemes this impact will be offset partially by an increase in the fair value of the plan assets.

Inflation risk

The defined benefit obligations are linked to inflation, and higher inflation will lead to higher liabilities (although, in most cases, caps on the level of inflationary increases are in place to protect

against extreme inflation). A limited proportion of the assets is either unaffected by or only loosely correlated with inflation, meaning that an increase in inflation will also increase the deficit.

Life expectancy

The majority of the schemes' obligations are to provide benefits for the life of the member. Increases in life expectancy will therefore increase the plans' liabilities.

Currency risk

This risk is limited, as major plans in foreign currency are funded and most of their assets are denominated in the currency in which benefit payments will take place.

Regulatory risk

For partly or fully unfunded plans, the Group is exposed to the risk of external funding following regulatory constraints. This should not impact the defined benefit obligation but could expose the Group to a potential significant cash outlay.

For more information about Solvay Group risk management, please refer to the "Management of risks" section of the present document.

B.2. Description of obligations

The provisions have been set up primarily to cover postemployment benefits granted by most Group companies, in line either with local rules and customs or with established practices which generate constructive obligations. The largest post-employment plans in 2017 are in the United Kingdom, France, the United States, Germany, and Belgium. These five countries represent 94% of the total defined benefit obligations.

	2017	2016
United Kingdom	31%	30%
France	20%	20%
United States	26%	27%
Germany	10%	10%
Belgium	7%	7%
Other countries	6%	6%

United Kingdom

Solvay sponsors a few defined benefit plans in the United Kingdom; the largest one is the Rhodia Pension Fund. This is a final salary funded pension plan, with entitlement to accrue a percentage of salary per year of service. It was closed to new entrants in 2003 and replaced by a defined contribution plan.

Broadly, about 8% of the liabilities are attributable to current employees, 28% to former employees, and 64% to current pensioners.

The Fund functions and complies with UK legislation under a large regulatory framework. The Pensions Regulator has a risk-based approach to regulation and a code of practice which provides practical guidance to trustees and employers of defined benefit schemes on how to comply with the scheme funding requirements. In accordance with UK legislation, the Fund is subject to Scheme Specific Funding which requires that pension plans are funded prudently.

The Rhodia Pension Fund is governed by a Board of Trustees. They manage the Fund with prudent and fair judgment. The Trustees determine the liabilities used for Statutory Funding Objectives based on prudent actuarial and economic assumptions. Any shortfall or deficit once these liabilities have been deducted from the Fund's assets must be reduced by additional contributions and in a time frame that fits with the employer's ability to pay and the strength of covenant or contingent security being offered.

The Rhodia Pension Fund is subject to a triennial valuation cycle for funding purposes. This valuation is performed by the scheme actuary in line with UK regulations and is discussed between the Trustees and the sponsoring employer to agree the valuation assumptions and a funding plan. The last completed valuation was as at January 1, 2015 which established a fixed contribution rate of pensionable pay for active members plus a deficit recovery plan which aims to fund the scheme through technical

provisions over a period of time. Future contributions were kept at the same level as those agreed at the previous valuation, which required the recovery plan to be extended for another year.

France

Solvay sponsors various defined benefit plans in France. The largest plans are the French compulsory retirement indemnity plan and two closed and one open top hat plans.

The main plan is for all former Rhodia current and retired employees who contributed to the plan prior to its closure in the 1970s. It offers a full benefit guarantee based on the end-of-career salary. This plan is unfunded and approximately 96% of the liabilities are attributable to current pensioners.

In accordance with French legislation, adequate guarantees have been provided.

United States

As of year end 2017 Solvay sponsors six different defined benefit pension plans in the United States (three qualified plans and three non-qualified plans). A qualified plan is an employer-sponsored retirement plan that qualifies for special tax treatment under Section 401(a) of the Internal Revenue Code. At this moment all defined benefit plans are closed to new entrants; newly hired employees are eligible to participate in a defined contribution plan. Note that all three of the qualified defined benefit pension plans are funded while the three non-qualified defined benefit pension plans are unfunded. The qualified plans make up the vast majority of the pension liabilities as of December 31, 2017.

Solvay's plans are in compliance with local laws regarding audited financial statements, governmental filings, and Pension Benefit Guaranty Corporation insurance premiums where applicable. The plans are reviewed and monitored locally by fiduciary committees for purposes of plan investments and administrative matters.

For the US qualified plans, Solvay's contributions take into account minimum (tax-deductible) funding requirements and maximum tax deductible contributions, both regulated by the tax authorities.

Certain eligible participants may elect to receive their pension in a single lump sum payment instead of a monthly payment.

Broadly, about 27% of the liabilities are attributable to current employees, 9% to former employees for whom benefit payments have not yet commenced, and 64% to current pensioners.

In 2017, in the United States Solvay contributed to two multiemployer pension plans under collective bargaining agreements that cover certain of its union-represented employees. Each of the multiemployer plans is a defined benefit pension plan. None of the multiemployer plans provides an allocation of its assets, liabilities, or costs among contributing employers. None of the multiemployer plans provides sufficient information to permit Solvay, or other contributing employers, to account for the multiemployer plan as a defined benefit plan. Accordingly, the company accounts for its participation in each of the multiemployer plans as if they were a defined contribution plan. For multiemployer plans, during 2017 and 2016, the annual contributions paid are less than €1 million.

Germany

Solvay sponsors various defined benefit plans in Germany. The largest plans are a closed final-pay plan and an open cash balance plan. As is common in Germany, all plans are unfunded. Broadly, about 61% of the liabilities are attributable to current pensioners.

Belgium

Solvay sponsors two defined benefit plans in Belgium. These are funded pension plans. The plan for executives has been closed since the end of 2006, and the plan for the white and blue collars has been closed since 2004. The past service benefits provided under these plans continues to be adapted each year considering annual salary increase and inflation ("Dynamic

management"). In accordance with market practice in Belgium, because of favorable retirement lump-sum taxation most benefits are paid as lump sum.

Furthermore, Solvay sponsors two open defined contribution plans, classified as defined benefit plans for accounting purposes due to the minimum guarantees explained below. These are funded pension plans: the plan for executives opened at the beginning of 2007 and the plan for white and blue collars opened at the beginning of 2005. There are four different investment funds - ranging from "Prudent" to "Dynamic" - in which participants may choose to invest their contributions. However, regardless of their choices, Belgian law stipulates that the employer must guarantee a return on employer contribution and on personal contribution, thereby creating a potential liability for the Company. Since January 1, 2016 the return is set on an annual basis with a minimum of 1.75% and a maximum of 3.75%. Since 2016 the return has been fixed at 1.75% for both types of contributions. For these plans Solvay has €123 million of plan assets at December 31, 2017, and paid €9 million of contributions during 2017. At the end of 2017 net liability recognized in the consolidated statement of financial position concerning these plans is not material.

Solvay's plans are administered through two Solvay Pension Funds that operate in compliance with local laws regarding minimum funding, investments principles, audited financial statements, governmental filings, and governance principles. Pension Funds are managed through a General Assembly and a Board of Directors delegating day-to-day activities to an operational committee.

Solvay sponsors a few other smaller pension plans. All these plans are insured.

Other plans

The majority of the obligations relate to pension plans. In some countries (mainly the United States), there are also post-retirement medical plans, which represent 5% of the total defined benefit obligation.

B.3. Financial impacts

Changes in net liability

In € million	2017	2016
Net amount recognized at beginning of period	2,936	2,955
Net expense recognized in P&L – Defined benefit plans	93	135
Actual employer contributions/direct actual benefits paid	(203)	(181)
Acquisitions/disposals	7	
Remeasurements before impact of asset ceiling	(93)	290
Change in the effect of the asset ceiling limit on remeasurements	(2)	(16)
Reclassifications	(2)	1
Currency translation differences	(72)	(54)
Transfer from/to (liabilities associated with) assets held for sale	(43)	(195)
Net amount recognized at end of period	2,622	2,936

The decrease of the net liability of €314 million between 2016 and 2017 is mainly explained by the net effect of:

- a cash-out of €(203) million,
- a net expense in the consolidated income statement for €93 million,
- Remeasurements of €(93) million due to:
 - the return on plan assets (excluding interests recognized in the consolidated income statement) for €(206) million,
 - reduction in discount rates (€169 million) in the United States, the United Kingdom, and Brazil,
 - decrease in inflation rate (€(51) million) for the United Kingdom,
- the transfer of Polyamides to assets held for sale for €(43) million, and
- the currency translation differences for €(72) million.

Net expense

In € million	2017	2016
Service costs	20	39
Current service costs	51	49
Past service costs (including curtailments)	(31)	(10)
Net interest	62	80
Interest cost	154	194
Interest income	(93)	(114)
Administrative expenses paid	12	16
Net expense recognized in P&L – Defined benefit plans	93	135
Remeasurements recognized in other comprehensive income	(95)	275

The service costs and administrative expenses of these benefit plans are recognized within cost of sales, commercial and administrative costs, research & development costs, operating gains and losses and results from legacy remediation. The net interest is recognized as a finance expense.

In 2017 the Group's current service costs amounted to €51 million, of which €34 million relate to funded plans and €17 million relate to unfunded plans. Past service costs include favorable impacts reflecting the amendment of post-retirement healthcare and death benefit plan in the United States (€37 million).

In 2016 the Group's current service costs amounted to €49 million, of which €32 million related to funded plans and €17 million related to unfunded plans. Past service costs included favorable impacts reflecting the amendment of medical plan in Brazil (€9 million).

Net liability

In € million	2017	2016
Defined benefit obligations – Funded plans	3,402	3,650
Fair value of plan assets at end of period	(2,733)	(2,811)
Deficit for funded plans	669	839
Defined benefit obligations – Unfunded plans	1,947	2,089
Deficit/Surplus (-)	2,616	2,928
Amounts not recognized as asset due to asset ceiling (recognized in other comprehensive income)	6	8
Net liability (asset)	2,622	2,936
Provision recognized	2,635	2,949
Asset recognized	(14)	(13)

Changes in defined benefit obligations

In € million	2017	2016
Defined benefit obligation at beginning of period	5,739	5,871
Current service costs	51	49
Interest cost	154	194
Employee contributions	4	4
Past service costs (including curtailments)	(31)	(9)
Settlements	(14)	(139)
Acquisitions/disposals (-)	7	
Remeasurements in other comprehensive income	113	456
Actuarial gains and losses due to changes in demographic assumptions	(23)	(22)
Actuarial gains and losses due to changes in financial assumptions	106	460
Actuarial gains and losses due to experience	30	18
Actual benefits paid	(300)	(318)
Currency translation differences	(310)	(175)
Transfer from/to (liabilities associated with) assets held for sale	(64)	(195)
Defined benefit obligation at end of period	5,349	5,739
Defined benefit obligations – Funded plans	3,402	3,650
Defined benefit obligations – Unfunded plans	1,947	2,089

In 2017, the classification of Polyamides as held for sale resulted in a decrease of the defined benefit obligation by €64 million.

In 2016 the classification as held for sale of Acetow activities led to a decrease of defined benefit obligations of €190 million.

Changes in the fair value of plan assets

In € million	2017	2016
Fair value of plan assets at beginning of period	2,811	2,940
Interest income	93	114
Remeasurements in other comprehensive income	206	166
Return on plan assets (excluding amounts in net interests)	206	166
Employer contributions	203	181
Employee contributions	4	4
Administrative expenses paid	(12)	(16)
Settlements	(14)	(138)
Actual benefits paid	(300)	(318)
Currency translation differences	(238)	(121)
Reclassification and other movements	2	(1)
Transfer from/to (liabilities associated with) assets held for sale	(21)	
Fair value of plan assets at end of period	2,733	2,811
Actual return on plan assets	299	280

In 2017 the total return on plan assets amounts to €299 million, against €280 million in 2016.

The Group's cash contributions (including direct benefit payments) amounted to €203 million, of which €108 million of contributions to funds, and €95 million of direct benefits payments.

The Group's cash contributions (including direct benefit payments) for 2016 amounted to €181 million, of which €79 million of contributions to funds and €102 million of direct benefits payments.

Except for significant changes in the regulatory environment (see "regulatory risk" above), the Group's cash contributions in 2018 are expected to approximate €214 million. This increase is due to additional contributions in the United States and the United Kingdom.

Categories of plan assets

	20	17	20	16
	Quoted	Non quoted	Quoted	Non quoted
Equity	40%	0%	38%	0%
Bonds				
Investment Grade	50%	0%	57%	0%
Non Investment Grade	6%	0%	1%	0%
Properties	1%	0%	1%	0%
Cash and cash equivalents	2%	0%	3%	0%
Derivatives				
Structured debt (LDI)	1%	0%	0%	0%
Other derivatives	1%	0%	0%	0%
Total	100%	0%	100%	0%

With respect to the invested assets, it should be noted that these assets do not contain any direct investment in Solvay Group shares or in property or other assets occupied or used by Solvay. This does not exclude Solvay shares being included in mutual investment fund type investments.

Changes in assets ceiling

In € million	2017	2016
Effect of the asset ceiling limit at beginning of year	8	24
Change in the effect of the asset ceiling limit on remeasurements	(2)	(16)
Effect of the asset ceiling limit at end of year	6	8

The changes in asset ceiling recognized through OCI amount to €(2) million as against €(16) million in 2016. These impacts concern the plans of Brazil.

Actuarial assumptions used in determining the liability

These assumptions are not related to a specific segment.

	Eurozone		United	United Kingdom		United States	
In %	2017	2016	2017	2016	2017	2016	
Discount rates	1.50	1.50	2.50	2.75	3.50	4.00	
Expected rates of future salary increases	1,75 – 4,00	1,75 – 4,00	2,15 - 3,25	2,40 - 3,50	3,00 – 3,75	3,00 – 3,75	
Inflation	1,50 – 1,75	1,50 – 2,00	3.25	3.50	2.25	2.25	
Expected rates of pension growth	0,00 - 1,75	0,00 - 1,75	3.05	3.50	N/A	N/A	
Expected rates of medical care cost							
increases	1.75	1.75	5.40	5.40	4,50 - 7,00	4,50 - 7,00	

Actuarial assumptions used in determining the annual cost

These assumptions are not related to a specific segment.

	Eurozone		United Kingdom		United States	
In %	2017	2016	2017	2016	2017	2016
Discount rates	1.50	2.25	2.75	3.75	4.00	4.25
Expected rates of future salary increases	1,75 – 4,00	1,75 – 4,00	2,40 - 3,50	2,15 - 3,25	3,00 – 3,75	3,00 – 3,75
Inflation	1,50 – 2,00	1.75	3.50	3.25	2.25	2.25
Expected rates of pension growth	0,00 - 1,75	0,00 - 1,75	3.30	3.25	N/A	N/A
Expected rates of medical care cost						
increases	1.75	1.75	5.40	5.40	4,50 - 7,00	4,50 - 7,00

Actuarial assumptions regarding future mortality are based on recent country-specific mortality tables. These assumptions translate at December 31, 2017 into an average remaining life expectancy in years for a pensioner retiring at age 65:

In years	United Kingdom	United States	Belgium	France	Germany
Retiring at the end of	the reporting period				
Male	21	20	18	24	20
Female	23	22	21	28	24
Retiring 20 years afte	r the end of the reporting period	1			
Male	22	21	18	27	22
Female	25	23	21	31	26

In some countries such as United Kingdom and United States, the mortality assumptions reflect actual scheme experience and/or Solvay's expectations in terms of future mortality improvements.

The actuarial assumptions used in determining the benefit obligation at December 31 are based on the following employee benefit liability durations:

	Eurozone	United Kingdom	United States
Duration in years	12.4	16.9	10.5

Sensitivities

Sensitivity to a change of percentage in the discount rates on the defined benefits obligation is as follows:

In € million	0.25% increase	0.25% decrease
Eurozone	(63)	66
United Kingdom	(65)	68
United States	(34)	35
Others	(6)	6
Total	(168)	175

Sensitivity to a change of percentage in the inflation rates on the defined benefits obligation is as follows:

In € million	0.25% increase	0.25% decrease
Eurozone	60	(58)
United Kingdom	45	(44)
United States		
Others	5	(5)
Total	110	(107)

Sensitivity to a change of percentage in salary growth rate on the defined benefits obligation is as follows:

In € million	0.25% increase	0.25% decrease
Eurozone	19	(18)
United Kingdom	3	(3)
United States	1	(1)
Others	1	(1)
Total	24	(23)

Sensitivity to a change of one year on mortality tables on the defined benefits obligation is as follows:

	Age correction +1	Age correction -1
In € million	year	year
Eurozone	(84)	86
United Kingdom	(62)	62
United States	(29)	30
Others	(7)	7
Total	(182)	185

F31.B. Provisions other than for employee benefits

Accounting policy

General

Provisions are recognized when (a) the Group has a present obligation (legal or constructive) as a result of a past event, (b) it is probable that the Group will be required to settle the obligation, and (c) a reliable estimate can be made of the amount of the obligation.

The amount recognized as a provision is the best estimate of the consideration required to settle the present obligation at the end of the reporting period, taking into account the risks and uncertainties surrounding the obligation. Where the effect of the time value of money is material, the amount is the present value of expenditures required to settle the obligation. Impacts of changes in discount rates are generally recognized in the financial result.

When some or all of the economic benefits required to settle a provision are expected to be recovered from a third party, a receivable is recognized as an asset if it is virtually certain that reimbursement will be received if the Group settles the obligation.

Onerous contracts

An onerous contract is a contract in which the unavoidable costs of meeting the obligations under the contract exceed the economic benefits expected to be received under it. Present obligations arising from onerous contracts are recognized and measured as provisions.

Restructurings

A restructuring provision is recognized when the Group has developed a detailed formal plan for the restructuring and has, by starting to implement the plan or announcing its main features to those affected by it, raised a valid expectation in those affected that it will carry out the restructuring. The measurement of a restructuring provision includes only the direct expenditures arising from the restructuring, which are those amounts that are both necessarily entailed by the restructuring and not associated with the ongoing activities of the entity.

Environmental liabilities

Solvay analyzes twice a year all its environmental risks and the corresponding provisions. Solvay measures these provisions to the best of its knowledge of applicable regulations, the nature and extent of the pollution, clean-up techniques, and other available information.

Restructuring provisions

These provisions amount to €62 million, as against €99 million at the end of 2016.

The main provisions at the end of 2017 relate to:

- The shutdown of business activities (€28 million) and the reorganization of Corporate Functions (€26 million), both following the Group portfolio review, and
- Cytec integration (€8 million).

Environmental provisions

These provisions amount to €702 million at the end of 2017, as against €737 million at the end of 2016, and pertain to:

- mines and drilling operations to the extent that legislation and/ or operating permits in relation to quarries, mines, and drilling operations contain requirements to pay compensation to third parties. Most of these provisions, based on local expert advice, can be expected to be used over a 1-20 year horizon and amount to €139 million,
- the dismantling of the last mercury electrolysis activities, which should be completed by the end of 2019. The remaining provisions related to those activities will be used for contamination of soil and for groundwater management, mostly over the next 20 years,
- lime dikes (settling ponds related mainly to soda ash plant), dump at sites and third party dump sites (linked to several industrial activities). These provisions have a horizon of 1 to 20 years, and
- various types of pollution (organic, inorganic) coming from miscellaneous chemical productions; these provisions mainly cover discontinued activities or closed plants. Most of these provisions have a horizon of 1 to 20 years.

The estimated amounts are discounted based on the probable date of settlement, and are adjusted periodically to reflect the passage of time.

Provisions for litigation

Provisions for litigation refer to tax and legal exposures. They amount to €129 million at the end of 2017 as against €167 million at the end of 2016. The balance at the end of 2017 relates to tax risks (€58 million) and legal claims (€72 million).

Other provisions

Other provisions relate to the shutdown or disposal of activities and amount to €180 million, as against €148 million at the end of 2016. The increase is mainly related to provision for post-closing warranties related to the disposal of the Pharma business. Other movements (€(20) million) relate to M&A post-closing adjustments.

NOTE F32 Financial instruments and financial risk management

Accounting policy

Financial assets

Financial assets include available-for-sale securities, loans and receivables, and derivative financial instruments. All financial assets are recognized and derecognized on trade date where the purchase or sale of a financial asset is under a contract whose terms require delivery of the financial asset within the time frame established by the market concerned, and are initially measured at fair value plus transaction costs, except for financial assets classified as at fair value through profit or loss, which are initially measured at fair value.

A financial asset is classified as current when the cash flows expected to flow from the instrument mature within one year.

At initial recognition, Solvay classifies financial assets into one of the four categories provided for in IAS 39 Financial Instruments: Recognition and Measurement. This classification determines the method for measuring financial assets at subsequent reporting dates: amortized cost or fair value.

Amortized cost is the amount at which the financial asset is measured at initial recognition minus principal repayments, plus or minus the cumulative amortization using the effective interest method of any difference between that initial amount and the maturity amount, minus any reduction for impairment or uncollectibility. The effective interest method is a method of calculating the amortized cost of a debt instrument and of allocating interest income over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash receipts (including all fees on points paid or received that form an integral part of the effective interest rate, transaction costs, and other premiums or discounts) through the expected life of the debt instrument or, when appropriate, a shorter period, to the net carrying amount on initial recognition.

Income is recognized on an effective interest basis for debt instruments other than those financial assets classified as at fair value through profit or loss.

For instruments quoted in an active market, the fair value corresponds to a market price (level 1). For instruments that are not guoted in an active market, the fair value is determined using valuation techniques including reference to recent arm's length market transactions or transactions involving instruments which are substantially the same (level 2), or discounted cash flow analysis including, to the greatest possible extent, assumptions consistent with observable market data (level 3). However, if the fair value of an equity instrument that does not have a quoted price in an active market cannot be reliably estimated, it is measured at cost.

Financial assets at fair value through profit or loss

Financial assets are measured at fair value with any resulting gains or losses recognized in profit or loss if they are held for trading. A financial asset is classified in this category if acquired principally for the purpose of selling in the short term. Derivatives are also classified as held for trading. In this case, resulting gains and losses are recognized in profit or loss unless they are designated and effective as hedging instruments in a cash flow hedge.

Available-for-sale financial assets

Available-for-sale financial assets include equity investments in entities, which were not acquired principally for the purpose of selling in the short term, and which are not subsidiaries, joint operations, joint ventures, or associates. Assets classified in this category are measured at fair value, with any resulting gains or losses recognized in other comprehensive income. If there is objective evidence that the asset is impaired, any cumulative loss that had been recognized in other comprehensive income is reclassified from equity to profit or loss.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments which are not quoted in an active market. The Group's loans and receivables category comprises cash and cash equivalents, trade receivables, and other non-current receivables except pension fund surpluses. Cash equivalents are short-term, highly liquid investments that are readily convertible to known amounts of cash, have original maturities of three months or less from the date of acquisition, and are subject to insignificant risk of change in value. Loans and receivables are measured at amortized cost using the effective interest method, less any impairment.

Impairment of financial assets

The impairment loss of a financial asset measured at amortized cost equals the difference between the carrying amount and the estimated future cash flows, discounted at the initial effective interest rate. The impairment of an available-for-sale financial asset is calculated with reference to its current fair value.

An impairment test is performed, on an individual basis, for each material financial asset. Other assets are tested as groups of financial assets with similar credit risk characteristics.

Impairment losses are recognized in the consolidated income statement.

The impairment loss is reversed if the reversal can be objectively related to an event occurring after the impairment was recognized. For financial assets measured at amortized cost, the reversal is recognized in profit or loss. After reversal, the carrying amount of the financial asset measured at amortized cost shall not exceed what the amortized cost would have been, had the impairment not been recognized. Impairment losses with respect to an equity instrument classified as available for sale are not reversed through profit or loss. Impairment losses with respect to debt instruments classified as available for sale are reversed through profit or loss to the extent of the impairment loss previously recognized in profit or loss. Impairment losses relating to assets measured at cost cannot be reversed.

Financial liabilities

Financial liabilities are classified as either "financial liabilities at fair value through profit or loss" or "financial liabilities measured at amortized cost".

Financial liabilities at fair value through profit or loss

Financial liabilities are measured at fair value with any resulting gains or losses recognized in profit or loss if they are held for trading. A financial liability is classified in this category if acquired principally for the purpose of selling in the short term. Derivatives are also classified as held for trading. In this case, resulting gains and losses are recognized in profit or loss unless they are designated and effective as hedging instruments in a cash flow hedge.

Financial liabilities measured at amortized cost using the effective interest method

Financial liabilities measured at amortized cost, including borrowings, are initially measured at fair value, net of transaction costs. They are subsequently measured at amortized cost using the effective interest method, with interest expense recognized on an effective yield basis.

The effective interest method is a method of calculating the amortized cost of a financial liability and of allocating interest expense over the relevant period. The effective interest rate is the rate that exactly discounts estimated future cash payments through the expected life of the financial liability, or, where appropriate, a shorter period, to the net carrying amount on initial recognition.

The Group's financial liabilities measured at amortized cost comprise long-term financial debt, other current and non-current liabilities, short-term financial debt, trade liabilities and dividends payable.

Derivative financial instruments

Derivative financial instruments are financial instruments with all three of the following characteristics:

- their value changes in response to the change in a specified interest rate, financial instrument price, commodity price, foreign exchange rate, index of prices or rates, credit rating or credit index, etc,
- they require no initial net investment or an initial net investment that is smaller than would be required for other types of contracts that would be expected to have a similar response to changes in market factors, and
- they are settled at a future date.

The Group enters into a variety of derivative financial instruments (forward, future, option, and swap contracts) to manage its exposure to interest rate risk, foreign exchange rate risk, and commodity risk (mainly energy and CO₂ emission rights price risks)

Derivatives are initially recognized at fair value at the date a derivative contract is entered into and are subsequently remeasured to their fair value at the end of each reporting period. The resulting gain or loss is recognized in income or expense, unless the derivative is designated and effective as a hedging instrument. The Group designates certain derivatives as hedging instruments of the exposure to variability in cash flows with respect to a recognized asset or liability or a highly probable forecast transaction (cash flow hedges).

A derivative with a positive fair value is recognized as a financial asset whereas a derivative with a negative fair value is recognized as a financial liability. Derivative instruments (or portions of them) are presented as non-current assets or non-current liabilities if the remaining maturity of the underlying settlements is more than twelve months after the reporting period. Other derivative instruments (or portions of them) are presented as current assets or current liabilities.

Hedge accounting

The Group designates certain derivatives and embedded derivatives, in respect of foreign currency risk, interest rate risk, energy price risk, and CO₂ emission rights price risk, as hedging instruments in a cash flow hedge relationship.

At the inception of the hedge relationship, the entity documents the relationship between the hedging instrument and the hedged item, along with its risk management objectives and its strategy for undertaking the hedge transaction. Furthermore, at the inception of the hedge and on an ongoing basis, the Group documents whether the hedging instrument is highly effective in offsetting changes in cash flows of the hedged item.

Cash flow hedges

The effective portion of changes in the fair value of hedging instruments that are designated in a cash flow hedge is recognized in other comprehensive income. The gain or loss relating to the ineffective portion is recognized immediately in profit or loss.

Amounts previously recognized in other comprehensive income are reclassified to profit or loss in the periods when the hedged item is recognized in profit or loss, in the same line of the consolidated income statement as the recognized hedged item. When the hedged forecast transaction results in the recognition of a non-financial asset or a non-financial liability, the gains and losses previously recognized in other comprehensive income are transferred from other comprehensive income and included in the initial measurement of the cost of the non-financial asset or non-financial liability.

Hedge accounting is discontinued when the Group revokes the hedging relationship, the hedging instrument expires or is sold, terminated, or exercised, or no longer qualifies for hedge accounting. Any gain or loss accumulated in other comprehensive income at that time remains in other comprehensive income and will affect profit or loss as described in the paragraph above. When a forecast transaction is no longer expected to occur, the gain or loss accumulated in other comprehensive income is recognized immediately in profit or loss as a reclassification adjustment. If all or a portion of a loss recognized in other comprehensive income will not be recovered in one or more future periods, the amount that is not expected to be recovered is immediately reclassified into profit or loss.

The following table presents the financial instruments by category, split into current and non-current assets and liabilities.

		2017	2016
In € million	Classification	Carrying amount	Carrying amount
Non-current assets – Financial instruments	Cidssification	376	343
Available for sale financial assets	Available-for-sale	44	44
Loans and other non-current assets (except pension fund surpluses)	Loans and receivables	332	299
Current assets - Financial instruments	Edulis and receivables	2.695	2.878
Trade receivables	Loans and receivables	1,462	1.621
Other financial instrument receivables		89	101
Other marketable securities >3 months	Loans and receivables	56	32
Currency swaps	Held for trading	4	12
Other current financial assets	Loans and receivables	28	57
Financial instruments – Operational		153	188
Held for trading	Held for trading	130	160
Derivative financial instruments designated in cash flow hedge relationship	Cash-flow hedge	23	28
Cash and cash equivalents	Loans and receivables	992	969
Total assets – Financial instruments		3,071	3,221
Non-current liabilities – Financial instruments		3,362	4.301
Financial debt	•	3,362	4,301
Subordinated loans and bonds	Fin liabilities measured at amortized cost	2.856	3.837
Other non current debts	Fin liabilities measured at amortized cost	2,830	200
Long-term finance lease obligations	Fin lease liabilities measured at amortized cost	44	50
Other liabilities	Fin liabilities measured at amortized cost	180	214
Current liabilities – Financial instruments		2,652	3,221
Financial debt		1,044	1,338
Short-term financial debt (excl finance lease obligations)	Fin liabilities measured at amortized cost	1,015	1,277
Currency swaps	Held for trading	27	59
Short-term finance lease obligations	Fin lease liabilities measured at amortized cost	2	2
Trade payables	Fin liabilities measured at amortized cost	1,330	1,547
Financial Instruments – Operational		130	195
Held for trading	Held for trading	123	160
Derivative financial instruments designated in cash flow hedge relationship	Cash-flow hedge	7	35
Dividends payables		147	139
Total liabilities – Financial instruments		6,014	7,522

F32.A. Overview of financial instruments

The following table gives an overview of the carrying amount of all financial instruments by category as defined by IAS 39 *Financial Instruments: Recognition and Measurement.*

	2017	2016
In € million	Carrying	Carrying amount
Fair value through profit or loss		
Held for trading	134	172
Derivative financial instruments designated in a cash flow hedge relationship	23	28
Loans and receivables (including cash and cash equivalents, trade receivables, loans and other current/non- current assets except pension fund surpluses)	2,870	2,977
Available for sale financial assets	44	44
Total financial assets	3,071	3,221
Fair value through profit or loss		
Held for trading	(151)	(220)
Derivative financial instruments designated in a cash flow hedge relationship	(7)	(35)
Financial liabilities measured at amortized cost (including long-term financial debt, other non-current liabilities, short-term financial debt and trade liabilities)	(5,663)	(7,075)
Dividends payable	(147)	(139)
Finance lease obligations measured at amortized cost	(46)	(52)
Total financial liabilities	(6,014)	(7,521)

The category "Held for trading" contains only derivative financial instruments that are used for management of foreign currency risk, interest rate risk, energy and CO₂ emission rights price risks, and the Solvay share price, but which are not documented as hedging instruments (hedge accounting under IAS 39). Available-for-sale financial assets pertain to Solvay's New Business Development (NBD) activity: the Group has built a Corporate

Venturing portfolio which is made up of direct investments in start-up companies and of investments in venture capital funds. The available-for-sale financial assets are measured at fair value according to the valuation guidelines published by the European Private Equity and Venture Capital Association.

F32.B. Fair value of financial instruments Valuation techniques and assumptions used for measuring fair value

Accounting policy

Quoted market prices are available for financial assets and financial liabilities with standard terms and conditions that are traded on active markets. The fair values of derivative financial instruments are equal to their quoted prices, if available. If such quoted prices are not available, the fair value of the financial instruments is determined based on a discounted cash flow analysis using the applicable yield curve derived from quoted interest rates matching maturities of the contracts for nonoptional derivatives. Optional derivatives are measured at fair value based on option pricing models, taking into account the present value of probability-weighted expected future payoffs, using market reference formulas.

The fair values of other financial assets and financial liabilities are determined in accordance with generally accepted pricing models based on discounted cash flow analysis.

Fair value of financial instruments measured at amortized cost

	201	17	20	16	
In € million	Carrying amount	Fair value	Carrying amount	Fair value	Fair value level
Non-current assets – Financial instruments	332	332	299	299	
Loans and other non- current assets (except pension fund surpluses)	332	332	299	299	2
Non-current liabilities – Financial instruments	(3,362)	(3,550)	(4,301)	(4,504)	
Subordinated loans and bonds	(2,856)	(3,044)	(3,837)	(4,040)	1
Other non current debts	(282)	(282)	(200)	(200)	2
Other liabilities	(180)	(180)	(214)	(214)	2
Long-term finance lease obligations	(44)	(44)	(50)	(50)	2

The carrying amounts of current financial assets and liabilities are estimated to reasonably approximate their fair values, such in light of short terms to maturity.

Financial instruments measured at fair value in the consolidated statement of financial position

The table "Financial instruments measured at fair value in the consolidated statement of financial position" provides an analysis of financial instruments that, subsequent to their initial recognition, are measured at fair value, grouped in Levels 1 to 3 based on the degree to which the fair value is observable. Financial instruments classified as held for trading and as hedging instruments in cash flow hedges are generally grouped in Levels 1 and 2. They are measured at fair value based on forward pricing and swap models using present value

calculations. The models incorporate various inputs including foreign exchange spot and interests rates of the respective currencies, currency basis spreads between the respective currencies, interest rate curves, and forward rate curves of the underlying commodity. The available-for-sale financial assets fall within Level 3, and are measured on the basis of a discounted cash flow approach.

In accordance with the Group internal rules, the responsibility for measuring the fair value level resides with (a) the Treasury department for the non-energy derivative financial instruments, and the financial liabilities, (b) Energy Services business unit for the energy derivative financial instruments and (c) the Finance department for non-derivative financial assets.

Financial instruments measured at fair value in the consolidated statement of financial position

		20	17	
In € million	Level 1	Level 2	Level 3	Total
Held for trading	39	95		134
Foreign currency risk		5		5
Energy risk	31	81		112
CO ₂ risk	8	1		9
Solvay share price		8		8
Cash flow hedges	1	22		23
Foreign currency risk		17		17
Energy risk		3		3
CO ₂ risk	1			1
Solvay share price		3		3
Available for sale financial assets			44	44
New Business Development			44	44
Total (assets)	40	118	44	201
Held for trading	(22)	(128)		(151)
Foreign currency risk		(24)		(24)
Interest rate risk		(5)		(5)
Energy risk	(21)	(96)		(117)
CO ₂ risk	(2)	(1)		(3)
Solvay share price		(1)		(1)
Cash flow hedges		(6)		(7)
Foreign currency risk		(2)		(2)
Interest rate risk		(1)		(1)
Energy risk		(4)		(4)
Total (liabilities)	(23)	(135)		(158)

		2016		
In € million	Level 1	Level 2	Level 3	Total
Held for trading	59	112	2	172
Foreign currency risk		14		14
Energy risk	51	94	2	147
CO ₂ risk	8	1		9
Solvay share price		2		2
Cash flow hedges	1	26		28
Foreign currency risk		11		11
Energy risk		9		9
CO ₂ risk	1			1
Solvay share price		6		6
Available for sale financial assets			44	44
New Business Development			44	44
Total (assets)	61	138	46	244
Held for trading	(49)	(169)	(1)	(220)
Foreign currency risk		(61)		(61)
Energy risk	(47)	(100)	(1)	(148)
CO ₂ risk	(3)	(7)		(10)
Cash flow hedges	(4)	(31)		(35)
Foreign currency risk	· .	(26)		(26)
Interest rate risk		(1)		(1)
Energy risk		(3)		(3)
CO ₂ risk	(4)			(4)
Solvay share price		(1)		(1)
Total (liabilities)	(54)	(200)	(1)	(255)

Movements during the period

Reconciliation of level 3 fair value measurements of financial assets and liabilities

	2017			
	At fair value through profit or loss	Available-for-sale		
In € million	Derivatives	Shares	Total	
Opening balance at January 1	1	44	45	
Total gains or losses				
Recognized in the income statement	(1)	(3)	(4)	
Recognized in other comprehensive income		(2)	(2)	
Acquisitions		9	9	
Disposals		(4)	(4)	
Closing balance at December 31		44	44	

	2016				
	At fair value through profit or loss	Available-for-sale			
In € million	Derivatives	Shares	Total		
Opening balance at January 1	244	34	277		
Total gains or losses					
Recognized in the income statement	1		1		
Recognized in other comprehensive income		10	10		
Acquisitions		6	6		
Disposals	(244)	(6)	(250)		
Closing balance at December 31	1	44	45		

Income and expenses of financial instruments recognized in the consolidated income statement and in other comprehensive income

In € million	2017	2016
Recognized in the income statement		
Recycling from OCI of derivative financial instruments designated in cash flow hedge relationship		
Foreign currency risk	19	(27)
Energy risk	7	(3)
CO ₂ risk	(1)	(3)
Changes in the fair value of financial instruments held for trading		
Energy risk	6	(6)
CO ₂ risk	1	(6)
Recognized in the gross margin	32	(45)
Recycling from OCI of derivative financial instruments designated in cash flow hedge relationship		
Solvay share price	2	
Changes in the fair value of financial instruments held for trading		
Solvay share price	4	5
Ineffective portion of gains and losses on derivative financial instruments designated in a cash flow hedge relationship		
Foreign currency risk	4	4
Foreign operating exchange gains and losses	(9)	2
Recognized in other operating gains and losses		12
Recycling from OCI of derivative financial instruments designated in cash flow hedge relationship		
Foreign currency risk	2	
Recognized in results from portfolio management and reassessments	2	
Net interest expense	(157)	(175)
Other gains and losses on net indebtedness (excluding gains and losses on items not related to financial instruments)		
Foreign currency risk	(6)	(2)
Interest element of swaps	(20)	(48)
Others	(13)	5
Recognized in charges on net indebtedness	(196)	(220)
Income/loss from available-for-sale financial assets		5
Total recognized in the income statement	(162)	(249)

The foreign currency gain recognized in the gross margin of €19 million is the result of the recycling of gains and losses of derivative financial instruments designated in a cash flow hedge relationship. Their purpose was to offset a portion of the foreign exchange differences on sales. The main currencies hedged by the Group are US dollar, Japanese yen, Brazilian real, and Chinese renminbi.

Income and expenses on financial instruments recognized in other comprehensive income include the following:

In € million	2017	2016
Net change in the fair value of available for sale financial assets	(1)	9
Total available for sale financial assets	(1)	9
Recycling from OCI of derivative financial instruments designated in cash flow hedge relationship		
Foreign currency risk	(26)	26
Energy risk	(7)	3
CO ₂ risk	1	3
Solvay share price	(2)	
Effective portion of changes in fair value of cash flow hedge		
Foreign currency risk	47	(15)
Energy risk	(1)	
CO ₂ risk	3	8
Solvay share price	(1)	10
Total cash flow hedges	15	36
Total	15	45

The recycling from OCI (foreign currency risk) of €(26) million is explained by the result of the recycling of gains of derivative financial instruments designated in a cash flow hedge relationship (€19 million on highly probable sales, €2 million on M&A proceeds, and €5 million on other hedge relationships).

F32.C. Capital management

See the item 2.1 Policy in respect of capital in the Corporate governance statement section of this report.

F32.D. Financial risk management

The Group is exposed to market risks from movements in foreign exchange rates, interest rates, and other market prices (energy prices, CO_2 emission rights prices, and equity prices). The Group uses derivative financial instruments to hedge clearly identified foreign exchange, interest rate, energy price, and CO_2 emission rights price risks (hedging instruments). However, the required criteria to apply hedge accounting are not met in all cases.

Furthermore, the Group is exposed to liquidity risks and credit risks.

The Group does not enter into or trade financial instruments (including derivative financial instruments) for speculative purposes.

Foreign currency risks

The Group is a multi-specialty chemical company which operates in 58 countries and undertakes transactions denominated in foreign currencies. As a consequence, the Group is exposed to

exchange rate fluctuations. In 2017, the Group was exposed mainly to US dollar, Chinese renminbi, Thai baht, Brazilian real, Russian ruble, Japanese yen and Korean won.

To mitigate its foreign currency risk, the Group has defined a hedging policy that is based essentially on the principles of financing its activities in local currency and hedges the transactional exchange risk at the time of invoicing (risk which is certain). The Group constantly monitors its activities in foreign currencies and hedges, where appropriate, the exchange rate exposures on expected cash flows.

Exchange rate exposures are managed within approved policy parameters utilizing forward foreign exchange contracts or other derivatives like currency options.

EBITDA sensitivity to the US dollar is about €120 million per (0.10) US\$/€ fluctuation, of which 2/3 on conversion and 1/3 on transaction, the latter being mostly hedged. Net debt sensitivity to US dollar is approximately €140 million per (0.10) US\$/€ fluctuation.

The Group's currency risk can be split into two categories: translation and transactional risk.

In the course of 2017 the EUR/USD exchange rate moved from 1.0538 at the start of January to 1.1995 at the end of December. In the course of 2016 the EUR/USD exchange rate moved from 1.0887 at the start of January to 1.0538 at the end of December.

Translation risk

The translation exchange risk is the risk affecting the Group's consolidated financial statements relating to investees operating in a currency other than the EUR (the Group's presentation currency).

During 2017 and 2016, the Group did not hedge the currency risk of foreign operations.

Transactional risk

The transactional risk is the exchange risk linked to a specific transaction, such as a Group company buying or selling in a currency other than its functional currency.

To the largest extent possible, the Group manages the transactional risk on receivables and borrowings centrally; it is managed locally when centralization is not possible.

The choice of borrowing currency depends mainly on the opportunities offered by the various markets. This means that the selected currency is not necessarily that of the country in which the funds will be invested. Nonetheless, operating entities are financed essentially in their functional currencies.

In emerging countries it is not always possible to borrow in local currency, either because funds are not available in local financial markets, or because the financial conditions are too onerous. In such a situation the Group has to borrow in a different currency. Nevertheless, the Group considers opportunities to refinance its borrowings in emerging countries with local currency debt.

Derivatives are initially recognized at fair value at the date a derivative contract is entered into and are classified into the two categories described below:

Held for trading

The transactional risk is managed either by spot or forward contracts. Unless documented as hedging instruments (see above), those contracts are classified as held for trading.

In comparison to 2016, the trading position decreased by €1 billion in 2017 mainly due to of the optimization of our subsidiaries' capital structure, resulting in rationalization of swap needs

Cash flow hedge

The Group uses derivatives to hedge identified foreign exchange rate risks. It documents those as hedging instruments unless it hedges a recognized financial asset or liability when generally no cash flow hedge relationship is documented.

At the end of 2017 for future exposure, the Group had mainly hedged forecast sales (short position) in a nominal amount of US\$559 million (€475 million) and JP¥13,381 million (€104 million). All cash flow hedges that exist at the end of December 2017 will be settled within the next 12 months, and will impact profit or loss during that period.

The following table details the notional amounts of the Group's derivatives contracts outstanding at the end of the period:

Notional amounts net(1)

	Notional	amount ⁽¹⁾	Fair valu	ie assets	Fair value	e liabilites
In € million	2017	2016	2017	2016	2017	2016
Held for trading	(129)	(1,179)	5	14	(24)	(61)
Cash flow hedges	(579)	(472)	17	11	(2)	(26)
Total	(708)	(1,651)	22	25	(26)	(88)

(1) Long/(short) positions.

Interest rate risks

See the Financial risk in the Management of risks section of this report for additional information on the interest rate risk management.

Interest rate risk is managed at Group level.

The Group is exposed to interest rate risk because entities in the Group borrow funds at both fixed and floating interest rates. Interest rate risk is managed at Group level by maintaining an appropriate mix between fixed and floating rate borrowings.

Interest rate exposure by currency is summarized below (note that financial debts for which floating interest rates are hedged by interest rate swaps and cross-currency interest rate swaps are presented under fixed rate financial debt):

In € million	At	December 31, 20	17	At I	December 31, 2016	
Currency	Fixed rate	Floating rate	Total	Fixed rate	Floating rate	Total
Financial debt						
EUR	(2,122)	(106)	(2,228)	(1,857)	(1,006)	(2,863)
USD	(1,649)	(24)	(1,673)	(2,227)	(30)	(2,257)
SAR	(116)	(17)	(133)			
THB	(16)	(18)	(34)	(34)	(25)	(59)
BRL	(20)	(1)	(21)	(70)	(4)	(75)
CNY	(98)		(98)	(104)	(4)	(109)
Other	(2)	(37)	(39)	(14)	(49)	(63)
Total	(4,024)	(202)	(4,226)	(4,307)	(1,119)	(5,426)
Cash and cash equivalents						
EUR		237	237		180	180
USD		352	352		476	476
CAD		100	100			
THB		34	34		14	14
SAR		16	16			
BRL		67	67		89	89
CNY		54	54		39	39
KRW		23	23		61	61
JPY		33	33		35	35
Other		77	77		75	75
Total		992	992		969	969
Other financial instrument receivables						
EUR		26	26		55	55
Other		63	63		45	45
Total		89	89		101	101
Total	(4,024)	878	(3,146)	(4,307)	(49)	(4,356)

At the end of 2017, around €4.0 billion of the Group's gross debt was at fixed-rate, including mainly:

- Remaining part of the EMTN bond issuance of €500 million maturing in 2018 (carrying amount of €381 million),
- Senior EUR Notes for a total of €1,250 million maturing in 2022 and 2027 (carrying amount of €1,246 million),
- Remaining part of the Senior Bonds 2023 of US\$400 million (carrying amount of €156 million),
- Remaining part of the Senior Bonds 2025 of US\$250 million (carrying amount of €134 million),
- Senior US\$ Notes for a total of US\$1,600 million (carrying amount of €1,328 million), and
- Belgian Treasury notes for a total of €400 million maturing within the year (carrying amount of €400 million).

The decrease in the floating rate debt was due mainly to the repayment of the €1 billion senior notes maturing in 2017 (Euribor plus 82 bps of margin)

The impact of interest rate volatility at the end of 2017 in comparison with 2016 is as follows:

	*	bp movement in EUR erest rates		bp movement in EUR erest rates
In € million	2017	2016	2017	2016
Profit or loss	(1)	(10)	1	10

The volatility on interest rates decreased at the end of 2017 compared to 2016. This is the result of the floating rate notes €1 billion repaid during 2017. The remaining floating rate debt is very limited and part of it is hedged by interest rate swaps and cross-currency interest rate swaps, reducing its volatility even more.

	Notiona	l amount	Fair valu	ue assets	Fair value liabilites		
In € million	2017	2016	2017	2016	2017	2016	
Held for trading	122				(6)		
Cash flow hedge	16	21			(1)	(1)	
Total	138	21			(6)	(1)	

The fair value of €(6) million reported under "held for trading" is explained mainly by a cross currency swap contracted in May 2017 to mitigate the volatility (forex and interest rate) of the external financing set up for the HPPO joint operation (Saudi Hydrogen Peroxide Company) 50/50 with Sadara in the Kingdom of Saudi Arabia (notional amount €117 million at 50%).

The fair value of €(1) million reported under "cash flow hedge" is explained by an interest rate swap structured in 2012, transacted by the joint operation (MTP HP JV) 50/50 between Dow and Solvay in Thailand and designated in a hedge relationship (notional amount €16 million at the end of 2017 at 50%).

Other market risks

Energy price risks

The Group purchases a large portion of its coal, gas, and electricity needs in Europe and the United States, based on fluctuating liquid market indices. In order to reduce the cost volatility, the Group has developed a policy for exchanging variable price for fixed price through derivative financial instruments. Most of these hedging instruments can be documented as hedging instruments of the underlying purchase contracts. Purchases of physical energy at fixed price contracts that qualify as "own use" contracts (not derivatives) constitute a

natural hedge, and are not included in this note. Similarly the Group's exposure to the $\rm CO_2$ price is hedged partly by forward purchases of European Union Allowance (EUA), which either can be documented as hedging instruments, or qualify as own use contracts.

Finally some exposure to gas-electricity or coal-electricity spreads may arise from the production of electricity on Solvay sites (mostly from cogeneration units in Europe), which can be hedged by forward purchases and forward sales or optional schemes. In this case, cash flow hedge accounting is applied.

Energy Services

Financial hedging of energy and CO₂ emission rights price risks is managed centrally by Energy Services on behalf of the Group entities.

Energy Services also carries out trading transactions with respect to energy and CO_{2} , for which the residual price exposure is maintained close to zero.

The following tables detail the notional principal amounts and fair values of energy and ${\rm CO_2}$ derivative financial instruments outstanding at the end of the reporting period:

	Notional	amount	Fair valu	ie assets	Fair value liabilites		
In € million	2017	2016	2017	2016	2017	2016	
Held for trading	920	672	121	156	(120)	(158)	
Cash flow hedge	104	110	4	11	(5)	(8)	
Total	1,024	782	124	167	(124)	(166)	

Credit risk

See the Financial risk in the Management of risks section of this report for additional information on the credit risk management.

There is no significant concentration of credit risk at Group level to the extent that the receivables risk is spread over a large number of customers and markets.

The ageing of trade receivables, financial instruments - operational, loans, and other non-current assets is as follows:

			of which receivables without allowance						
2017 In € million	Total	Net of allowance	Not past due	less than 30 days past due	between 30 & 60 days past due	Between 60 & 90 days past due	more than 90 days past due		
Trade receivables	1,462	51	1,246	135	16	3	10		
Financial instruments – operational	153		153						
Loans and other non-current assets	346	78	266	3					
Total	1,961	129	1,665	138	16	3	10		

			of which receivables without allowance						
				less than	between	Between	more than		
2016		Net of	Not	30 days	30 & 60 days	60 & 90 days	90 days		
In € million	Total	allowance	past due	past due	past due	past due	past due		
Trade receivables	1,621	61	1,454	82	11	4	9		
Financial instruments – operational	188		188						
Loans and other non-current assets	312	88	222	2					
Total	2,120	149	1,864	84	11	4	9		

The table below presents the allowances on trade receivables:

In € million	2017	2016
Carrying amount at January 1	(53)	(75)
Additions	(13)	(14)
Used	5	13
Reversal of impairments	10	11
Currency translation differences	3	(4)
Transfer to assets held for sale	(2)	12
Other	1	5
Carrying amount at December 31	(49)	(53)

Liquidity risk

See the Financial risk in the Management of risks section of this report for additional information on the liquidity risk management.

Liquidity risk relates to the Group's ability to service and refinance its debt (including notes issued) and to fund its operations.

This depends on its ability to generate cash from operations and not to over-pay for acquisitions.

The Finance Committee gives its opinion on the appropriate liquidity risk management for the Group's short, medium and long term funding and liquidity management requirements.

The Group manages liquidity risk by maintaining adequate reserves, banking facilities, and reserve borrowing facilities, by continuously monitoring forecast and actual cash flows, and by matching the maturity profiles of financial assets and liabilities.

The Group staggers the maturities of its financing sources over time in order to limit the amounts to be refinanced each year.

The following tables detail the Group's remaining contractual maturity for its financial liabilities with contractual repayment periods.

The tables have been prepared using the discounted cash flows of financial liabilities, based on the earliest date on which the Group can be required to pay.

2017					
In € million	Total	Within one year	In year two	In years three to five	Beyond five years
Outflows of cash:					
Trade liabilities	1,330	1,330			
Dividends payables	147	147			
Financial instruments – operational	130	130			
Other non-current liabilities	180		124	39	17
Current financial debt	1,044	1,044			
Non current financial debt	3,182		94	1,592	1,497
Total	6,014	2,652	218	1,631	1,514
2016 In € million	Total	Within one year	In year two	In years three to five	Reyond five years
In € million	Total	Within one year	In year two	In years three to five	Beyond five years
	Total		In year two	In years three to five	Beyond five years
In € million Outflows of cash: Trade liabilities		1,547 139	In year two	In years three to five	Beyond five years
In € million Outflows of cash:	1,547	1,547	In year two	In years three to five	Beyond five years
In € million Outflows of cash: Trade liabilities Dividends payables Financial instruments –	1,547 139	1,547 139	In year two	In years three to five	Beyond five years
Outflows of cash: Trade liabilities Dividends payables Financial instruments – operational Other non-current	1,547 139 195	1,547 139			
In € million Outflows of cash: Trade liabilities Dividends payables Financial instruments – operational Other non-current liabilities	1,547 139 195 214	1,547 139 195			

The following table presents undiscounted amounts (nominal value):

Total outflows of cash	6,736	2,773	323	1,890	1,750
Interests on non current financial debt ⁽¹⁾	691	121	104	250	216
Total	6,045	2,652	218	1,641	1,534
Non current financial debt	3,213		94	1,602	1,517
Current financial debt	1,044	1,044			
Other non-current liabilities	180		124	39	17
Financial instruments – operational	130	130			
Dividends payables	147	147			
Trade liabilities	1,330	1,330			
Outflows of cash:					
2017 In € million	Total	Within one year	In year two	In years three to five	Beyond five years

⁽¹⁾ and on short term portion of the non current financial debt.

The Group has access to the following instruments:

- an amount of €400 million was issued from the Belgian Treasury Bill program (out of €1 billion). This program was unused at the end of 2016. The US commercial paper program in an amount of US\$500 million was unused at the end of 2017 as well as the end of 2016. The two programs are covered by back-up credit lines:
- A €2 billion syndicated credit facility maturing in 2022 (with extension options to 2024), as well as bilateral credit lines (~€ 994 million) maturing beyond one year. They were all unused at the end of 2017.

NOTE F33 Net indebtedness

The Group's net indebtedness is the balance between its financial debts and other financial instruments receivables, and cash and cash equivalents.

In € million	2017	2016
Financial debts	4,226	5,426
Other financial instrument receivables	(89)	(101)
Cash and cash equivalents	(992)	(969)
Net indebtedness	3,146	4,356

The decrease in the net indebtedness is due to the strong cash generation and the cashing-in of proceeds from divestments (Acetow and Vinythai).

During 2017 the two leading rating agencies reviewed the Group's Investment Grade status, with a Baa2/P2 rating (stable outlook) by Moody's and a BBB/A2 rating (stable outlook) by Standard & Poor's.

Financial debt: main borrowings

		2017		7	201	5		
In € million (except where indicated)	Nominal amount	Coupon	Maturity	Secured	Amount at amortized cost	Fair value	Amount at amortized cost	Fair value
(except where maleated)	arriodric	Furibor	Widtarity	Secured	COSC	Tun value	COSC	Tail value
Floating rate € notes		3m+82 bps	2017	No			998	1,005
Senior US\$ note Cytec Industries Inc (issuance US\$ 82.2 million)		8.95%	2017	No			81	80
EMTN € bond (issuance € 500 million)	382	4.625%	2018	No	381	391	496	535
Senior US\$ notes (144A;US\$ 800 million)	667	3.40%	2020	No	665	681	756	774
Senior € notes	750	1.625%	2022	No	743	788	742	786
Senior US\$ note Cytec Industries Inc (issuance US\$ 400 million)	163	3.5%	2023	No	156	167	362	369
Senior US\$ note Cytec Industries Inc (issuance US\$ 250 m)	136	3.95%	2025	No	134	140	233	232
Senior US\$ notes (144A;US\$ 800 million)	667	4.45%	2025	No	663	708	755	785
Senior € notes	500	2.75%	2027	No	495	560	495	559
Total					3,237	3,435	4,916	5,126

Some of the above-mentioned borrowings were partially repaid in 2017 (see below).

There are no instances of default on the above-mentioned financial debts. There are no financial covenants, either on Solvay SA, or on any of the Group's holding companies.

Other financial instrument receivables

In € million	2017	2016
Currency swaps	4	12
Other marketable securities > 3 months	56	32
Other current financial assets	28	57
Other financial instrument receivables	89	101

The "Other financial instruments receivables" amount to €89 million at the end of 2017 compared to €101 million at the end of 2016. They include currency swaps, other marketable securities > 3 months (bank drafts), and other current financial assets (mainly margin calls of Solvay Energy Services).

Cash and cash equivalents

In € million	2017	2016
Cash	835	773
Term deposits	157	195
Others		2
Cash and cash equivalents	992	969

By their nature, the carrying amount of cash and cash equivalents is equal or very close to their fair values.

Changes in financial debt and in other financial instrument receivables arising from financing activities

	2016				2017				
In € million	Total	Cash flows from increase of borrowings	Cash flows from repayment of borrowings	rates	Changes in other current financial assets	Other in financing cash flows	Transfer from non- current to current	Other	Total
Non-current financial debt	4,087	183	(296)	(257)			(527)	(8)	3,182
Subordinated loans and bonds	3,837		(257)	(241)			(500)	18	2,856
Other non current debts	200	183	(39)	(11)			(27)	(24)	282
Long-term finance lease obligations	50			(5)				(1)	44
Current financial debt	1,338	1,509	(2,288)	(1)		(14)	527	(27)	1,044
Short-term financial debt (excluding finance lease obligations)	1,277	1,509	(2,288)			(14)	527	4	1,015
Currency swaps	59			(1)				(31)	27
Short-term finance lease obligations	2								2
Total financial debt	5,425	1,692	(2,584)	(258)		(14)		(35)	4,226
Currency swaps	(12)							8	(4)
Other marketable securities >3 months	(32)			3	(27)				(56)
Other current financial assets	(57)					31		(2)	(28)
Other financial instrument receivables	(101)			3	(27)	31		6	(89)
Total cash flow		1,692	(2,584)		(27)	17			

In 2017, the financial debt decreased from €5,425 million at the end of 2016 to €4,226 million at the end of 2017.

The net decrease in non-current financial debt from €4,087 million in 2016 to €3,182 million in 2017 is explained mainly by:

- the partial early repayments of US\$204 million of Senior Notes 2023 (out of US\$400 million) and of US\$87 million of Senior Notes 2025 (out of US\$250 million) of Cytec Industries (total € equivalent of €257 million),
- the transfer to current financial debt of €500 million (EMTN maturity 2018),
- the changes in foreign exchange rates (€258 million) generated mainly by the US\$1,600 million Senior Notes and Senior US\$ notes Cytec Industries Inc (US\$348 million), and
- an increase of external financing (reported under other noncurrent debts) set up for our HPPO joint operation (Saudi Hydrogen Peroxide Co) 50/50 with Sadara in the Kingdom of Saudi Arabia (€134 million).

The net decrease in current financial debt from €1,338 million in 2016 to €1,044 million in 2017 is explained mainly by:

- The repayment of the Senior notes of US\$82 million maturing in July 2017 (total € equivalent of €75 million),
- The repayment of the Solvay Floating Rate Notes of €1 billion maturing early December 2017,
- The transfer from non-current financial debt of €500 million (EMTN maturity 2018), of which €118 million was repaid prematurely during 2017, and
- The issuances of commercial paper for a net amount of €400 million. The amounts presented in the cash flow statement under "increase in borrowings" and "repayment of borrowings" include the issuance of €1,460 million and the repayment of €1,060 million in 2017.

The €17 million in "Other in financing cash flows" relates to the repayment of margin calls in connection with Solvay Energy Services activities. The cash out for the Rhodia liquidity convention (€(4) million) is not presented as other financial liabilities and explains the difference with the €13 million in the line "Other" in the cash flow from financing activities in the consolidated statement of cash flows.

NOTE F34 Other liabilities (current)

In € million	2	017	2016
Wages and benefits debts		361	378
VAT and other taxes		130	151
Social security		61	67
Financial instruments – operational		130	195
M&A related liabilities		21	124
Insurance premiums		13	12
Advances from customers		34	29
Other		98	130
Other current liabilities		848	1,086

NOTE F35 Share-based payments



Accounting policy

Solvay has set up compensation plans, including equity-settled and cash-settled share-based compensation plans.

In its equity-settled plans, the Group receives services as consideration for its own equity instruments (namely through the issuance of share options). The fair value of services rendered by employees in consideration of the granting of equity instruments

represents an expense. This expense is recognized on a straightline basis in the consolidated income statement over the vesting periods relating to these equity instruments with the recognition of a corresponding adjustment in equity. The fair value of services rendered is measured based on the fair value of the equity instruments on the grant date. It is not subsequently remeasured. At each reporting date, the Group re-estimates the number of share options likely to vest. The impact of the revised estimates is recognized in profit or loss against a corresponding adjustment in equity.

In its cash-settled plans, the Group acquires services by incurring a liability to transfer to its employees rendering those services amounts that are based on the price (or value) of equity instruments (including shares or share options) of the Group. The fair value of services rendered by employees in consideration of the granting of share-based payments represents an expense. This expense is recognized on a straightline basis in the consolidated income statement over the vesting periods relating to these share-based payments with the recognition of a corresponding adjustment in liabilities. At each reporting date, the Group re-estimates the number of options likely to vest, with the impact of the revised estimates recognized in profit or loss. The Group measures the services acquired and the liability incurred at the fair value of the liability. Until the liability is settled, the Group remeasures the fair value of the liability at the end of each reporting period and at the date of settlement, with any changes in fair value recognized in profit or loss for the period.

Stock Option Plan

As every year since 1999, in 2017 the Board of Directors renewed the share option plan offered to executive staff (54 beneficiaries) with a view to involving them more closely in the long-term development of the Group. The plan is an equity-settled share-based plan. The majority of the managers involved subscribed to the options offered to them in 2017 with an exercise price of €111.27 representing the average stock market price of the share for the 30 days prior to the offer. The three-year vesting period is followed by a five-year exercise period, at the end of which any unexercised options expire. The settlement method is in equity.

At the end of December 2017, the Group held 2,557,895 treasury shares, which have been deducted from consolidated shareholders' equity.

Share options	2017	2016	2015	2014	2013	2012	2011	2010	2009	2007	2006	2005
Number of share options granted and still outstanding at December 31, 2016		759,023	346,617	380,151	427,943	741,325	139,485	133,514	134,332	86,111	95,761	68,522
Granted share options	316,935											
Forfeitures of rights and expiries									(7,292)			
Share options exercised				(1,645)	(56,782)	(284,976)	(48,321)	(51,089)	(127,040)	(16,989)	(28,338)	(21,461)
Number of share options at December 31, 2017	316,935	759,023	346,617	378,506	371,161	456,349	91,164	82,425		69,122	67,423	47,061
Share options exercisable at December 31, 2017				378,506	371,161	456,349	91,164	82,425		69,122	67,423	47,061
Exercise price (in €)	111.27	75.98	114.51	101.14	104.33	83.37	61.76	71.89	67.99	90.97	102.53	91.45
Fair value of options at measurement date (in €)	23.57	17.07	24.52	22.79	20.04	21.17	12.73	14.64	18.66	17.56	19.92	10.77

	201	17	2016		
	Number of share options	Weighted average exercise price	Number of share options	Weighted average exercise price	
At January 1	3,312,784	93.30	2,753,270	96.45	
Granted during the year	316,935	111.27	759,023	75.98	
Forfeitures of rights and expiries during the year	(7,292)	67.99	(19,907)	85.51	
Exercised during the year	(635,577)	80.97	(179,602)	69.30	
At December 31	2,986,850	97.90	3,312,784	93.30	
Exercisable at December 31	1,563,211		1,399,050		

The share options resulted in a charge in 2017 of €10 million calculated by third parties according to the Black-Scholes model and recognized in the consolidated income statement under commercial and administrative costs.

The value of the option 2017 is based on:

- the price of the underlying asset (Solvay share): €115.20 at February 23, 2017,
- the time outstanding until the option maturity: exercisable from January 1, 2021 until February 23, 2025, taking into account the fact that some of them will be exercised before the option maturity,

- the option exercise price: €111.27,
- the risk-free return: 0.26% (on average),
- the volatility of the underlying yield, inferred from option price: 24.26%, and
- a dividend yield of 2.07%.

Weighted average remaining contractual life:

In years	2017	2016
Share option plan 2005	1.0	2.0
Share option plan 2006	2.0	3.0
Share option plan 2007	3.0	4.0
Share option plan 2009	0.0	0.9
Share option plan 2010	1.0	2.0
Share option plan 2011	1.9	3.0
Share option plan 2012	2.1	3.1
Share option plan 2013	3.2	4.2
Share option plan 2014	4.2	5.2
Share option plan 2015	5.2	6.2
Share option plan 2016	6.2	7.2
Share option plan 2017	7.2	

Performance Share Units Plan (PSU)

Since 2013, the Board of Directors renewed a yearly Performance Share Unit Plan, offered to executive staff with the objective of involving them more closely in the development of the Group, making this part of the long-term incentive policy. All the managers involved subscribed the PSU offered them in 2017 with a grant price of €114.70. The Performance Share Units Plan is

a cash-settled share-based plan through which beneficiaries will obtain cash benefit based upon the Solvay share price, as well performance conditions.

Each plan has a three-year vesting period, after which a cash settlement will take place, if vesting conditions are met.

Performance share units	Plan 2017	Plan 2016
Number of PSU	232,256	348,990
Grant date	02/23/2017	02/24/2016
Acquisition date	01/01/2020	01/01/2019
Vesting period	03/31/2017 to 12/31/2019	03/31/2016 to 12/31/2018
	40% of the initial granted PSU are subject to the Underlying EBITDA YoY growth % over 3 years (2017, 2018, 2019)	50% of the initial granted PSU are subject to the Underlying EBITDA YoY growth % over 3 years (2016, 2017, 2018)
Performance conditions	40% of the initial granted PSU are subject to the CFROI YoY % variation over 3 years (2017, 2018, 2019)	50% of the initial granted PSU are subject to the CFROI YoY % variation over 3 years (2016, 2017, 2018)
	20% of the initial granted PSU are subject to the GHG Intensity reduction target at the end of the accounting period ending 31 December 2019	
Validation of performance conditions	By the Board of Directors	By the Board of Directors

In 2017 the impact on the consolidated income statement regarding PSU (net of hedging) amounts to €21 million, as against €32 million in 2016. The carrying amount of the PSU liability at the end of 2017 amounts to €58 million, as against €62 million at the end of 2016.

Miscellaneous Notes

NOTE F36

Commitments to acquire property, plant, and equipment, and intangible assets

In € million	2017	2016
Commitments for the acquisition of property, plant and equipment and intangible assets	90	70

The amount relates mainly to commitments for the acquisition of property, plant, and equipment.

NOTE F37 Contingent liabilities



Accounting policy

A contingent liability is:

• a possible obligation that arises from past events and whose existence will be confirmed only by the occurrence or nonoccurrence of one or more uncertain future events not wholly within the control of the entity, or

- a present obligation that arises from past events but is not recognized because:
 - it is not probable that an outflow of resources embodying economic benefits will be required to settle the obligation,
 - the amount of the obligation cannot be measured with sufficient reliability.

Contingent liabilities are not recognized in the consolidated financial statements, except if they arise from a business combination. They are disclosed unless the possibility of an outflow of economic benefits is remote.

In € million	2017	2016
Liabilities and commitments of third parties guaranteed by the Company	706	792
Environmental contingent liabilities	317	307
Litigation and other major commitments	1	16
Total	1,024	1,115

The liabilities and commitments of third parties guaranteed by the Company relate mainly to guarantees given in the framework of:

- RusVinyl, the joint venture with SIBUR for the construction and operation of a PVC plant in Russia. A guarantee of €133 million at December 31, 2017 (€152 million at the end of 2016) has been provided on a several basis by each sponsor, SolVin/ Solvay and Sibur, for the benefit of the lenders and which corresponds for each to 50% of the amount in principal of RusVinyl project finance plus interests and costs, and
- VAT payment (€195 million at December 31, 2017, €295 million at December 31, 2016).

Within the framework of the annual review of contingent liabilities, environmental contingent liabilities for a total amount of €317 million have been identified at December 31, 2017 (€307 million at December 31, 2016).

NOTE F38 Dividends proposed for distribution

The Board of Directors will propose to the General Shareholders' Meeting a gross dividend of €3.60 per share.

Taking into account the dividend advance payment distributed in January 2018 of €1.38 per share, the dividends proposed for distribution, but not yet recognized as a distribution to equity holders amount to €235 million.

NOTE F39

Associates and joint ventures

The associates and joint ventures not classified as held for sale/discontinued operations are accounted for under the equity method of accounting.

	2017			2016		
In € million	Associates	Joint ventures	Total	Associates	loint ventures	Total
III € ITIIIIIOIT	ASSOCIATES	ventures	Total	ASSUCIALES	Joint ventures	TULai
Investments in associates and joint						
ventures	23	443	466	24	473	497
Earnings from associates and joint						
ventures	3	41	44	2	83	85

The tables below present the summary of the statement of financial position and income statement of the material associates and joint ventures as if they were proportionately consolidated.

Associates

In € million	2017	2016
Statement of financial position		
Non-current assets	22	25
Current assets	17	37
Cash and cash equivalents	5	6
Non-current liabilities	3	8
Non current financial debt	2	5
Current liabilities	14	31
Current financial debt	4	6
Investments in associates	23	24
Income statement		
Sales	34	93
Depreciation and amortization	(1)	(2)
Interest on lendings and short term deposits	1	
Income taxes		(1)
Profit (loss) for the year from continuing operations	2	3
Profit (loss) for the year	2	3
Total comprehensive income	1	3
Dividends received	1	2

Joint ventures

				20)17			
In € million	RusVinyl 000	Peroxidos do Brasil Ltda	Solvay & CPC Barium Strontium	Shandong Huatai Interox Chemical Co. Ltd	Hindustan Gum & Chemicals Ltd	EECO Holding and subsidiaries	Cogeneration Rosignano	Other
Ownership interest	50.0%	69.4%	75.0%	50.0%	50.0%	33.3%	25.4%	
Operating Segment	Performance Chemicals	Performance Chemicals	Advanced Materials	Performance Chemicals	Advanced Formulations	Corporate & Business Services	Corporate & Business Services	
Statement of financial	•				_	-		
Non-current assets	423	43	11	8	7	15	9	
Current assets	45	48	42	4	154	16	3	
Cash and cash equivalents	13	27	8	2	137	4		
Non-current liabilities	226	6	12		4	10		
Long-term financial debt	197	4				10		
Current liabilities	55	20	13	4	9	18	7	
Short-term financial debt	38	4				17	7	
Investments in joint ventures	186	65	28	8	148	3	4	
Income statement								
Sales	171	75	75	11	42	5		
Depreciation and amortization	(25)	(3)	(1)	(1)	(1)	(1)		
Cost of borrowings	(21)					(1)		
Interest on lendings and short term deposits		2			10			
Income taxes	(1)	(8)	(3)		(3)			
Profit (loss) for the year from continuing operations	4	19	9	1	7			2
Profit (loss) for the year	4	19	9	1	7			2
Other comprehensive income	(15)	(11)	(1)	(1)	(9)			
Total comprehensive income	(10)	8	8		(2)			2
Dividends received		9	6	(1)	1			

Other comprehensive income comprises mainly the currency translation differences.

			20	16		
In € million	RusVinyl OOO	Peroxidos do Brasil Ltda	Solvay & CPC Barium Strontium	Shandong Huatai Interox Chemical Co. Ltd	Hindustan Gum & Chemicals Ltd	Other
Ownership interest	50.0%	69.4%	75.0%	50.0%	50.0%	
Operating Segment	Performance Chemicals	Performance Chemicals	Advanced Materials	Performance Chemicals	Advanced Formulations	
Statement of financial position						
Non-current assets	476	38	12	10	8	17
Current assets	42	61	39	2	157	44
Cash and cash equivalents	11	36	5		147	8
Non-current liabilities	252	7	12		1	11
Long-term financial debt	224	4				10
Current liabilities	71	27	13	3	11	27
Short-term financial debt	47	8				15
Investments in joint ventures	197	66	26	9	153	23
Income statement						
Sales	153	70	68	11	20	51
Depreciation and amortization	(22)	(3)	(1)	(1)	(1)	(1)
Reversal of impairment	19					
Cost of borrowings	(23)					(1)
Interest on lendings and short term deposits		3			9	1
Income taxes	(12)	(9)	(2)		(3)	(1)
Profit (loss) for the year from continuing operations	49	19	8		7	1
Profit (loss) for the year	49	19	8		7	1
Other comprehensive income	36	13	(2)		1	4
Total comprehensive income	85	32	6		8	5
Dividends received		11	6	1	1	1

Other comprehensive income comprises mainly the currency translation differences.

NOTE F40 Joint operations

The list of joint operations is available in the note F44 *List of companies included in the consolidation scope*.

- Soda Ash & Derivatives operations/interests in Devnya (Bulgaria), 75% held by Solvay and comprising the following legal entities:
 - Solvay Sodi AD,
 - Solvay Sisecam Holding AG.

- Hydrogen Peroxide Propylene Oxide (HPPO) operations/ interests in Zandvliet (Belgium), Map Ta Phut (Thailand), and the HPPO plant in the Kingdom of Saudi Arabia, all 50% held by Solvay and comprising the following legal entities:
 - BASF Interox H₂O₂ Production NV,
 - MTP HPJV C.V.,
 - MTP HPJV Management B.V.,
 - MTP HPJV (Thailand) Ltd.,
 - Saudi Hydrogen Peroxide Co.
- Interests in Butachimie (France), 50% held by Solvay, included in Polyamides discontinued operations.

NOTE F41

Non-controlling interests (continuing operations)

The following subsidiaries, other than those classified as held for sale have material non-controlling interests.

The amounts disclosed below are fully consolidated amounts and do not reflect the impacts from elimination of intragroup transactions.

	2017						
In € million	Zhejiang Lansol	Solvay Special Chem Japan	Solvay Soda Ash				
Non controlling ownership interest	45%	33%	20%				
Statement of financial position							
Non-current assets	20	17	305				
Current assets	31	24	25				
Non-current liabilities	3	1	12				
Current liabilities	19	5	25				
Income statement							
Sales	44	64	361				
Profit (loss) for the year	5	8	166				
Other comprehensive income	(1)	(3)	22				
Total comprehensive income	4	6	188				
Dividends paid to non controlling interests		2	34				
Share of non controlling interest in the profit (loss) for the year	2	3	33				
Accumulated non controlling interest	13	12	59				
In € million	Zhejiang Lansol	2016 Solvay Special Chem Japan	Solvay Soda Ash				
Non controlling ownership interest	45%	33%	20%				
Statement of financial position	-570		2070				
Non-current assets	22	20	349				
Current assets			83				
Non-current liabilities			13				
Current liabilities	9		25				
Income statement							
Sales	35	74	357				
Profit (loss) for the year	4	9	174				
Other comprehensive income	(1)	1	(5)				
Total comprehensive income	3	10	169				
Dividends paid to non controlling interests		2	36				
	-	·					
Share of non controlling interest in the							
Profit (loss) for the year Accumulated non controlling interest	<u>2</u> 12	3 12	35 68				

NOTE F42 Related parties

Balances and transactions between Solvay SA and its subsidiaries, related parties of Solvay SA, have been eliminated on consolidation and are not disclosed in this note. Details of transactions between the Group and other related parties are disclosed below.

Sale and purchase transactions

	Sale of goods		Purchase of goods	
In € million	2017	2016	2017	2016
Associates	16	16	8	4
Joint ventures	33	71	19	46
Other related parties	10	12	57	67
Total	59	99	85	117

	Amounts owed by related parties		Amounts owed to related parties	
In € million	2017	2016	2017	2016
Associates	1	2		3
Joint ventures	1	3	3	2
Other related parties	15	19	15	17
Total	18	25	18	21

Loans to related parties

In € million	2017	2016
Loans to joint ventures	23	20
Loans to other related parties	2	5
Total	24	25

Compensation of key management personnel

Key management personnel comprise all members of the Board of Directors and members of the Executive Committee.

 $Amounts\ due\ in\ respect\ of\ the\ year\ (compensation)\ and\ obligations\ existing\ at\ the\ end\ of\ the\ year:$

In € million	2017	2016
Wages, charges and short-term benefits	3	3
Long-term benefits	11	11
Cash-settled share-based payments liability	5	5
Total	19	18

Expenses of the year:

In € million	2017	2016
Wages, charges and short-term benefits	8	8
Long-term benefits	2	1
Share-based payments expenses	4	5
Total	14	14

Excluding employer social charges and taxes

NOTE F43 Events after the reporting period

Accounting policy

Events after the reporting period which provide evidence of conditions that existed at the end of the reporting period (adjusting events) are recognized in the consolidated financial statements. Events indicative of conditions that arose after the reporting period are non-adjusting events and are disclosed in the notes if material.

On February 8, 2018, Solvay announced it has completed the sale of its US facility in Charleston, South Carolina, and the phosphorus derivatives-based products made at the plant to German specialty chemicals company Lanxess, for US\$ 68 million, leading to an estimated capital gain of US\$ 20 million.

NOTE F44 List of companies included in the consolidation scope

The Group consists of Solvay SA and a total of 363 investees.

Of these 363 investees, 199 are fully consolidated, 8 are proportionately consolidated, and 18 are accounted for under the equity method, whilst the other 138 do not meet the criteria of significance.

List of companies entering or leaving the Group

Companies entering the Group

Country	Company	Comments
BRAZIL	Fiopart Participacoes Servicos e Comercio de Fios Texteis e Industries pte	New company
FRANCE	Rhodia Acetow France S.A.S.	Meets the consolidation criteria
GERMANY	European Carbon Fiber GmbH	New company
ITALY	Cogeneration Rosignano S.r.l.	New company
MEXICO	Solvay Industrial S.de R.L. de C.V	Meets the consolidation criteria
SINGAPORE	Solvay Acetows Asia Pacific Pte. Ltd	Meets the consolidation criteria

Companies leaving the Group

Country	Company	Comments
BELGIUM	Advanced Biochemical Europe	Sold to AGC Asahi Glass
	Solvay Coordination Internationale des Crédits Commerciaux S.A.	Liquidated
BRAZIL	Cytec Comercio de Materiais Compostos E Produtos Quimicos do Brasil Ltda	Merged into Rhodia Poliamida e Especialidades Ltda
	Dacarto Benvic SA	Sold to the joint venture partners
	Fiopart Participacoes Servicos e Comercio de Fios Texteis e Industries pte	Sold to Blackstone
BULGARIA	Deven AD	Merged into Solvay Sodi AD
CAYMAN ISLANDS	Blair International Insurance (Cayman) Ltd	Liquidated
CHINA	Solvay Biochemical (Taixing) Co. Ltd	Sold to AGC Asahi Glass
FRANCE	Solvay Tavaux S.A.S.	Sold to Inovyn
	Gie Osiris	Sold to Blackstone
	Rhodia Acetow France S.A.S.	Sold to Blackstone
GERMANY	Solvay Acetow GmbH	Sold to Blackstone
	Warmeverbundkraftwerk Freiburg GmbH, Freiburg	Sold to Blackstone
JAPAN	Cytec Industries Japan LLC	Merged into Solvay Japan K.K.
LUXEMBOURG	C.I.I. Luxembourg Sarl	Merged into Cytec Luxembourg International Holdings Sarl
NETHERLANDS	Cytec Netherlands Holdings B.V.	Merged into Solvay Solutions Nederland B.V.
RUSSIA	Sertow OOO	Sold to Blackstone
UNITED KINGDOM	Solvay Chemicals Ltd	Liquidated
	Holmes Chapel Trading Ltd	No longer meets the consolidation criteria
SINGAPORE	Cytec Industries PTE Ltd	Merged into Solvay Specialty Chemicals Asia Pacific Pte
	Solvay Acetow Asia Pacific Pte. Ltd	Sold to Blackstone
	Vinythai Holding Pte Ltd.	Sold to AGC Asahi Glass
THAILAND	Advanced Biochemical (Thailand) Company Ltd	Sold to AGC Asahi Glass
	Vinythai Public Company Ltd.	Sold to AGC Asahi Glass
SPAIN	Solvay Energy Services Iberica, S.L.	Liquidated
UNITED STATES	Cytec Olean Inc.	Sold to Elantas
	Primester	Sold to Blackstone
VENEZUELA	Rhodia Silices de Venezuela C.A.	No longer meets the consolidation criteria
VIETNAM	Rhodia Nuoc Trong Biogas LLC	Sold to Nuoc Trong Tapioca Joint Stock Company

List of subsidiaries

Indicating the percentage holding

The percentage of voting rights is very close to the percentage holding.

Soloay Agrentina SA, Buenos Aires 100	ARGENTINA	
Solvay Ournica SA, Buenos Aires 100 AUSTRALIA Cyree Asia Pacific Holdings Pty Ltd, Baulkham Hills 100 Cyree Asia Pacific Holdings Pty Ltd, Baulkham Hills 100 Solvay Interior NP Ltd, Banismacolow 100 AUSTRALIA Carrieles Inchibit Wen 100 BELOWIN Carrieles Inchibit Wen 100 BELOWIN Carrieles Inchibit Wen 100 Carrieles Inchibit Men	Solvay Argentina SA, Buenos Aires	100
AUSTRAIA		100
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Solvay Speciality Polymers (Changshu) Co. Ltd, Changshu100Suzhou Interox Sem Co. Ltd, Suzhou100		55
Suzhou Interox Sem Co. Ltd, Suzhou 100	Solvay Silica Qingdao Co., Ltd, Qingdao	100
	Solvay Speciality Polymers (Changshu) Co. Ltd, Changshu	100
Zhuhai Solvay Specialty Chemicals Co Ltd, Zhuhai City 100	Suzhou Interox Sem Co. Ltd, Suzhou	100
	Zhuhai Solvay Specialty Chemicals Co Ltd, Zhuhai City	100

CHILE	
Cytec Chile Ltda, Santiago	100
EGYPT	
Solvay Alexandria Sodium Carbonate Co, Alexandria	100
Solvay Alexandria Trading LLC., Alexandria	100
FINLAND	
Solvay Chemicals Finland Oy, Voikkaa	100
FRANCE	
Cogénération Chalampe S.A.S., Puteaux	100
Cogénération Tavaux SAS, Paris	33.3
Cytec Process Materials Sarl, Toulouse	100
RHOD V S.N.C., Courbevoie	100
RHOD W S.N.C., Courbevoie	100
Rhodia Chimie S.A.S., Aubervilliers	100
Rhodia Energy GHG S.A.S., Puteaux	100
Rhodia Laboratoire du Futur S.A.S., Pessac	100
Rhodia Operations S.A.S., Aubervilliers	100
Rhodia Participations S.N.C., Courbevoie	100
Rhodianyl S.A.S., Saint-Fons	100
Solvay - Opérations - France S.A.S., Paris	100
Solvay - Fluorés - France S.A.S., Paris	100
Solvay Energie France S.A.S., Paris	100
Solvay Energy Services S.A.S., Puteaux	100
Solvay Finance France S.A., Paris	100
Solvay Finance S.A., Paris	100
Solvay France S.A., Courbevoie	100
Solvay Participations France S.A., Paris	100
Solvay Speciality Polymers France S.A.S., Paris	100
Solvin France S.A., Paris	100
GERMANY	
Cavity GmbH, Hannover	100
Cytec Engineered Materials GmbH, Oestringen	100
European Carbon Fiber GmbH, Kelheim	100
Horizon Immobilien AG, Hannover	100
Salzgewinnungsgesellschaft Westfalen GmbH & Co KG, Hannover	65
German limited partnership, which makes use of the exemptions offered by Section 264(b) of the German Comr	mercial Code, not to publish
their annual financial statements	
Solvay Chemicals GmbH, Hannover	100
Solvay Fluor GmbH, Hannover	100
Solvay Flux GmbH, Hannover	100
Solvay GmbH, Hannover	100
Solvay Infra Bad Hoenningen GmbH, Hannover	100
Solvay P&S GmbH, Freiburg	100
Solvay Specialty Polymers Germany GmbH, Hannover	100
Solvin GmbH & Co. KG - PVDC, Rheinberg	100
Solvin Holding GmbH, Hannover	100
INDIA	
Cytec India Specialty Chemicals & Materials Private Ltd, Nagpur	100
Rhodia Polymers & Specialties India Private Limited, Mumbai	100
Rhodia Specialty Chemicals India Private Limited, Mumbai	100
Solvay Specialities India Private Limited, Mumbai	100
Sunshield Chemicals Limited, Mumbai	62.4
INDONESIA	
PT. Cytec Indonesia, Jakarta	100
IRELAND	
Solvay Finance Ireland Unlimited, Dublin	100

ITALY	
Cytec Process Materials S.r.l., Mondovi	100
Solvay Chimica Italia S.p.A., Milano	100
Solvay Energy Services Italia S.r.I., Bollate	100
Solvay Solutions Italia S.p.A. , Milano	100
Solvay Specialty Polymers Italy S.p.A., Milano	100
JAPAN	100
Nippon Solvay KK, Tokyo	100
Solvay Japan KK, Tokyo	
Solvay Nicca Ltd, Tokyo	
	67
Solvay Special Chem Japan Ltd, Anan City	
Solvay Specialty Polymers Japan KK, Minato Ku-Tokyo	100
LATVIA	400
Solvay Business Services Latvia SIA, Riga	100
LUXEMBOURG	100
Cytec Luxembourg International Holdings S.a.r.I., Capellen	100
Solvay Chlorovinyls Holding S.a.r.I., Capellen	100
Solvay Finance (Luxembourg) S.A., Capellen	100
Solvay Hortensia S.A., Capellen	100
Solvay Luxembourg S.a.r.l., Capellen	100
MEXICO	
Cytec de Mexico S.A. de C.V., Jalisco	100
Solvay Industrial S.de R.L. de C.V., Mexico	100
Solvay Fluor Mexico S.A. de C.V., Ciudad Juarez	100
Solvay Mexicana S. de R.L. de C.V., Monterrey	100
NETHERLANDS	
Cytec Industries B.V., Vlaardingen	100
Cytec Industries Europe C.V., Vlaardingen	100
Onecarbon International B.V., Utrecht	100
Rhodia International Holdings B.V., Den Haag	100
Solvay Chemicals and Plastics Holding B.V., Linne-Herten	100
Solvay Chemie B.V., Linne-Herten	100
Solvay Solutions Nederland B.V., Klundert	100
Solvin Holding Nederland B.V., Linne-Herten	100
NEW ZEALAND	
Solvay New Zealand Ltd, Auckland	100_
PERU	
Cytec Peru S.A.C., Lima	100
POLAND	
Solvay Engineering Plastics Poland Sp z.o.o., Gorzow Wielkopolski	100
Solvay Advanced Silicas Poland Sp. z o.o.	100
PORTUGAL	
Solvay Business Services Portugal Unipessoal Lda, Carnaxide	100
Solvay Portugal - Produtos Quimicos S.A., Povoa	100
RUSSIA	
Solvay Vostok OOO, Moscow	100
SINGAPORE	
Rhodia Amines Chemicals Pte Ltd , Singapore	100
Solvay Fluor Holding (Asia-Pacific) Pte. Ltd., Singapore	100
Solvay Specialty Chemicals Asia Pacific Pte. Ltd., Singapore	100
SOUTH KOREA	
Cytec Korea Inc, Seoul	100

Solvay Chemicals Korea Co. Ltd, Seoul	100
Solvay Energy Services Korea Co. Ltd, Seoul	100
Solvay Korea Co. Ltd, Seoul	100
Solvay Silica Korea Co. Ltd, Incheon	100
Solvay Specialty Polymers Korea Company Ltd, Seoul	100
SPAIN	
Solvay Quimica S.L., Barcelona	100
Solvay Solutions Espana S.L., Madrid	
SWITZERLAND	
Solvay (Schweiz) AG, Bad Zurzach	100
Solvay Vinyls Holding AG, Bad Zurzach	100
THAILAND	
Solvay Asia Pacific Company Ltd, Bangkok	100
Solvay (Bangpoo) Specialty Chemicals Ltd, Bangkok	100
Solvay (Thailand) Ltd, Bangkok	100
Solvay Peroxythai Ltd, Bangkok	100
UNITED KINGDOM	
Advanced Composites Group Holdings Ltd, Heanor	100
Advanced Composites Group Investments Ltd, Heanor	100
Cytec Engineered Materials Ltd, Wrexham	100
Cytec Industrial Materials (Derby) Ltd, Heanor	100
Cytec Industrial Materials (Manchester) Ltd, Heanor	100
Cytec Industries UK Holdings Ltd, Wrexham	100
Cytec Industries UK Ltd, Wrexham	100
Cytec Med-Lab Ltd, Heanor	100
Cytec Process Materials (Keighley) Ltd, Keighley	100
McIntyre Group Ltd, Watford	100
Med-Lab International Ltd, Heanor	100
Rhodia Holdings Ltd, Watford	100
Rhodia International Holdings Ltd, Oldbury	100
Rhodia Limited, Watford	100
Rhodia Organique Fine Ltd, Watford	100
Rhodia Overseas Ltd, Watford	100
Rhodia Pharma Solutions Holdings Ltd, Cramlington	100
Rhodia Pharma Solutions Ltd, Cramlington	100
Rhodia Reorganisation, Watford	100
Solvay Interox Ltd, Warrington	100
Solvay Solutions UK Ltd, Watford	100
Solvay UK Holding Company Ltd, Warrington	100
Umeco Composites Ltd, Heanor	100
Umeco Ltd, Heanor	100
UNITED STATES	
Ausimont Industries, Inc., West Deptford, NJ	100
CEM Defense Materials LLC, Tempe, AZ	100
Cytec Aerospace Materials (ca) Inc., Princeton, NJ	100
Cytec Carbon Fibers LLC, Piedmont, SC	100
Cytec Engineered Materials Inc., Tempe, AZ	100
Cytec Global Holdings Inc., Princeton, NJ	100
Cytec Industrial Materials (ok) Inc., Tulsa, OK	100
Cytec Industries Inc, Princeton, NJ	100
Cytec Korea Inc., Princeton, NJ	100
Cytec Overseas Corp., Princeton, NJ	100
Cytec Process Materials (ca) Inc., Santa Fe Springs, CA	100
Cytec Technology Corp., Princeton, NJ	100
Garret Mountain Insurance Co., Burlington, VT	100
IMC Mining Chemicals LLC, Princeton, NJ	100
Netherlands Cytec GP Inc., Princeton, NJ	100
Rocky Mountain Coal Company, LLC, Houston, TX	100
Solvay America Holdings, Inc., Houston, TX	100
Solvay America Inc., Houston, TX	100

Solvay Biomass Energy LLC, Houston, TX	100
Solvay Chemicals, Inc., Houston, TX	100
Solvay Energy Holding LLC, Princeton, NJ	100
Solvay Finance (America) LLC, Houston, TX	100
Solvay Financial Services INC., Wilmington, DE	100
Solvay Fluorides, LLC., Houston, TX	100
Solvay Holding Inc., Princeton, NJ	100
Solvay India Holding Inc., Princeton, NJ	100
Solvay Soda Ash Expansion JV, Green River, WY	80
Solvay Soda Ash Joint Venture, Houston, TX	80
Solvay Specialty Polymers USA, LLC, Alpharetta, GA	100
Solvay USA Inc., Princeton, NJ	100
URUGUAY	
Alaver SA, Montevideo	100
Zamin Company SA, Montevideo	100

List of joint operations

AUSTRIA	
Solvay Sisecam Holding AG, Wien	75
BELGIUM	
BASF Interox H2O2 Production N.V., Brussels	50
BULGARIA	
Solvay Sodi AD, Devnya	73.5
FRANCE	
Butachimie S.N.C., Courbevoie	50
NETHERLANDS	
MTP HP JV C.V., Weesp	50
MTP HP JV Management bv, Weesp	50
SAUDI ARABIA	
Saudi Hydrogen Peroxide Co, Jubail	50
THAILAND	
MTP HP JV (Thailand) Ltd, Bangkok	50

List of companies consolidated by applying the equity method of accounting

Joint ventures

BELGIUM	
EECO Holding SA, Brussels	33.3
BRAZIL	
Peroxidos do Brasil Ltda, Sao Paulo	69.4
CHINA	
Shandong Huatai Interox Chemical Co. Ltd, Dongying	50
FRANCE	
Cogénération Belle Etoile SAS, Paris	33.3
GERMANY	
Solvay & CPC Barium Strontium GmbH & Co KG, Hannover	75
Solvay & CPC Barium Strontium International GmbH, Hannover	75
INDIA	
Hindustan Gum & Chemicals Ltd, New Delhi	50
ITALY	
Cogeneration Rosignano S.r.I., Rosignano	25.4
Cogeneration Spinetta S.p.a. , Bollate	33.3
MEXICO	
Solvay & CPC Barium Strontium Monterrey S. de R.L. de C.V., Monterrey	
Solvay & CPC Barium Strontium Reynosa S. de R.L. de C.V., Reynosa	75
RUSSIA	
Rusvinyl OOO, Moscow	50

Associates

CHINA	
Qingdao Hiwin Solvay Chemicals Co. Ltd, Qingdao	30
FRANCE	
GIE Chime Salindres, Salindres	50
INDONESIA	
Solvay Manyar P.T. , Gresik	50
MEXICO	
Silicatos y Derivados S.A. DE C.V., Tlalnepantla	20
POLAND	
Zaklad Energoeloctryczny Energo-Stil Sp. z o.o., Gorzow Wielkopolski	25
UNITED KINGDOM	
Penso Holdings Ltd, Coventry	20

3. SUMMARY OF FINANCIAL STATEMENTS OF SOLVAY SA

The annual financial statements of Solvay SA are presented in summary format below. In accordance with the Belgian Companies Code, the annual financial statements of Solvay SA, the management report, and the statutory auditor's report will be filed with the National Bank of Belgium.

These documents are also available free of charge on the internet or upon request from:

Solvay SA rue de Ransbeek 310 B – 1120 Brussels

The balance sheet of Solvay SA for the year 2017 presented below is based on a dividend repartition of €3.60 per share.

As at the end of 2017, Solvay SA still has one branch, Solvay SA Italia (Via Piave 6, 57013 Rosignano, Italy). Previously, Solvay SA had a second branch, Solvay SA French Branch (25, rue de Clichy,

75009 Paris, France) which was contributed in kind to the French subsidiary Solvay France SA with effect as from January 1, 2017. In addition, as from February 1, 2017, the financial statements of Solvay SA include all assets and liabilities transferred from the company Solvay CICC SA, the internal bank of the Group. Those two significant corporate changes explain the main variations of balance sheet captions.

The accounts of Solvay SA are prepared in accordance with Belgian generally accepted accounting principles.

The main activities of Solvay SA consist of holding and managing a number of participations in Group companies and of financing the Group from the bank and bond markets. In 2017, Solvay SA also launched a factoring activity without recourse. As a result, Solvay SA owns and manages Group's receivables from subsidiaries located in Europe and Asia. It also manages the research center at Neder-Over-Heembeek (Brussels, Belgium) and a very limited number of commercial activities not undertaken through subsidiaries.

Balance sheet of Solvay SA (summary)

In € million	2017	2016
ASSETS		
Fixed assets	12,996	18,255
Start-up expenses and intangible assets	176	94
Property, plant and equipment	50	51
Financial assets	12,770	18,110
Current assets	7,177	1,234
Inventories	1	4
Trade receivables	1,033	181
Other receivables	5,875	103
Short-term investments and cash equivalents	230	924
Accrued income and deferred charges	38	22
Total assets	20,173	19,489
SHAREHOLDERS' EQUITY AND LIABILITIES		
Shareholders' equity	11,077	10,726
Capital	1,588	1,588
Issue premiums	1,200	1,200
Reserves	1,982	1,982
Net income carried forward	6,307	5,955
Provisions and deferred taxes	254	369
Financial debt	3,248	7,662
due in more than one year	2,450	4,252
due within one year	798	3,410
Trade liabilities	144	179
Other liabilities	5,410	477
Accruals and deferred income	40	76
Total shareholders' equity and liabilities	20,173	19,489

In the balance sheet as of December 31, 2017, Solvay SA net indebtedness totals €1,900 million (versus €4,203 million in 2016) and includes:

- internal bank accounts transferred from Solvay CICC that are included in other receivables for €1,854 million and in other liabilities for €4,919 million,
- intercompany loans included in financial assets for €245 million (versus €2,536 million at the end of 2016) and other receivables for €3,936 million and borrowings in financial debt for €1,200 million (versus €4,907 million at the end of 2016),
- short term investment and cash equivalent for €230 million. In 2016, the amount of cash (against the internal bank) amounted to €924 million, and
- External debts (outside Solvay Group) in financial debts for €2,045 million (versus € 2,750 million at the end of 2016).

The reduction in the net indebtedness amounts to €2,303 million and results mainly from transfer of investments in affiliates for €3,024 million partly offset by the acquisition of trade receivables without recourse for circa €1 billion.

Other liabilities include the dividend to be paid in 2018 (€381 million).

Income statement of Solvay SA (summary)

In € million	2017	2016
Operating income	967	794
Sales	9	11
Other operating income	959	784
Operating expenses	(829)	(913)
Operating profit/loss	138	(119)
Financial gains/losses	617	519
Profit for the year before taxes	755	400
Income taxes	(23)	4
Profit for the year	733	404
Transfer to (-) / from (+) untaxed reserves		
Profit available for distribution	733	404

The profit for the year of Solvay SA amounted in 2017 to €733 million, as against €404 million in 2016.

It includes:

 the operating result amounting to €138 million, as against €(119) million in 2016; the increase is due mainly to reinvoicing of additional services,

- financial gains and losses of which:
 - dividends received from its various financial investments amounting to €239 million, as against €467 million in 2016,
 - the differential between interest paid and received on its financing activities amounting to €(102) million, as against €(148) million in 2016,
 - other financial profit of €552 million resulting mainly from the sale of investments in affiliates within the Group (€475 million) as against a profit of €204 million in 2016.

An amount of €6,688 million including the net profit of the year is available for distribution.

Profit available for distribution

In € million	2017	2016
Profit for the year available for distribution	733	404
Carried forward	5,955	5,917
Total available to the General Shareholders' Meeting	6,688	6,321
Appropriation		
Gross dividend	381	366
Carried forward	6,307	5,955
Total	6,688	6,321

MANAGEMENT REPORT Corporate governance statement Risk management Business review Extra-financial statements Financial statements Declarations: Auditor's reports & Declaration by the persons responsible 289

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ASSURANCE REPORT OF THE STATUTORY AUDITOR ON A SELECTION OF SOCIAL, ENVIRONMENTAL AND OTHER SUSTAINABLE DEVELOPMENT INFORMATION FOR THE YEAR ENDED 31 DECEMBER 2017

Pursuant to your request and in our capacity of Statutory Auditor of Solvay SA / NV ("the Company"), we hereby present you our assurance report on a selection of social, environmental and other sustainable development information disclosed in the Solvay Group Annual Integrated Report for the year ended 31 December 2017 (the "2017 Annual Integrated Report"), identified by the symbol ...

Responsibility of the Company

This selection of information (the "Information") extracted from the 2017 Annual Integrated Report has been prepared under the responsibility of Solvay Group management, in accordance with internal measurement and reporting principles used by Solvay Group (the "Reporting Framework"). The Reporting Framework consists of specific definitions and assumptions that are summarized in section "Extra-financial statements" of the 2017 Annual Integrated Report.

Responsibility of the Statutory Auditor

It is our responsibility, based on the procedures performed by us, to express:

- "Limited assurance" for the Information identified by the symbol 🗸 as included in the 2017 Annual Integrated Report
- "Reasonable assurance" for the Information identified by the symbol 🚜 as included in the 2017 Annual Integrated Report

The complete list of Information in scope of our assurance engagement together with the type of assurance has been included in appendix A of this report.

We conducted our procedures in accordance with the international standard as defined in ISAE (International Standard on Assurance Engagements) 3000 (Revised)⁽¹⁾. With respect to independence rules, these are defined by the respective legal and regulatory texts as well as by the professional Code of Ethics, issued by the International Federation of Accountants ("IFAC").

Nature and scope of procedures

We have carried out the following procedures

- · General procedures:
 - We assessed the appropriateness of the Reporting Framework with respect to its relevance, completeness, neutrality, clarity and reliability, by taking into consideration, when relevant, the sector reporting practices.
 - We have verified the set-up within Solvay Group of the process to obtain, consolidate and check the selected Information with regard
 to its completeness and consistency. We have familiarized ourselves with the internal control and risk management procedures
 relating to the compilation of the information. We have conducted interviews with individuals responsible for social, environmental
 and other sustainable development reporting.
 - At the sites that we have selected based on their activity, their contribution to consolidated indicators, their location and a risk analysis, we have:
 - Conducted interviews to verify the proper application of procedures and obtained information to perform our verifications;
 - Conducted substantive tests, using sampling techniques, to verify the calculations performed and reconcile data with supporting evidence.
 - All the audited sites and perimeters are listed in appendix B of this document.

- "Limited assurance" for the Information identified by the symbol 👡 as included in the 2017 Annual Integrated Report
 - For the entity in charge of consolidation ("the Company"), as well as for the controlled entities, we have designed analytical procedures and verified, using sampling techniques, the calculations as well as the consolidation of this information in order to obtain limited assurance that the selected information does not contain any material errors that would question its preparation, in all material respects, in accordance with the Reporting Framework. A higher level of assurance would have required more extensive procedures.
- "Reasonable assurance" for the Information identified by the symbol Jan as included in the 2017 Annual Integrated Report
 - We conducted work of the same nature as the work described in section above (limited assurance) but in further detail, in particular performing an increased number of tests. When relevant, we have tested a representative sample of entities based on their activities, their contribution to the consolidated data, their location and a risk analysis. In these cases, the selected sample represents between 46 % and 52% of the published data, which is significantly more than what would be requested for a limited assurance review.

Conclusion

• For the indicators in scope of "limited assurance" (identified by the symbol ✓₂₀)

On the basis of the procedures performed by us, nothing came to our attention that causes us to believe that the Information identified by the symbol 🗸 as included in the 2017 Annual Integrated Report, is not prepared, in all material respects, in accordance with the Reporting Framework.

• For the indicators in scope of "reasonable assurance" (identified by the symbol 🚜)

In our opinion, based on the procedures performed, the Information identified by the symbol \checkmark as included in the 2017 Annual Integrated Report, has been prepared in all material respects in accordance with the Reporting Framework.

Observation

Without qualifying our conclusion above, we draw your attention to the following point: worked hours is used as the denominator of the indicators MTAR (Medical Treatment Accident Rate), LTAR (Lost Time accident Rate) and Process Safety Incident Rate. We observed that different methodologies are applied by the sites for calculating worked hours (employees and contractors).

Zaventem, 29 March 2018 **The statutory auditor**

DELOITTE Bedrijfsrevisoren / Réviseurs d'Entreprises

BV o.v.v.e. CVBA / SC s.f.d. SCRL Represented by Michel Denayer

Appendix A - Overview of indicators reviewed Indicators in **bold** are selected for reasonable insurance.

Reporting scope	Information	Audit Procedure	Audit scope	
Sustainable business	Product portfolio assessed	Reasonable Assurance	Group level	
solutions	Sustainable business solutions	Reasonable Assurance	Group level	
Greenhouse gas emissions	Greenhouse gas emissions intensity	Reasonable Assurance	Site level	
	Direct and indirect CO ₂ emissions (Scope 1 & 2)	Limited Assurance	Site level	
	Other greenhouse gas emissions according to Kyoto Protocol (Scope 1)	Limited Assurance	Site level	
	Total greenhouse gas emissions according to Kyoto Protocol (Scopes 1 & 2)	Limited Assurance	Site level	
	Other greenhouse gas emissions not according to Kyoto Protocol (Scope 1)	Limited Assurance	Site level	
Foora,	Primary energy consumption	Limited Assurance	Site level	
Energy	Energy efficiency index	Limited Assurance	Site level	
	Nitrogen oxides emissions – NO _x	Limited Assurance	Site level	
	Nitrogen oxides intensity	Limited Assurance	Site level	
	Sulfur oxides emissions – SO _x	Limited Assurance	Site level	
Air quality	Sulfur oxides intensity	Limited Assurance	Site level	
	Non-methane volatile organic compounds emissions – NMVOC	Limited Assurance	Site level	
	Non-methane volatile organic compounds intensity	Limited Assurance	Site level	
	Freshwater withdrawal	Limited Assurance	Site level	
Water and	Freshwater withdrawal intensity	Limited Assurance	Site level	
wastewater	Chemical oxygen demand (COD)	Limited Assurance	Site level	
	Chemical oxygen demand intensity	Limited Assurance	Site level	
	Industrial hazardous waste not treated in a sustainable way in absolute volume	Limited Assurance	Site level	
Waste and	Industrial hazardous waste not treated in a sustainable way intensity	Limited Assurance	Site level	
hazardous materials	Substance of very high concern (SVHC) according to REACH criteria present in products sold	Limited Assurance	Group level	
	Percentage of completion of Analysis of Safer Alternatives program for marketed substances	Limited Assurance	Group level	
	Medical Treatment Accident Rate – Employee, and contractors (MTAR)	Reasonable Assurance	Site level	
	Lost Time Accident Rate – Employee and contractors (LTAR)	Reasonable Assurance	Site level	
Employee health and safety	Fatal accidents of Solvay employees and contractors	Reasonable Assurance	Site level	
and safety	Industrial Hygiene program: sites where hygiene specialists have been trained to new Industrial Hygiene standards	Limited Assurance	Group level	
	Advanced Health Monitoring program: sites with advanced risk based medical surveillance	Limited Assurance	Group level	
Employee	Solvay engagement index	Reasonable Assurance	Group level	
engagement and wellbeing	Coverage by collective agreement	Limited Assurance	Group level	
0	Number of "risk sheets level 1" at the end of the year	Limited Assurance	Site level	
	Percentage of level 1 risk situations resolved within one year	Limited Assurance	Site level	
Process accident	Risk level 1 situation resolved	Limited Assurance	Site level	
and safety	Process safety rate	Limited Assurance	Group level	
	Medium severity incidents with environmental consequences	Limited Assurance	Site level	
Solvay Way	Solvay Way Group profile	Limited Assurance	Site and Grou level	
	Total headcount	Limited Assurance	Group level	
Diversity and	Percentage of women in the Group	Limited Assurance	Group level	
inclusion	Headcount by employee category (senior manager, middle manager, junior manager, non-manager)	Limited Assurance	Group level	

Appendix B - Overview of perimeter reviewed

		Audited reporting scope Greenhouse Waste and Employee Process							
Audited sites	Country	gas emissions	Energy	Air quality	Water and wastewater	Waste and hazardous materials	Employee health and safety	Process accident and safety	Solvay Way
Quzhou	China								
Devnya	Bulgaria								
Piedmont	USA								
Baton Rouge	USA								
Tavaux	France								
Zhenjiang	China								
St-Fons	France								
Spinetta	Italy								
Rheinberg	Germany			-					
Green River	USA								-
Rosignano	Italy								
Freiburg	Germany				·				
Panoli	India				·				
Paulinia	Brazil			-	·				
Shanghai	China				·				
Lyon	France				·				
Zhangjiagang Feixiang	China								
Neder-Over- Heembeek	Belgium								
Torrelavega	Spain								
Bollate	Italy								
Alexandria	Egypt								
Belle Etoile	France								
Rasal	India								
Alpharetta	USA								
Bernburg	Germany								
Princeton	USA								
Sao Paolo	Brazil			-					
Dombasle	France			-	·				
Santo Andre	Brazil								
Chalampé	France			-					
Marietta	USA			-					
Bad Wimpfen	Germany								

A selection of indicators audited

All relevant indicators audited

Audited GBUs and functions	Solvay Way
GBU Specialty Polymers	
GBU Novecare	
GBU Peroxides	
Corporate function – Corporate Finance	
Corporate function – Strategy	

A selection of indicators audited
All relevant indicators audited

STATUTORY AUDITOR'S REPORT TO THE SHAREHOLDERS' MEETING OF SOLVAY SA FOR THE YEAR ENDED 31 DECEMBER 2017

In the context of the statutory audit of the consolidated financial statements of Solvay SA ("the company") and its subsidiaries (jointly "the group"), we hereby submit our statutory audit report to you. This report includes our report on the consolidated financial statements together with our report on other legal and regulatory requirements. These reports are one and indivisible.

We were appointed in our capacity as statutory auditor by the shareholders' meeting of 10 May 2016, in accordance with the proposal of the board of directors issued upon recommendation of the audit committee and presentation of the works council. Our mandate will expire on the date of the shareholders' meeting approving the consolidated financial statements for the year ending 31 December 2018. We have performed the statutory audit of the consolidated financial statements of Solvay SA for 17 subsequent years.

Report on the audit of the consolidated financial statements Unqualified opinion

We have audited the consolidated financial statements of the group, which comprise the consolidated statement of financial position as at 31 December 2017, the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flows for the year then ended, as well as the summary of significant accounting policies and other explanatory notes. The consolidated statement of financial position shows total assets of 21,451 million EUR and the consolidated income statement shows a consolidated net profit for the year then ended of 1,116 million EUR.

In our opinion, the consolidated financial statements of Solvay SA give a true and fair view of the group's net equity and financial position as of 31 December 2017 and of its consolidated results and its consolidated cash flows for the year then ended, in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and with the legal and regulatory requirements applicable in Belgium.

Basis for the unqualified opinion

We conducted our audit in accordance with International Standards on Auditing (ISA). Our responsibilities under those standards are further described in the "Responsibilities of the statutory auditor for the audit of the consolidated financial statements" section of our report. We have complied with all ethical requirements relevant to the statutory audit of consolidated financial statements in Belgium, including those regarding independence.

We have obtained from the board of directors and the company's officials the explanations and information necessary for performing our audit. We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

We believe that the audit evidence obtained is sufficient and appropriate to provide a basis for our opinion.

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements of the current period. These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

Key audit matters

1. Goodwill impairment test

As a consequence of the Group's transition into a specialty chemicals company, a significant value of goodwill has arisen from acquisitions. At 31 December 2017 goodwill amounts to 5,042 million EUR and represents 23,5% of the consolidated total assets.

- In accordance with IFRS requirements, the carrying value of goodwill is tested annually for impairment by comparing the carrying amount of each cash-generating unit ("CGU") to its value in use.
- Based on the headroom that exists per CGU as well as sensitivity analyses performed on the valuation and cash flow assumptions used in the impairment test, we have focused on the key management judgements in the cash flows assumptions for the two following CGUs: Composite Materials and Technology Solutions. These 2 CGUs result mainly from the acquisition of Cytec in 2015. The goodwill balances are significant at 1,266 and 903 million EUR, respectively, representing the largest and third largest goodwill balances of the group. The difference between the CGUs carrying amounts and the values in use ("headroom") is around 10% of the carrying amount, which is below the average of the other Group's CGUs.
- We have also focused on the valuation assumptions (discount rate and long-term growth rate) in the context of the aforementioned CGUs important sensitivity to said assumptions, and the fact that management applied the same discount rate for all the CGUs.
- As consequence, we consider goodwill impairment test for the two aforementioned CGUs to be a key audit matter.
- Management's disclosure on impairment of goodwill is included in Note F28 of the consolidated financial statements

How our audit addressed the key audit matters

- We obtained an understanding and performed walkthroughs of the goodwill impairment and the budgeting/forecasting processes through which we identified relevant controls;
- We evaluated and challenged management's determination of cash-generating units for the purpose of goodwill impairment testing;
- We tested the carrying amounts of the CGUs used in the impairment test for reconciliation with the financial reporting system;
- We evaluated whether the valuation methodology is appropriate in the circumstances and whether the methodology used for determining the value in use is applied consistently with the preceding periods;
- We assessed and challenged the reasonableness of the valuation assumptions (discount rate and long-term growth rate):
- We assessed and challenged the reasonableness of the cash flow assumptions, both in the projection period as in the terminal period;
- We performed benchmarking and sensitivity analyses with peers and analyst reports, on valuation and cash flow assumptions;
- We tested the mathematical accuracy of the overall model;
- We reviewed and tested the management's reconciliation of the valuations, used for impairment testing purposes, to the entity's market capitalization;
- We evaluated whether the fair value measurements and disclosures in the financial statements are in conformity with the applicable accounting framework;
- We involved our valuation specialists to assist us in performing certain of the above procedures.

2. Tax reform in the US

- On 22 December 2017, the US President signed into law the tax legislation commonly known as the Tax Cuts and Jobs Act. Accordingly, recognition of the tax effects of the Act is required for the year ending 31 December 2017.
- The main consequences on the consolidated figures as of December 2017 are:
 - Decrease of the corporate income tax rate (from 35% to 21%) resulting in the reduction of deferred tax liabilities for 193 million EUR through P&L (including an adjustment on temporary differences on intangible assets for an amount of 175 million EUR);
 - Recognition of a long term tax payable of 40 million EUR through P&L which represents its best estimate of the transition tax as of 31 December 2017. Because the amount of the transition tax is inherently subject to judgements, measurement of the ultimate amount to be paid is potentially subject to future adjustments. The group mentions this point as a key judgement in its annual report as part of the section "Critical accounting judgments and key sources of estimation uncertainties".
- Following this US tax reform, statutory reorganizations result in a net derecognition of deferred tax assets for 92 million EUR and the recognition of a DTL on dividends for 10 million EUR.
- We consider the accounting treatment in the financial statements of this event as a key audit matter because of the timing of tax reform (December 2017), the complexity of the new legislation and the judgement required to assess the impact of the tax reform.
- Management's disclosure on the main impacts of the US tax reform is the Note F7 of the consolidated financial statements.

How our audit addressed the key audit matters

- The audit procedures undertaken to address aforementioned audit risks has been primarily substantive;
- Furthermore, given the significant judgement associated with the transition tax, we challenged management on (i) the process and methodology used by Solvay to calculate the tax liability and (ii) the accuracy and completeness of the information used in the inputs to the calculation – namely earnings and profits, tax pools, and cash balances of the related subsidiaries;
- Substantive review of impact of the tax reform was performed by our US tax specialists and mainly covered the following items:
 - Change in tax rate:
 - Accuracy of the impact of the change in corporate tax rate, including the split between income statement and Other Comprehensive Income;
 - Transition tax:
 - Conformity of the transition tax calculation with the newly enacted tax law;
 - Accuracy of the information used to calculate the earnings and profits and foreign tax pools of the related subsidiaries;
 - Completeness of the information used to calculate the transition tax;
 - Accuracy of the cash and cash equivalents balances of the related subsidiaries.

3. Divestment of Acetow business

- On 1 June 2017, Solvay completed the divestment of its cellulose acetate tow business ("Acetow") to private equity funds managed by Blackstone ("Buyer").
- We considered the accounting treatment in the financial statements of this event as a key audit matter because of the size and complexity of the transaction. The business generated sales of 531 million EUR and operating profit ("EBIT") of 116 million EUR for the year ending 31 December 2016.
- The disclosure of the divested operations is contained in the consolidated income statement, the consolidated statement of comprehensive income, the consolidated cash flows from discontinued operations and Note F8 Discontinued operations of the financial statements.

How our audit addressed the key audit matters

- We tested the disposal gain by reconciling the consideration to the Share Sale Agreement and bank accounts and by verifying the net assets disposed to underlying accounting records. In addition, we verified whether the disposal gain was calculated in accordance with the relevant clauses of the Agreement;
- We also evaluated the adequacy of the disclosure (Note F8) of this disposal in the financial statements.

4. Planned divestment of Polyamide - Application of IFRS 5

- On 18 September 2017 Solvay entered into a binding agreement with BASF for the sale of its Polyamide business. The Share Sale Agreement was signed on 22 December 2017. The business generated revenue of 1,414 million EUR for the year ending 31 December 2016. The transaction is expected to close in the second half of 2018. Based on these considerations, Management determined the criteria of IFRS 5 were met and the activities should be presented as Held-for-sale and Discontinued operations at 31 December 2017. We considered accounting treatment in the financial statements of this event as a key audit matter because:
 - The size and complexity of the transaction;
 - The appropriate application of IFRS 5, specifically whether the classification is made in accordance with the requirements of IFRS, whether the assets and liabilities are measured at the lower of fair value less costs to sell or their carrying amounts;
 - The potential impact of the transaction on impairment assessments of assets of other businesses within the group.
- The disclosure of the discontinued operations is contained in the consolidated income statement, the consolidated statement of comprehensive income, the consolidated cash flows from discontinued operations, the consolidated statement of financial position, Note F8 Discontinued operations and Note F25 Assets Held for Sale of the financial statements.

- We read and reviewed the executed agreements to evaluate and determine appropriate treatment of the transaction in accordance with the requirements of IFRS 5;
- We held meetings and performed inquiries with the entity's M&A department to obtain an understanding of the disposal process as well as of the particularities and contingencies of the executed agreements;
- We performed procedures to verify completeness and accuracy of the assets and liabilities reflected as held-forsale and the results presented as discontinued operations, including measurement in accordance with IFRS. Our procedures include but are not restricted to:
 - Reconciling the reclassified assets and liabilities and results to the business unit reporting available in the entity's financial reporting system;
 - Reviewing and challenging management's preliminary estimate of the disposal gain; we note that up to closing of the transaction, the calculation of some amounts is based on judgment.

5. Defined benefit obligations

- The defined benefit net liability, amounting to 2,616 million EUR, consists of defined benefit obligations (5,349 million EUR) offset partially by plan assets (2,733 million EUR). The largest post-employment plans in 2017 are in the United Kingdom, France, the United States, Germany and Belgium. These five countries represent 94% of the total defined benefit obligations.
- Defined benefit obligations is a key audit matter mainly as
 the amounts are significant, the assessment process is
 complex and it requires key management estimates to
 determine the actuarial assumptions and fair value of
 assets. The actuarial assumptions used in the measurement
 of the group's pension commitments involve judgements in
 relation to mortality, price inflation, discount rates, and rates
 of pension and salary increases, around which there are
 inherent uncertainties.
- Management's disclosure on defined benefit obligations is included in Note F31A of the consolidated financial statements

How our audit addressed the key audit matters

- We assessed and challenged management's assumptions (actuarial and other assumptions), the numerical data, the actuarial parameters, the calculation of the provisions as well as the presentation in the consolidated statement of financial position and the notes to the consolidated financial statements based on the actuarial reports;
- Our audit of the fair value of the plan assets was carried out on the basis of respective bank and fund confirmations as well as expert valuation reports which were available to us and which we have reviewed;
- We assessed and reviewed the completeness and accuracy of the disclosures in the notes in accordance with IAS 19;
- We involve in this review our actuaries. We also reviewed the internal controls, mainly around database maintenance and update of assumptions.

Responsibilities of the board of directors for the consolidated financial statements

The board of directors is responsible for the preparation and fair presentation of the consolidated financial statements in accordance with International Financial Reporting Standards (IFRS) as adopted by the European Union and with the legal and regulatory requirements applicable in Belgium, and for such internal control as the board of directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated financial statements the board of directors is responsible for assessing the group's ability to continue as a going concern, disclosing, as applicable, matters to be considered for going concern and using the going concern basis of accounting unless the board of directors either intends to liquidate the group or to cease operations, or has no other realistic alternative but to do

Responsibilities of the statutory auditor for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISA will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with ISA, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- identify and assess the risks of material misstatement of the consolidated financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from an error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control;
- obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the group's internal control;
- evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management;
- conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the consolidated financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the group to cease to continue as a going concern;
- evaluate the overall presentation, structure and content of the consolidated financial statements, and whether the consolidated financial statements represent the underlying transactions and events in a manner that achieves fair presentation.
- obtain sufficient appropriate audit evidence regarding the financial information of the entities and business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with the audit committee regarding, amongst other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the audit committee with a statement that we have complied with relevant ethical requirements regarding independence, and we communicate with them about all relationships and other matters that may reasonably be thought to bear our independence, and where applicable, related safeguards.

From the matters communicated to the audit committee, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes any public disclosure about the matter.

Report on other legal and regulatory requirements

Responsibilities of the board of directors

The board of directors is responsible for the preparation and the content of the directors' report on the consolidated financial statements, the statement of non-financial information attached to the directors' report on the consolidated financial statements and other matters disclosed in the annual report.

Responsibilities of the statutory auditor

As part of our mandate and in accordance with the Belgian standard complementary (Revised in 2018) to the International Standards on Auditing (ISA), our responsibility is to verify, in all material respects, the director's report on the consolidated financial statements, the statement of non-financial information attached to the directors' report on the consolidated financial statements and other matters disclosed in the annual report, as well as to report on these matters.

Aspects regarding the directors' report on the consolidated financial statements and other matters disclosed in this report

In our opinion, after performing the specific procedures on the directors' report on the consolidated financial statements, this report is consistent with the consolidated financial statements for the period ended 31 December 2017 and it has been established in accordance with the requirements of article 119 of the Companies Code.

In the context of our statutory audit of the consolidated financial statements we are also responsible to consider, in particular based on information that we became aware of during the audit, if the directors' report on the consolidated financial statements is free of material misstatement, either by information that is incorrectly stated or otherwise misleading. In the context of the procedures performed, we are not aware of such material misstatement. We do not express and will not express any kind of assurance on the directors' report on the consolidated financial statements, nor on the statement of non-financial information nor on other matters disclosed in the annual report, except for certain non-financial performance indicators referred to in the next paragraph.

The non-financial information as required by article 119, § 2 of the Companies Code, has been disclosed in the directors' report on the consolidated financial statements. This non-financial information has been established by the company in accordance with the Global Reporting Initiative (GRI) framework. As requested by Solvay management, we have issued a separate limited and reasonable assurance report on a selection of social, environmental and other sustainable development information in accordance with the International Standard of Assurance Engagements ISAE 3000. We do however not express any opinion on the question whether this non-financial information has been established, in all material respects, in accordance with this GRI framework. For information not included in our specific assurance report on non-financial information, we do not express any assurance on individual elements that have been disclosed in this non-financial information.

Statements regarding independence

- No prohibited non-audit services, as referred to by the law, have been performed and our audit firm and, if applicable, our network of audit firms, remained independent from the company during the performance of our mandate.
- The fees for the additional non-audit services compatible with the statutory audit of the consolidated financial statements, as defined in article 134 of the Companies Code, have been properly disclosed and disaggregated in the notes to the consolidated financial statements.

Other statements

• This report is consistent with our additional report to the audit committee referred to in article 11 of Regulation (EU) No 537/2014.

Zaventem, 29 March 2018

The statutory auditor

DELOITTE Bedrijfsrevisoren / Réviseurs d'Entreprises

BV o.v.v.e. CVBA / SC s.f.d. SCRL Represented by Michel Denayer

DECLARATION BY THE PERSONS RESPONSIBLE

The Board of Directors hereby declares that, to the best of its knowledge:

- a. the financial statements, prepared in accordance with International Financial Reporting Standards ("IFRS"), give a true and fair view of the assets, liabilities, financial position, and earnings of the issuer and of the entities included in the consolidation
- b. the management report includes an accurate review of the business developments, earnings, and financial position of the issuer and of the entities included in the consolidation, as well as a description of the main risks and uncertainties that these entities face.

For the Board of Directors,

Nicolas Boël

Chairman of the Board of Directors

Micolas Bail

Jean-Pierre Clamadieu

Chairman of the Executive Committee and CEO Director

GLOSSARY

ADJUSTMENTS

Adjustments made to IFRS results for elements distorting comparability of the Group underlying performance over time. These adjustments consist of:

- Results from portfolio management and reassessments
- Results from legacy remediation and major litigations
- M&A related impacts, consisting mainly of non-cash purchase price allocation impacts (e.g. inventory step-up and amortization of intangibles) and retention bonuses relative to Chemlogics and other acquisitions
- Net financial results relating to changes in discount rates, hyperinflation, coupons of hybrid bonds considered as dividends under IFRS, and debt management impacts (comprising mainly gains/(losses) relating to the early repayment of debt)
- Adjustments of equity earnings for impairment gains or losses and unrealized foreign exchange gains or losses on debt
- Results from available-for-sale financial assets
- Tax effects relating to the items listed above and tax expense or income of prior years.
- All adjustments listed above apply to both continuing and discontinued operations, and include the impacts on noncontrolling interests.

BASIC EARNINGS PER SHARE

Net income (Solvay's share) divided by the weighted average number of shares, after deducting own shares purchased to cover stock options program.

CARECHEM

Carechem 24 is a multilingual telephone advice service providing access to a team of trained responders 24 hours a day, 365 days a year. Carechem 24 provides companies all over the world with emergency product support during a hazardous materials incident.

CEFIC

European Chemical Industry Council.

CEO

Chief Executive Officer.

CFO

Chief Financial Officer.

CFROI

Cash Flow Return On Investment measures the cash returns of Solvay's business activities. Movements in CFROI levels are relevant indicators for showing whether economic value is being added, though it is accepted that this measure cannot be benchmarked or compared with industry peers. The definition uses a reasonable estimate of the replacement cost of assets

and avoids accounting distortions, e.g. for impairments. It is calculated as the ratio between recurring cash flow and invested capital, where:

- Recurring cash flow = Underlying EBITDA + Dividends from associates and joint ventures --- Earnings from associates and joint ventures +
 - Recurring capex + Recurring income taxes,
- Invested capital = Replacement value of goodwill & fixed assets
 Net working capital + Carrying amount of associates and joint ventures.
- Recurring capex is normalized at 2% of the replacement value of fixed assets net of goodwill values,
- Recurring income tax is normalized at 30% of (Underlying EBIT
 --- Earnings from associates and joint ventures)Cash flow
 return on investment, calculated as the ratio between
 recurring cash flow and invested capital, where

CGU

Cash-generating unit.

CODE OF CONDUCT

Solvay is committed to responsible behavior and integrity, taking into account the sustainable growth of its business and its good reputation in the communities in which it operates.

COMEX

Executive Committee.

CSR

Corporate Social Responsibility.

DILUTED EARNINGS PER SHARE

Net income (Solvay's share) divided by the weighted average number of shares adjusted for effects of dilution.

DISCONTINUED OPERATIONS

Component of the Group which the Group has disposed of or which is classified as held for sale, and:

- represents a separate major line of business or geographical area of operations
- is part of a single coordinated plan to dispose of a separate major line of business or geographical area of operations or
- is a subsidiary acquired exclusively with a view to resale.

DIVIDEND YIELD (NET)

Net dividend divided by the closing share price on December 31.

DIVIDEND YIELD (GROSS)

Gross dividend divided by the closing share price on December 31.

DJ STOXX

Dow Jones Stoxx is a European stock index composed of the 665 most important European shares.

DJ EURO STOXX

Dow Jones Euro Stoxx is a pan-European stock index which includes the 326 most important shares of the general Dow Jones index, belonging to eleven countries of the Eurozone.

EBIT

Earnings before interest and taxes.

EBITDA

earnings before interest and taxes, depreciation and amortization.

ENVIRONMENTAL PROTECTION AGENCY

The U.S. Environmental Protection Agency (EPA or USEPA) is an agency of the United States federal government which was created for the purpose of protecting human health and the environment by writing and enforcing regulations based on laws passed by Congress.

EQUITY PER SHARE

Equity (Solvay share) divided by the number of outstanding shares at year end (issued shares – treasury shares).

EURONEXT

Global operator of financial markets and provider of trading technologies.

FKM

Fluoro-elastomer, polymer type.

FREE CASH FLOW

Free cash flow measures cash flow from operating activities, net of investments. It excludes any M&A or financing related activities, but includes elements like dividends from associates and joint-ventures, pensions, restructuring costs, etc. It is defined as cash flow from operating activities (excluding cash flows from expenses incurred in connection with acquisitions of subsidiaries) and cash flow from investing activities (excluding cash flows from or related to acquisitions and disposals of subsidiaries and other investments, and excluding loans to associates and non-consolidated investments, as well as related tax elements and recognition of factored receivables).

FTSEUROFIRST 300

The FTSEurofirst 300 Index tracks the equity performance across the region of the 300 largest companies ranked by market capitalization in the FTSE Developed Europe Index.

GBU

Global Business Unit.

GEARING RATIO

Underlying net debt / total equity.

GHG

Greenhouse gas.

GRI

The Global Reporting Initiative (GRI) is a leading organization in the sustainability field. GRI promotes the use of sustainability reporting as a way for organizations to become more sustainable and contribute to sustainable development.

HBP

High-barrier polymer.

HDS

Highly Dispersible Silica.

HPPA

Polyamide High Performance.

HPPO

Hydrogen peroxide propylene oxide, a new technology to produce propylene oxide using hydrogen peroxide.

IFRS

International Financial Reporting Standards.

INTEGRATED REPORTING

This is a process founded on integrated thinking, which results in a periodic integrated report by an organization about value creation over time and related communications regarding aspects of value creation.

ISO 9001

The ISO 9001 standard defines a set of requirements for the establishment of a system of quality management in an organization, whatever its size and activity.

ISO 14001

The ISO 14001 family addresses various aspects of environmental management. It provides practical tools for companies and organizations looking to identify and control their environmental impact and constantly improve their environmental performance.

ISO 14040

The ISO 14040 standard covers life cycle assessment (LCA) studies and life cycle inventory (LCI) studies.

ISO 26000

The ISO 26000 is a global standard which provides guidelines for organizations that wish to operate in a socially responsible manner. The standard was published in 2010 after five years of negotiations among a large number of stakeholders worldwide.

Representatives of governments, NGOs, industry, consumer groups, and the world of work were involved in its development. It therefore represents an international consensus.

LEVERAGE RATIO

Underlying net debt / underlying EBITDA of the last 12 months.

LOSS PREVENTION PROCESS

Loss prevention aims at maintaining production flow and profitability of the plants by providing risk mitigation. It also contributes to increasing the protection of people and the environment.

LTAR

Lost Time Accident Rate.

LTI

Long Term Incentive.

M&A

Mergers and Acquisitions.

M&A RELATED IMPACTS

It mainly includes non-cash Purchase Price Allocation impacts (e.g. inventory step-up and amortization of intangibles other than for PPA Rhodia) and retention bonuses relative to Chemlogics and other acquisitions.

MATERIALITY

Organizations are faced with a wide range of topics on which they could report. The relevant topics are those that may reasonably be considered important for reflecting the organization's economic, environmental, and social impacts, or influencing the decisions of stakeholders, and therefore potentially merit inclusion in an annual report. Materiality is the threshold at which aspects become sufficiently important that they should be reported.

MTAR

Medical Treatment Accident Rate.

NATURAL CURRENCY HEDGE

A natural currency hedge is an investment that reduces the undesired risk by matching cash in and outflows.

NET COST OF BORROWINGS

cost of borrowings netted with interest on lendings and short-term deposits, as well as other gains (losses) on net indebtedness

NET DEBT

Non-current financial debt + current financial debt - cash & cash equivalents - other financial instrument receivables.

NET FINANCIAL CHARGES

net cost of borrowings, costs of discounting provisions (namely, related to post-employment benefits and HSE liabilities) and income / loss from available-for-sale financial assets.

NET PRICING

The difference between the change in sales prices and the change in variable costs.

NET SALES

Sales of goods and value added services corresponding to Solvay's know-how and core business. Net sales exclude other revenues comprising primarily commodity and utility trading transactions and other revenue deemed as incidental by the Group.

NET WORKING CAPITAL

Includes inventories, trade receivables, and other current receivables, netted with trade payables and other current liabilities.

OCI

Other Comprehensive Income.

OECD

Organisation for Economic Co-operation and Development.

OHSAS 18001

OHSAS 18001 is an international occupational health and safety management system specification.

OLED

Organic Light-Emitting Diode.

OPEN INNOVATION

Innovation that is enriched with outside expertise, through partnerships with the academic world and by shareholdings in start-ups, either directly or via investment funds.

OTHER ADJUSTMENTS

Adjustments made for elements distorting comparability over time of the underlying performance of the Group. They include results from portfolio management and reassessments and from legacy remediation and major litigation, M&A related impacts that include PPA impacts of acquisitions other than Rhodia and Cytec and retention bonus granted at closing date, net financial expense or income relating to change in discount rates, hyperinflation financial results and debt refinancing, adjustments of equity earnings for impairment gains or losses and unrealized foreign exchange gains or losses on debt, tax effects relating to the items listed before, tax expense or income of previous years, all adjustments listed before for continuing operations and impacting discontinued operations.

PA

Polyamide, polymer type.

PCC

Precipitated calcium carbonate.

PEEK

Polyetheretherketone.

PP

Unit of percentage points or 1.0%, used to express the evolution of ratios.

PPA

Purchase Price Allocation (PPA) accounting impacts related to acquisitions.

PRICING POWER

The ability to create positive net pricing.

PSU

Performance Share Unit.

PO

Propylene oxide.

PPS

Polyphenylene sulfide.

PPSU

Polyphenylsulfone.

PRODUCT STEWARDSHIP

A responsible approach in managing risks throughout the entire life cycle of a product, from the design stage to the end of life.

PVC

Polyvinyl chloride.

PVDF

Polyvinylidene fluoride.

R&I

Research & Innovation.

REACH

REACH is the European Community Regulation on chemicals and their safe use (EC 1907/2006). It deals with the registration, evaluation, authorization, and restriction of chemical substances. The law entered into force on June 1, 2007.

RESPONSIBLE CARE®

Responsible Care® is the global chemical industry's unique initiative to improve health, environmental performance, enhance security, and to communicate with stakeholders about products and processes.

RESULT FROM LEGACY REMEDIATION AND MAJOR LITIGATIONS

It includes:

- The remediation costs not generated by on-going production facilities (shut-down of sites, discontinued productions, previous years' pollution), and
- The impact of significant litigations.

RESULTS FROM PORTFOLIO MANAGEMENT AND REASSESSMENTS

It includes:

- Gains and losses on the sale of subsidiaries, joint operations, joint ventures, and associates that do not qualify as discontinued operations
- Acquisition costs of new businesses
- Gains and losses on the sale of real estate not directly linked to an operating activity
- Restructuring charges driven by portfolio management and reassessment, including impairment losses resulting from the shutdown of an activity or a plant and
- Impairment losses resulting from testing of CGUs.

It excludes non-cash accounting impact from amortization and depreciation resulting from the purchase price allocation (PPA) from acquisitions.

REVENUE FROM NON-CORE ACTIVITIES

Revenues comprising primarily commodity and utility trading transactions and other revenue deemed incidental by the Group, being regarded as inappropriate to Solvay's know-how and core business.

ROE

Return on equity.

SAFETY DATA SHEETS

Safety Data Sheets are the main tool for ensuring that manufacturers and importers communicate enough information along the supply chain to allow safe use of their substances and mixtures.

SASB

Sustainability Accounting Standards Board. SASB's mission is to develop and disseminate sustainability accounting standards that help public corporations disclose material, decision-useful

information to investors. That mission is accomplished through a rigorous process that includes evidence-based research and broad, balanced stakeholder participation.

SEVESO REGULATIONS

The Control of Major Accident Hazards Involving Dangerous Substances Regulations. These regulations (often referred to as "COMAH Regulations" or "Seveso Regulations") give effect to European Directive 96/82/EC. They apply only to locations where significant quantities of dangerous substances are stored.

SOLVAY WAY

Launched in 2013 and aligned with ISO 26000, Solvay Way is the sustainability approach of the Group. It integrates social, societal, environmental, and economic aspects into the Company's management and strategy, with the objective of creating value shared by all of its stakeholders. Solvay Way is based on an ambitious and pragmatic framework serving as a tool of both measurement and progress. Solvay Way lists 49 practices – practices that reflect the Solvay Way's 22 commitments and are structured on a four-level scale (launch, deployment, maturity, performance).

SOP

Stock Option Plan.

SPM

The Sustainable Portfolio Management tool is integrated into the Solvay Way framework (linked to five practices). It serves as a strategic tool for developing information on our portfolio and analyzing the impacts of sustainability megatrends on our businesses.

STI

Short Term Incentive.

SVHC

Substance of Very High Concern (SVHC) is a chemical substance, the utilization of which within the European Union has been proposed to become subject to legal authorization under the REACH regulation.

TAX RATE

Income taxes / (Result before taxes – Earnings from associates & joint ventures – interests & realized foreign exchange results on RusVinyl joint venture). The adjustment of the denominator regarding associates and joint ventures is made as these contributions are already net of income taxes.

UNDERLYING

Underlying results are deemed to provide a more comparable indication of Solvay's fundamental performance over the reference periods. They are defined as the IFRS figures adjusted for the "Adjustments" as defined above.

UNDERLYING NET DEBT

Underlying net debt reclassifies as debt 100% of the hybrid perpetual bonds, considered as equity under IFRS.

VELOCITY

Total number of shares traded during the year divided by the total number of listed shares, using the Euronext definition.

VCM

Vinyl chloride.

VELOCITY ADJUSTED BY FREE FLOAT

Velocity adjusted as a function of the percentage of the listed shares held by the public, using the Euronext definition.

WBCSD

World Business Council for Sustainable Development.

WCF

World Class Factory.

YOY

Year on year comparison.

SHAREHOLDER'S DIARY

MAY 3, 2018

1st quarter 2018 results

MAY 8, 2018

Annual General Assembly

MAY 21, 2018

Final dividend ex-coupon date

MAY 22, 2018

Final dividend record date

MAY 23, 2018

Final dividend payment date

AUGUST 1, 2018

2nd quarter and 1st half 2018 results

NOVEMBER 8, 2018

3rd quarter 2018 results

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