

**ANNEX TO THE MINUTES OF THE ORDINARY SHAREHOLDERS MEETING**

**HELD ON MAY 11, 2021**

**WRITTEN AND ORAL QUESTIONS OF THE SHAREHOLDERS AND ANSWERS**

*Les questions ont été lues dans la langue dans laquelle elles ont été posées et, sauf indication contraire, il y a été répondu dans la même langue (dans chaque cas avec traduction simultanée en français, néerlandais et/ou anglais).*

*Vragen werden gelezen in de taal waarin zij werden gesteld en, tenzij anders vermeld, werden beantwoord in dezelfde taal (elke keer met gelijktijdige vertaling naar het Frans, Nederlands en/of Engels).*

*Questions were read in the language in which they were asked and, unless indicated otherwise, were answered in the same language (with simultaneous translation in Dutch, French and/or English).*

**QUESTIONS - PART 1**

**1. Ilham, with the benefit of hindsight, is the GROW strategy that you announced in 2019 still the right one? What did the Covid crisis teach you?**

**Ilham Kadri:** As you know, the Board hired me with one mandate: unleash the full potential of Solvay. I have been 2 years in the job and what a ride it has been. We launched the GROW strategy in the fall 2019, and last year we launched: Solvay One Planet sustainable roadmap, our Purpose, Values and Code of Business Integrity, and last but not the least Our AT BEST behaviors, which are our core competencies that define how we achieve and thrive at Solvay when you are an employee or a leader.

The combination of these foundations will enable us to not only win, perform but also change the game. And I trust our investors started seeing the performance in the last 2 years, which exceeded what I could have hoped for in the circumstances we all faced last year.

There are three points I would like to highlight: Strategy, Structure and Culture.

- GROW Strategy: from a strategic portfolio perspective, we differentiated the mandates of businesses and not only did we centralize the resources allocation in the group, but we allocated capital - both human and financial - with discipline to ensure that we prioritized shareholder value creation. These steps are working well, businesses are today clearly focused on meeting customer needs and growing the topline, optimizing returns and delivering more cash. Part of the GROW strategy is Solvay One Planet. History teaches us that companies that ignore ESG undermine their longevity. Our newly launched Solvay One Planet roadmap is all about building a sustainable and a responsible future. On the one hand, we are strategically de-risking our operations for example from a climate change and resource scarcity viewpoint. On the other hand, we are ensuring that we create the conditions for superior & responsible growth.
- Second, the structure which we reviewed and adapted to deliver on our strategy, including reviewing top 30 leadership positions which have been changed, top graded at the level of 70%.
- The cultural aspect of the change is also key and close to my heart. That is the W of GROW, which stands for Winning, is key and helped the Solvay team to drive transversal programs and has been delivering strong results.

Now between us, something happened called Covid-19 nobody expected. It has stress-tested our families, our businesses, our people, in fact it tested the leaders we are. Through the Covid crisis, we realized that 90% of our businesses have emerged resilient or are in a fast recovery mode. Solvay People didn't waste a good crisis: we accelerated reforms, closing low returns sites for example, putting the money where our strategic priorities are and we became bolder by launching our growth platforms, like the EV Batteries, TPC, the green H2; or the digital; while training, coaching and educating our sales force to unlearn and relearn winning.

Also we confirmed that the market secular trends of the future Solvay shared with you during the fall 2019, have actually been confirmed, during the crisis, as the indisputable trends of tomorrow and in fact have

been accelerated by the pandemic. Remember amongst others are: electrification, lightweighting, digitalization, resources efficiency, which have been at the front page of your newspaper every day during the crisis.

So at this stage, I am more than ever convinced that we have the right strategy and plans, the strong foundations and we have been training to deliver on them. Indeed the Solvay people will continue to surprise you and didn't waste a good crisis. They have the intellectual, technical muscles and the emotional resilience to reinvent Solvay even faster. As I said: The Best To Come!

2. **Solvay is quite a complex Group and its portfolio never ceases to change. It makes it quite difficult to understand, and it seems that you, Dr Kadri, are intent on making further changes. Can you reassure us that Solvay will learn from the past where it is clear that it paid too much for some acquisitions? What do you expect the portfolio of Solvay to look like in, say, 3 or 5 years' time?**

**Ilham Kadri:** I can confirm that your view of Solvay's complexity is shared by many shareholders and analysts - who did not hesitate to repeat that to me in my listening tour in March 2019, my first month in the job. I fully understand that constant portfolio transformation makes it difficult to compare current performance with historic performance, and we are doing everything possible to share data with full transparency, at constant scope and making it as easy as possible for you. Please call on us: the investor relations team, Karim and I anytime to help you with the numbers.

Now, it is true to say that we are not standing still and the portfolio continues to evolve. On top of the polyamide divestiture, we worked a lot, last year: six businesses were divested.

And now, remember my mandate is to unleash the value of Solvay, and there are no sacred cows.

This means that when we consider not being the best owner of a business and where we can create more value from divesting, then this is what we shall do. Where we find that we can make an acquisition that is strategically coherent and that allows us to create value, then this is what we shall do.

In all cases, we will of course preserve investment grade rating and our capacity to pay dividends as we continue to upgrade the portfolio. And it goes without saying that we learn from our past M&As and I did a deep dive with the leadership and the Board.

You also asked what Solvay's portfolio will be in 3 or 5 years' time. I will not comment on specifics at this stage, but I can confirm that we will increasingly focus on our specialties businesses, building depth with our growth platforms and acquiring complementary businesses and technologies, wherever possible.

Now, rest assured that everything we do will be guided by sustainable value creation and TSR, with an eye to profits, cash, and returns.

3. **Être une entreprise responsable, c'est aussi être un employeur de confiance. Nous ne pouvons que constater qu'une part importante de vos économies provient de la suppression d'emplois. Comment conciliez-vous cela avec votre objectif ?**

**Ilham Kadri:** Merci pour cette question. La responsabilité est un mot important chez Solvay. Au-delà de sa définition classique, être responsable chez nous, c'est aussi disposer des compétences et des qualifications nécessaires pour se développer et libérer le potentiel. Cela ne signifie pas garantir des emplois à vie.

Lorsque nous constatons une réduction spectaculaire des ventes en raison de la crise, par exemple dans le secteur du pétrole et du gaz ou dans l'aéronautique civile, nous nous devons d'agir de manière décisive et adapter nos structures de coûts. Si nous ne le faisons pas, si nous tardons à agir, nous risquons de compromettre la viabilité non seulement de ces business, mais de la société toute entière et donc de beaucoup d'autres emplois. En bref, une action décisive et opportune est le seul choix responsable qui s'offre à nous.

À ce propos, le progrès technique est de plus en plus rapide, et les technologies numériques accélèrent le rythme du changement. Les aptitudes et les compétences du passé ont fait notre force. Les besoins de demain exigent de nouvelles compétences.

Vous avez donc raison, de nous voir supprimer des rôles là où nous pouvons éviter les doublons et gagner en efficacité, en tirant parti des technologies numériques.

Cela est amplement équilibré par le fait que nous investissons également dans la création de rôles dans le commercial par exemple pour mieux servir nos clients et nous investissons dans la requalification des personnes avec la Sales Academy que nous avons lancée et avec la création de nouveaux rôles dans la science des données et les technologies numériques.

Cette approche est un autre excellent exemple de ce que nous pouvons considérer comme le pouvoir de « ET » (AND). Même en ce qui concerne les personnes, nous pouvons réduire les coûts « ET » nous pouvons investir dans les personnes. Un œil sur le microscope et un œil sur le télescope.

**4. I have some reservations regarding some of the director's resolutions. How does the board select its members and make these recommendations?**

**The Chairman:** I will take this important question. To start with, I invite you to consult our Governance Charter and in particular section 5.3.2. This is publicly available on our web site. For your convenience, let me highlight some of the key factors that motivate our proposals.

- Ensure that majority of Directors are non-executive, and the majority thereof independent, as defined by law in Belgium
- Secure a range of competencies and experience
- Ensure also composition is international and diverse in particular gender, age and nationalities.

As you could read in our annual report, we have fully applied those criteria in our selection process. I also wish to highlight the following key facts:

- The role of the Chair and CEO are separated
- 14 out of the 15 Directors are non-executive, representing a wide diversity of competencies, gender and geographies
- 11 of the 15 Directors are recognized as independent in line with the law in Belgium
- 5 of the 15 Directors were appointed in the last 3 years
- There are 7 different nationalities on the Board
- Women Directors represent more than half of the Board

It is also important to remind that the Board is more than the sum of the individuals. The Board is a collegial body. Diversity brings progress in its functioning, especially in the forward-looking exercise of identifying the challenges that we are going to face in the coming years, and fosters the experience available around the table to anticipate such challenges. We believe that the proposed reelection of certain Board members, and the election of the new proposed Board members, fit into this mandate. I therefore invite all shareholders to support proposals.

**5. We appreciate the clear improvement in cash generation and welcome the progress in deleveraging the Group. Can you say a few words to reassure us that we are not under-investing in Solvay's future?**

**Ilham Kadri:** I agree that we delivered a record cash flow for 2 years in a row. By the way I challenged the team to stay positive, since I joined the company with a first negative quarter. Cash is king in good times and even more in bad times!

Now with this FCF and the monetization of the polyamide business, we largely contributed to significantly deleveraging the balance sheet. And I trust you are happy with it!

Maybe I can ask Karim to explain to you the main factors driving the improved cash generation.

**Karim Hajjar:** Yes thank you Ilham. The main factors are the following:

More operational effectiveness as we drive transversal programs to improve the management of working capital. As an example, when the crisis hit last year, we assumed that some of our 11,000 customers could experience liquidity issues or worse, so we anticipated that risk: we totally changed the way we manage credit, and our achieved record levels of operational performance with overdues of less than 2% and zero bad debts.

We took action to optimize our debt structure - with less hybrid debt and US bonds and we made additional voluntary contributions of 768 million into pension schemes in the UK, US, France, Germany and most recently Belgium. These steps alone alleviate financial and pension costs by well over 125m a year.

**Ilham Kadri:** Let me now explain where we invest.

On Capex. We are also determined to invest in our Growth. In the middle of 2020 we rapidly curtailed spend to conserve cash and we just as fast resumed investment for growth in the third quarter. Our main focus is to allocate capital with discipline, aligned to our GROW strategy. And as you heard from me during the presentation, this year you will see us Reinvest as we prepare for the rebound.

Also remember, we indicated in our GROW strategy that the appropriate level of capex is of the order of 1 to 1 to depreciation. We confirm that this is still a good indication of what you expect. At such levels, half of our capex is targeted on growth, and of that the majority is directed at our G cluster and its growth platforms, and a further 300millions in research and innovation. This implies that we are investing in our future at almost twice the level of dividends.

**6. I read with interest your integrated annual report, and welcomed your analysis on the main risks. In these times of rapid change, how do you make sure that you anticipate and handle such matters properly?**

**Ilham Kadri:** Risk management is indeed critical: it underpins the very notion of sustainable value creation.

Effective risk management requires clear processes that ensure that known and emerging risks are identified or anticipated and that steps are taken pro-actively at every level of the organization. At Solvay, the process is a bottom-up one, starting with the businesses, facilitated by our internal audit team and approved by our executive leadership team, submitted, debated and endorsed by the Audit Committee and the Board. Indeed the audit Committee and the full Board contributes to the determination of risks and oversees progress every year.

The way we approach this topic is set out on page 47 through 49 of our annual report and we also describe the main risks and the progress that is being made in respect of each. To your point, though the world is changing. For example, you will note the reference to conducting research in respect of PFAS on page 52, and we also refer to the Regulatory Framework for Chemicals sustainability as an emerging risk in Europe.

You will not have seen such references in previous years, which is precisely my point: effective risk management is all about understanding known or expected risks and responding in a timely and effective manner.

One more thing, at the risk of stating the obvious: we never predicted or prepared for the challenges caused by last year's crisis. It was not a specific main risk in ERM matrixes. But this did not prevent Solvay from quickly putting into practice business continuity plans that ensured we kept operating safely and effectively. Indeed, not a single Solvay manufacturing site was shut down as a result of the sanitary crisis.

And this is precisely the role of management: respond timely and with agility to unexpected circumstances. As the Chairman said in his opening remarks, I confirm that the interaction between the Board, the senior

leadership allowed us to do just that and let me also thank our workforce who has been critical in our success.

Looking forward, these experiences also helped us to further improve our risk management plans.

7. **It seems that every company we read about these days is talking about ESG, many are racing towards what they call “Net Zero”. Is your Solvay One Planet strategy taking things too far, perhaps at the expense of future profits? / is it the same as everyone else?**

**Ilham Kadri:** We understand the concerns behind this question: there are certainly companies—indeed, entire sectors—whose future margins and viability are at odds with carbon neutral goals.

At Solvay, Profits and Planets are not in contradiction. Some investors advocate more sustainability, but want also the returns it comes with. And not only do we hear you, but this is my conviction. Sustainability has to be good for the planet, the people and the pocket!

Now, as I noted in my opening remarks, climate concerns are strong demand drivers for our large number of sustainability solutions. Look at EV, H2 solutions. Our mission is to replace metal in any object: be it a car, a plane, you e-bike; at lower TCO, you will consume less fuel and release less CO2: this is a perfect definition of clean mobility. We do it!

This is why our sustainability story is a positive one—and not only a story of how we will reduce our negative impacts.

Listen as I said earlier, our GROW strategy, our One Planet roadmap and our Purpose all come together to create that sustainable responsible value: A value that can be shared with all.

With our sustainability roadmap we raised the bar in several ways: not only do we aim higher in tackling climate change, but we also extend our focus to many important elements such as resources and better life. We will continue to do our part to heal the planet and society at large, building circularity and decarbonising our operations.

So in conclusion, no we are not going too far. I am an optimist and a scientist by background. I believe in science. And Solvay will continue doing good for the planet, the people and the profit.

8. **How do you deal with those parts of your business that don't quite go with the Solvay One Planet ambitions that you set out? Will you sell such businesses, close them down? What can we expect?**

**Ilham Kadri:** This is an important question in a world which never stops changing.

Expectations from the communities we serve are changing and what was fine yesterday may not be fine tomorrow. All our businesses are coherent with the Solvay One Planet roadmap. This is because every business benefits from the rigor and the standards that we expect as a science based company. We have a framework called SPM (Sustainable Portfolio Management), all businesses follow without exception. Finally, we would not knowingly sell a business in the knowledge that the acquirer would be less responsible than Solvay.

9. **How did you manage the impact of Covid at Board level?**

**The Chairman:** The first thing you do when you undergo a change like that is to make sure that you are able to function. So first, we asked ourselves the question: do we have the technology to be able to have board meetings with management? It's a very basic question. Can we function collegially as a board while being remote?

The second relates to the fact that, as Board members, we are human beings. So when you enter in a crisis like Covid, there is a lot of anxiety, there is a lot of unknown and what we try to do also is really to make sure that the board members were comfortable with the way of working with the board, with the management also.

We set up the processes, having boards meetings, information formal and informal, and making sure that everybody is aware and well informed about the situation, about the decisions to be taken, and that we're

available through the technology and the contacts that we have between ourselves, to continue functioning positively on the board and continue to support the management and the whole organization to go deep through the crisis.

And not forget that there is the crisis. So we also had to ask ourselves what do we need to be confident that we can go through the storm? And continuing the role of the strategy and looking forward to the Solvay and building the Solvay of the future. The ability to balance those two pillars was absolutely important.

**10. Pouvez-vous dire si l'avoir obtenu l'an dernier pour le Mont des Arts pour y pouvoir organiser l'AG Solvay sera encore valable l'an prochain?**

**The Chairman:** Nous avons effectivement précisé l'an dernier qu'il était possible d'utiliser un avoir pour la tenue d'une prochaine AG ou d'un autre évènement quel qu'il soit. C'est toujours valable, et nous n'avons pas de limite dans le temps.

**11. Où en est le projet de construction de nouveau siège social ?**

**Ilham Kadri:** En octobre 2019, nous avons arrêté le projet de construction d'un nouveau quartier général à Bruxelles et d'un autre à Lyon. Nous avons par ailleurs bien fait, car nous avons arrêté ça, juste avant le début de la pandémie.

Nous avons décidé à la place de moderniser les installations existantes, afin de mieux utiliser notre infrastructure actuelle.

Ce faisant, nous tenons compte maintenant du fait que le travail à distance et le "travail mobile" auront un impact permanent sur la façon dont nous interagissons; et la configuration de nos espaces de travail sera adaptée pour favoriser l'amélioration des connexions et de la créativité, en renforçant notre désir de co-création et collaboration.

Ces mesures ont permis d'éviter de dépenser inutilement plus de 350 millions d'euros. Avec le recul, c'est probablement l'une des meilleures décisions que nous avons prises juste avant le début de la crise.

**12. Et pour Bruxelles, qu'est-ce que cela veut dire concrètement?**

**Ilham Kadri:** Une nouvelle vision 2025 du campus de Bruxelles.

Les principes de base seront d'améliorer l'interconnexion entre tous les bâtiments, d'être orienté vers les entreprises, d'être abordable, numérique et de réduire l'empreinte environnementale.

Concrètement, une partie du campus serait - la partie Nord- pour celles et ceux qui connaissent serait consacrée à un espace proposant un environnement collaboratif pour favoriser le SWOW the New Way of Working et stimuler les échanges, l'agilité et la créativité. Alors que la partie Sud serait un espace ouvert pour accueillir les start-ups proches de nos domaines d'activité. Nous sommes en effet ancrés dans l'écosystème de l'innovation dans la région et cela serait une très belle vitrine pour aussi attirer de jeunes talents.

**13. Solvay is bezig energie op basis van steenkool uit te faseren omdat het schadelijk is voor het milieu. Wat is het standpunt van Solvay ten aanzien van kernenergie? Gaat Solvay daar ook mee stoppen?**

**Ilham Kadri:** Your question is intriguing because nuclear energy is not a direct source of energy for us, beyond those provided from the grid in different countries. Now, we do not comment on the energy mix strategies that are decided by different countries as energy policies, strategies and context are different from one country to another.

At Solvay, we fully support all steps that promote energy decarbonisation, in line with our commitments to the Paris Accord, and I remind you that nuclear Energy does not contribute to global warming. You will have seen our 28 projects based on Biomass, Solar and Wind. The US Jasper farm is just an amazing example of what we are doing.

**14. De nettoschuld van Solvay is in 2020 verminderd met €1,2 miljard. Wat is de doelstelling voor verdere vermindering van de nettoschuld? En waar zijn we na een kwartaal in 2021 ?**

**Karim Hajjar:** As you have heard both Ilham and the Chairman say, net debt was reduced by 1.2bn reflecting record operating free cash generation of nearly 1bn, proceeds from M&A of 1.2 bn, offset by dividends of 387 million and voluntary pension contributions of 522 million.

Since 1st Jan 2021, net debt was slightly reduced as cash generation of 282m in Q1 2021 financed interim dividends of 155 million and voluntary pension contributions of 102 million.

Cumulatively, Solvay made additional voluntary contributions to its pension schemes of 768 million since December 2019, which enhances our credit strength and further improves cash generation.

Further, I agree with your assessment that Solvay is indeed strongly positioned if there are bad storms. One way to measure this is to consider our liquidity reserves - these comprise the combination of cash balances together with committed but undrawn credit facilities. Liquidity reserves have exceeded 4 billion since mid 2020.

You can be assured that we intend on preserving an Investment grade rating. We were appreciative of the fact that on 7 March this year Moody's recognized Solvay's progress with its announcement that stabilized our rating at Baa2, making us amongst the first companies to return to ratings stability after the wave of sector-wide Covid-related negative rating actions in 2020.

**15. Solvay verkleint zijn voetafdruk door het verlaten van zijn positie in niche-markten voor technische chemicaliën. De voetafdruk van Solvay wordt zodoende dus kleiner, maar die van de koper groter. Waarom streeft Solvay er niet naar om de voetafdruk van die activiteiten daadwerkelijk te verkleinen?**

**Ilham Kadri:** As I said during my speech, we are upgrading our portfolio and divesting businesses if they are not core and if we believe we are not the right owner. We shall continue simplifying our portfolio wherever possible and when it creates value. With the hindsight that businesses that are sold have been optimized as much as possible and that the value that is generated is good enough, as I do not feel today we are forced sellers.

I can also confirm that since I joined the company, we took the time to optimize businesses that have been sold so far (last year 6 businesses). We welcome the reduction of our footprint, which simplifies our fragmented and large industrial footprint, and simplifies our organization.

We agree with you that we are a responsible operator of businesses, but we would guard against assuming that acquirers of businesses are not responsible. Our approach is to maximize value creation responsibly, which entails deciding on a case by case basis whether we are the natural owners and the best managers of a particular business. There is no taboo in this company.

**16. Quand la société Solvay va-t-elle reconnaître et réparer sa faute dans le litige des sept années 91-98, des rentes complémentaires gelées, alors que le Président du Conseil, Jacques Solvay, avait donné bien avant au Comité Exécutif, instructions de revalorisations régulières ? L'engagement avait été transmis au personnel par la hiérarchie.**

**The Chairman:** Le sujet n'est pas nouveau; il remonte en fait à la mise en œuvre du nouveau règlement de retraite des cadres il y a plus de 30 ans, et plus précisément au sujet de la « revalorisation des rentes de retraite ».

La position de Solvay sur la question des pensions a été clairement exprimée à Mr Weekers y compris en lui indiquant par écrit l'existence d'une décision du Comité exécutif de 1989, qui confirme l'absence d'engagement de revaloriser les rentes de retraite.

Depuis lors, au cours de toutes ces années, il a eu de nombreux contacts, adressé de nombreuses lettres aux dirigeants du Groupe, passés ou présents, ainsi qu'à son Conseil d'Administration, qui a été tenu informé.

En février 2019, Mr. Weekers m'a informé par lettre mettre fin à cette question de son côté.

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Nous considérons dès lors qu'il n'y a pas de sujet de "réévaluation des retraites" chez Solvay.



## **QUESTIONS - PART 2**

1. **Solvay has a residual activity in hydraulic fracturing for shale oil. What is the company's objective with this activity?**

**Ilham Kadri:** Remember that in Q3 2019 we had to run an impairment test on the Oil&Gas activity due to the significant downturn in the industry. And you may remember, when I joined the company, we were very open and transparent with Karim and the team during our earnings calls, that this business is in a turnaround mode and we're going to fix it.

We acted decisively by changing management and embarking on a recovery plan that focused both on innovating to regain market share and on cutting costs. Despite our determination to turn around the performance, our expectations from a realistic recovery plan is that future expected performance can no longer support the asset values on our balance sheet. So rather than hope for the best, we've faced up to today's reality.

As a reminder the Oil&Gas business represents less than ~3% of group sales today.

Since then, we have been exploring various strategic options, but no additional news to share yet.

2. **The share price is finally back at 115€ after staying a long time below 100€. Why such a decrease? skepticism?**

**Ilham Kadri:** In 2020, many of our businesses were impacted by the Covid crisis which impacted key markets such as automotive and aerospace, which represented about 25% of the group sales at the beginning of the crisis.

That said, we remained focused on executing our GROW strategy and creating value for shareholders and on what we can control. And what we control is costs, cash and customers. And we delivered record FCF, almost 1 billion, and increased and accelerated our cost delivery. This supported the upward movement in the share price in the fourth quarter.

We are 9% above Covid-19, but again we'll never be totally satisfied. And the strategy is just to continue. This is a re-rating story, and I'm confident that the best is yet to come, even in the context of our share price.

3. **Solvay seems to me, through its products, to be in favour of 5G. Don't you think that this digital transformation could be detrimental to health, biodiversity and the environment? The French government has decided to apply the precautionary principle and to demand additional expert assessments. What do you think about it?**

**Ilham Kadri:** The electronics market overall is an important market for Solvay: today it represents about 7% of Group sales and 13% of Materials. The advent of 5G technology could have a tremendous impact and benefits on a wide range of industries.

Solvay is ready to tackle this technical challenge in particular with our broad portfolio of high-performance materials. We circle the 5G, not only from the product point of view which goes to your smart devices but also in the cleaning of semiconductors, etc. So we are really, essential in the value chain.

And of course we do all of our developments with sustainability in mind; it means that we keep a proactive monitoring of the latest fact based and scientifically backed information available regarding the value chain advantages and drawbacks to adjust our strategy and actions.

I believe that we can still find a way to combine digital transformation with sustainability. I even believe that we can find a way to leverage digital transformation to support the ecological transition.

Regarding the French government, we do not comment on national decisions and regulations.

4. **Treasury shares: what percentage of the capital as of December 31? what will you do with it? Cancel? Propose Optional dividend in shares? In some companies, shareholders can choose to receive the dividend either in cash or in shares. Where do you stand?**

**Karim Hajjar:** As indicated on page 82 of the Annual Report, we had 2.7 million shares at the end of 2020, or 2,6% of capital. We hold these shares to hedge our share based incentive programmes.

At this stage, the payment of dividends in shares has not featured in our practice. There are three reasons. First, we understand that shareholders welcome receiving cash. Second, we are also mindful of the dilutive consequences of issuing new shares. Finally, we are also mindful that an optional dividend may be unfriendly for some shareholders, due to a lack of cash flow on which to levy withholding tax.

Many things are possible, though as you would expect one would require compelling reasons to change what is after all a well-established and an appreciated practice.

5. **J'ai lu / j'entends qu'un "pilier" Mme Evelyn du Monceau quitte le CA. Je la regretterai, mais souhaite la bienvenue aux remplaçants. Cependant je propose déjà de l'inviter à l'AG de 2022 - qui (du moins je l'espère !!) sera à nouveau avec présence physique - pour pouvoir la remercier de son travail et lui dire "au revoir" correctement.**

**The Chairman:** C'est certain. Il s'agit d'une période difficile. Bon nombre d'administrateurs et membres du personnel ont quitté le Groupe sans que nous ne puissions les remercier lors d'un événement en présentiel. Nous espérons pouvoir organiser cela prochainement, que ce soit au niveau du Conseil d'administration ou de l'assemblée générale.

J'en profite pour une nouvelle fois remercier Evelyn de Monceau.

### **QUESTIONS - PART 3**

**Ilham Kadri:** As a 160-year old science-based company with sustainability at our core, we are focused on contributing to the production of solutions and materials that benefit society. For us, legal requirements are the floor, never the ceiling, and we strive to exceed the standards required of us as science and technology evolve.

When I joined Solvay in 2019, I realized we could turn ESG issues into opportunities for us – something that drives us in a positive way. And this is the essence of Solvay One Planet and our G.R.O.W. strategy.

How are we doing it? As you have seen in my presentation earlier today, our products provide solutions to many of the world's most pressing policy problems. And because these solutions reach our customers and our customers' customers, we can have a vastly greater positive impact on the planet while delivering strong financial performance. That's what the G.R.O.W. strategy is all about.

Like our peers in the chemical industry, it is our job to use science and innovation to constantly improve our environmental footprint. To share a few examples... Recently, in West Deptford, New Jersey, we launched a new polymerization technology, which does not require the use of fluorochemical process aids from the PFAS family of compounds. With these innovations, we are anticipating the future needs of our customers and end-users to become more sustainable.

Another example as we discussed earlier is our Rheinberg Soda Ash plant in Germany, where we are phasing out the use of coal to Biomass, making it the lowest Soda Ash CO<sub>2</sub> emitting plant in the world.

Now turning to our Soda Ash production.

Soda Ash is mainly used to produce glass - which for example insulates your houses - and sodium bicarbonate - commonly known as baking soda - which is utilized in food, industrial and marine flue gas treatment.

To produce Soda Ash you need limestone, salt and water. Limestone is a naturally occurring raw material and is completely non-toxic. The Soda Ash process produces a discharge of inert powdery limestone and other natural materials, like gypsum and sand. This discharge is also non-toxic and not dangerous. It is also important to note that Solvay does not use or add heavy metals in its production of Soda Ash. Limestone, like many types of rock or stone, naturally contains traces of heavy metals, but those remain imprisoned in the solid state of the limestone and cannot be absorbed by living organisms, including people and fish.

Our Soda Ash process in Rosignano is undertaken in full compliance with EU and Italian regulations, as well as our own high standards for health, safety and environmental protection. Consistent with our goals to go above regulations, we have made significant investments of more than 400 million Euros in Rosignano over the past 20 years. These have helped us to decrease freshwater consumption, lower energy usage, reduce emissions, and increase recycling.

To share a few data points here:

- Back in 1997, Rosignano converted from oil to gas, ahead of any climate regulation. Solvay at the time was among the first to use gas-cogeneration to produce steam as a most efficient technology.
- More recently, in 2018, we spent 40 million euros on a high-efficiency cogeneration power plant that allowed us to cut emissions further, by 40%, while producing the same amount of steam.
- In 2019, we built a new plant for the capture, purification and liquefaction of 40 Kilotons per year of CO<sub>2</sub> released by our plant. That captured CO<sub>2</sub> can now be reused in our bicarbonate production process, or sold in the open market. Before that, liquefied CO<sub>2</sub> needed to produce bicarbonate was purchased and transported from the north of Italy, at a rate of 20 trucks a week. This is a great example of a circular economy.
- Over the past decade, we have reduced freshwater intake by 20%.
- Since 1999, we reduced our usage of well water from 3.7million m<sup>3</sup> to less than 1.3 millions today, as we transitioned to using recycled water from the local municipal wastewater treatment plant. This is huge and another example of circularity!

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- Historically, in addition to Soda Ash, Solvay produced Chlorine at the Rosignano facility up until 2015 when the Chlorine business was divested. The business abandoned the use of mercury electrolysis in 2007, which was the standard process for Chlorine production at that time, and this was done 10 years prior to the EU requirements. This is public knowledge, closely monitored by the authorities and scientific bodies.

Turning now back to the Soda Ash production process. There are several reference techniques to dispose of non-toxic and non-dangerous substances from Soda Ash operations.

Implementing the EU's framework for Best Available Techniques (or BAT) depends on the unique characteristics of each geographic location.

Throughout the process to renew our permit at Rosignano, Italian regulators, the IPPC Committee (local, regional and national authorities) decide on the best available techniques, based on a scientific assessment. They assessed that discharging these natural materials into the sea is presently the best technique for this location. This decision takes into account that the underwater currents spread the non-toxic effluents onto the seabed so that it does not accumulate, as required by BAT. Furthermore, some limestone flows back onto the shore and on the beach, which helps to stabilize the local coastline against natural erosion, which continues to be a challenge for the Tuscany coast line.

Both we and the regulators monitor every step of this process, as do independent academic institutions.

- The Regional Agency for Environment Protection in Tuscany (called ARPAT), reviews the bathing conditions between May and September: once a month on water conditions, sand cleanliness and microbiology.
- Annually, ARPAT checks water and ecological status.
- The renewal of Solvay's license to operate this facility is conditioned on the undertaking of an independent and in-depth study, every two years, of any impact the facility's operations may have on the marine environment off the coast of Rosignano. The most recent study was concluded in November 2020, showing no impact on water quality resulting from Solvay's facility.
- Every 12 years, there is a permit renewal, and together with the authorities, we review the Best Available Techniques. We remain in regular dialogue with the authorities, to align the IPPC permit to take into account any new European standards.
- We also monitor gas emissions and discharges consistent with our IPPC permit. Every 4-6 months, we analyze the results and send them to the Ministry of Environment and ARPAT.

Independent scientific research demonstrates that the water quality and environmental conditions are safe and consistent with the quality of the rest of the Tuscan coast, and in line with European Quality Standards, as you can find on our dedicated Rosignano page on our website ([www.solvay.com/en/rosignano](http://www.solvay.com/en/rosignano)).

1. **What is the amount (expressed in thousands tons) of suspended solids discharged into the Mediterranean Sea in FY2020 at Rosignano's soda-ash factory? Please provide the same figure also for FY 2019 and 2018 for comparison purposes.**

**Vincent De Cuyper:** The suspended solids -- which are inert, natural materials, composed of the same limestone, gypsum, sand and sea water we take out of the facility -- are discharged in accordance with the IPPC permit. The amount discharged are:

2018= 241 KT Suspended Solid/yr

2019= 229 KT Suspended Solid/yr

2020= 218 KT Suspended Solid/yr

2. **What is the total amount expressed in kilograms of (a) arsenic and compounds, (b) boron and compounds, (c) chromium and compounds, (d) nickel and compounds, (e) lead and compounds, (f) zinc and compounds; (g) mercury and compounds discharged into the sea at Solvay's factory in**

**Rosignano in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

**Vincent De Cuyper:** To produce Soda Ash you need limestone and salt. Limestone is a naturally occurring raw material. It is completely non-toxic even if it contains naturally occurring trapped traces of heavy metals. The Soda Ash process implies a discharge of inert powdery limestone and other natural materials, like gypsum, sand, dispersed in seawater. Solvay does not use or add heavy metals as part of its industrial process. Limestone, like many types of rock or stone, naturally contains traces of heavy metals, but those remain imprisoned in the solid state of the limestone. They cannot be absorbed by living organisms, including people and fish.

There are different analytical methodologies (E-PRTR, IPPC) and I will focus on the E-PRTR because data are publicly available:

- the E-PRTR report does not differentiate between the 'state' in which the heavy metals are released. It does not distinguish between "free" heavy metals directly released and the harmless state of heavy metals that are naturally available and 'embedded' in minerals.
- As an example, "Arsenic and compounds (as As)", as it is reported in the E-PRTR, means that every discharged compound containing arsenic is expressed as free arsenic (as if it were released under this state, which is not the case).
- Regarding Rosignano - at least 90% of the heavy metal quantities mentioned in naturally occurring in the limestone from the quarry. In this form, the heavy metals are inert and harmless for people and the environment. The other 10% sources of heavy metals are salt brine, coke and anthracite as per European BAT/BREF reference document.

**Public Data - Heavy metal amounts discharged according to E-PRTR methodology**

<b><u>Compound</u></b> (Kg/yr)	2018	2019	2020
Arsenic and compounds (as As)	2416.7	1493.0	1470.0
Cadmium and compounds (as Cd)	153.6	122.2	21.0
Chromium and compounds (as Cr)	2613.5	131.2	342.0
Copper and compounds (as Cu)	1074.8	1360.4	1244.0
Mercury and compounds (as Hg)	42.4	41.0	27.5
Nickel and compounds (as Ni)	1568.0	2865.5	2024.8
Lead and compounds (as Pb)	8014.1	5679.87	4101.0
Zinc and compounds (as Zn)	20856.4	15675.2	15387.74

The Tuscany Environmental Agency (ARPAT) is controlling the quality of the seawater:

- They check the possible free heavy metals content in discharge effluents on pre-filtered samples (as well as the seawater).
- The contents of heavy metals (Mercury, Cadmium, etc.) are in line with the rest of the Tuscan coast.

As the Rosignano process is discharging only inert effluents, and to allow a proper scientific based comparison, I will show a comparative table published by ARPAT in 2019 comparing Rosignano with the rest of the Tuscan coast.

Heavy metals at Rosignano are in line with the rest of the coast. For mercury you will not find Rosignano in the table because the situation is classified as “good” for water chemical state.

**Tabella 5.14 - Concentrazioni medie di cadmio, nichel e piombo - Anno 2019**

Corpo idrico	Descrizione	Cadmio µg/L	Nichel µg/L	Piombo µg/l
		SQA-MA: 0,2 µg/l	SQA-MA: 8,6 µg/l	SQA-MA: 1,3 µg/l
Costa Versilia	Mar. di Carrara	< 0,05	< 1	< 0,4
Costa del Serchio	Nettuno	< 0,05	< 1	< 0,4
Costa Pisana	Fiume Morto	< 0,05	2.5	0.5
Costa Livornese	Antignano	< 0,05	1.1	0.5
Costa Rosignano	Rosignano Lillatro	< 0,05	1.2	0.5
Costa del Cecina	Mar. Castagneto	< 0,05	1.4	0.4
Costa Piombino	Salivoli	< 0,05	1.2	< 0,4
Costa Follonica	Carbonifera	< 0,05	1.6	< 0,4
Costa Punt'Ala	Foce Bruna	< 0,05	1.7	0.5
Costa Ombrone	Foce Ombrone	< 0,05	< 1	< 0,4
Costa Uccellina	Cala di Forno	< 0,05	1.6	< 0,4
Costa Albegna	Foce Albegna	< 0,05	1.3	< 0,4
Costa Argentario	Porto S. Stefano	< 0,05	1.4	< 0,4
Costa Burano	Ansedonia	< 0,05	< 1	< 0,4
Arcipelago Isola d'Elba	Elba Nord -Elba Sud	< 0,05	1.3	0.4
Arcipelago Isole Minori	Giglio- Montecristo- Capraia	< 0,05	< 1	< 0,4

### **Mercury and metals.**

The concentration of mercury in the waters of the Tuscan coast has exceeded the Environmental Quality Standard - Maximum Permissible Concentration (SQA-CMA = 0.07 µg / l) in four stations, two of which, however, are compliant on the basis of the natural background values reported in the DGRT 264/18. The water bodies that will be classified in a “not good” chemical state are Costa Pisana and Costa del Cecina (table 5.13)

Tabella 5.13 - Concentrazioni di mercurio eccedenti rispetto al SQA-CMA e ai valori di fondo - Anno 2019

Corpo idrico	Stazione	Data di campionamento	Mercurio µg/L		
			Concentrazione	SQA-CMA D.Lgs. 172/2015	Valori di Fondo DGRT 264/2018
Costa Pisana	Fiume Morto	01/07/2019	0.12	0.07	0.09
Costa del Cecina	Mar. Castagneto	04/07/2019	0.14	0.07	0,04
Costa Ombrone	Foce Ombrone	17/07/2019	0.23	0.07	0,26
Costa Albegna	Foce Albegna	06/05/2019	0.16	0.07	0,26

As indicated in table 5.14, there are no exceedances of environmental standards for any of the other metals included in table 1 / A of Legislative Decree 172/15.

**3. How many millions of cubic meters of sea-water was pumped from the Mediterranean Sea into Solvay's factory in Rosignano in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

**Vincent De Cuyper:** We use sea water as cooling water for the industrial complex (including not only Solvay Soda Ash but also other companies) and for some process use.

Our goal at Solvay is to reduce our fresh water intake, hence leveraging first the sea water (almost 90% of our consumption), then recycled raw water and surface water (about 10%) and finally the underground/drinking water (1%). We reduced our consumption of fresh water by 20% over the decade and reduced the total consumption of high quality groundwater by 66% - providing the balance to the local communities water network.

Water discharged by Solvay plants & Inovyn plants according to IPPC permit (Rosen, Roselectra, Ineos have separate discharge points) is: process water, rain water, and non-contacting cooling water.

Sea water pumped from the sea to the Industrial park:

2018=95.00 Millions m<sup>3</sup>

2019=90.54 Millions m<sup>3</sup>

2020=81.86 Millions m<sup>3</sup>

Sea water pumped from the sea to Solvay's plant (excluded Inovyn, Ineos, Rosen, Roselectra):

2018=69.40 Millions m<sup>3</sup>

2019=64.53 Millions m<sup>3</sup>

2020=56.90 Millions m<sup>3</sup>

**4. How many millions of cubic meters of water excluding sea water was used at Solvay's factory in Rosignano in FY2020 providing break-down by source and usage? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

**Vincent De Cuyper:** As I mentioned earlier, we are committed to reducing our fresh water consumption, leveraging first recycled water, then sea water, raw water and underground water. We reduced our consumption of fresh water by 20% over the decade but also our consumption of high quality groundwater by 66%, providing the balance to the local communities water network.

Let me explain a bit of history and give you an illustration of our water efficiency program. Back in 1999 we used 3.7 Million cubic meter per annum of underground water and reduced it to 1.3 Million cubic meters per annum by switching to recycled water (Aretusa). In 2006, Solvay created (and owns 10% of) a consortium called Aretusa managed by a public company and using water coming from the municipality waste water plant. This is one of the best examples of circularity using a city's grey water to feed industrial

operations. As from that date, our intake of underground water has been consistently under 1 Million cubic meters per annum.

		2006	2018	2019	2020
<i>Aretusa (recycled water)</i>	<i>Km3/y</i>	2,546	2,945	3,273	3,507
<i>Raw water (Lake, Cecina River, Fine River, bacin A1)</i>	<i>Km3/y</i>	6,264	5,165	4,792	4,898
<i>Well water</i>	<i>Km3/y</i>	1,337	504	748	787
<b>Total industrial consumption</b>	<b>Km3/y</b>	<b>10,147</b>	<b>8,614</b>	<b>8,813</b>	<b>9,191</b>
<i>Well water for internal civil consumption</i>	<i>Km3/y</i>	526	122	117	219
<b>Total industrial + civil consumption</b>	<b>Km3/y</b>	<b>10,673</b>	<b>8,736</b>	<b>8,930</b>	<b>9,410</b>

5. **How many millions of cubic meters of wastewater was discharged into the Mediterranean Sea (at discharge point called 'White Hole' or 'Fosso Bianco') at Solvay's factory in Rosignano in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

**Vincent De Cuyper:** Let me first clarify that the water discharged is not considered as a "waste" from a regulatory standpoint.

Water discharged by Solvay & Inovyn plants according to the IPPC permit (Rosen, Roselectra, Ineos have separate discharge points) is process water, rain water and non-contacting cooling water.

The metric cube figures are:

2018= 81.39 Millions m<sup>3</sup>

2019= 79.19 Millions m<sup>3</sup>

2020= 76.82 Millions m<sup>3</sup>

6. **What is the average concentration expressed in milligram per liter of (a) arsenic and compounds, (b) boron and compounds, (c) chromium and compounds, (d) nickel and compounds, (e) lead and compounds, (f) zinc and compounds and (g) mercury and compounds released into the sea at the discharge point 'Fosso Bianco' in FY2020 at Solvay's factory in Rosignano in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

**Vincent De Cuyper:** As mentioned earlier, Solvay does not use or add heavy metals as part of its industrial process. Limestone, like many types of rock or stone, naturally contains traces of heavy metals, but those remain imprisoned in the solid state of the limestone and cannot be absorbed by living organisms, including people and fish.

To answer this question, we have prepared some calculations comparing 2018, 19 and 20 and indicatively we added the IPPC Threshold.

**Table of heavy metal concentration discharged at the open channel (SF) dividing the E-PRTR amounts by the discharged water**

Compound (mg/l)	IPPC Threshold (SF)*	2018	2019	2020
Arsenic and compounds (as As)	≤0.5	0.0297	0.0189	0.0191
Cadmium and compounds (as Cd)	≤0.02	0.0019	0.0015	0.0003
Chromium and compounds (as Cr)	2	0.0321	0.0017	0.0045



Copper and compounds (as Cu)	≲0.1	0.0132	0.0172	0.0162
Mercury and compounds (as Hg)	≲0.005	0.0005	0.0005	0.0004
Nickel and compounds (as Ni)	≲2	0.0193	0.0362	0.0264
Lead and compounds (as Pb)	≲0.2	0.0985	0.0717	0.0534
Zinc and compounds (as Zn)	≲0.5	0.2563	0.1979	0.2003

\*On filtered samples

7. **Solvay's soda-ash factory in Rosignano currently (FY2020) operates under an authorization granted by the Italian Authorities (Autorizzazione Ambientale Integrata del 7 agosto 2015 - Parere istruttorio definitivo reso il 26 giugno 2015 dalla Commissione istruttoria AIA-IPPC con protocollo CIPPC-00-2015-001244). At pag. 141 of the authorization, Solvay represented the concentration for the following substances discharged into the sea with reference to FY2011:**

**Table 1**

	Flow of mass (g/hour)	Mass per liter (mg/liter)
Arsenic	185.73	0.022
Borum	44,192.43	5.2
Chromium	255.18	0.02 (0.03)
Nickel	188.93	0.022
Lead	181.45	0.02
Zinc	2,497.83	0.3

**We would like to know the equivalent set of data for FY2020 (including FY2019 and 2018 for the purpose of comparison).**

**Vincent De Cuyper:** The requested information for 2011-18-19-20 is set out below. We have made the calculations on publicly available data.

Compound	2011		2018		2019		2020	
	Flow of mass (g/hour)	Mass per liter (mg/liter)	Flow of mass (g/hour)	Mass per liter (mg/liter)	Flow of mass (g/hour)	Mass per liter (mg/liter)	Flow of mass (g/hour)	Mass per liter (mg/liter)
Arsenic	185.73	0.022	275.87	0.0297	170.43	0.0189	167.80	0.0191
Borum*	44,192.43	5.2	37,478.19	4.2	38,279.10	4.35	37,554.46	4.56
Chromium	255.18	0.02 (0.03)	298.34	0.032	14.97	0.0017	39.04	0.0045

Nickel	188.93	0.022	178.99	0.0193	327.11	0.0362	231,14	0.0264
Lead	181.45	0.02	914,85	0.0985	648,38	0.0717	468.15	0.0534
Zinc	2,497.83	0.3	2380.86	0.2563	1789.4	0.1979	1756.55	0.2003

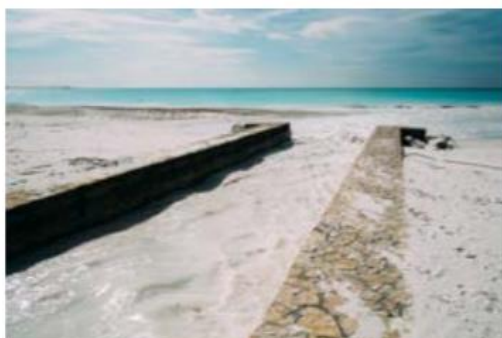
\* These values referred to the discharged amount which also includes boron from the incoming seawater

8. **With reference to Table 1 (see table in question 7), we would like to know if the reported mass per liter (mg/l) of discharges is calculated gross or net of the sea water pumped from the Mediterranean Sea into the factory.**

**Vincent De Cuyper:** Gross. The concentrations reported in Table 1 are given by the total annual discharged amounts reported according to E-PRTR rules divided by the total quantity of water discharged at the final point.

9. **What is the ratio (the “Ratio”) expressed in milligram per liter between (i) the total amount of arsenic and compounds and (ii) the total amounts of waste water discharged through the ‘White Hole’ (Fosso Bianco), net of the sea water pumped from the Mediterranean Sea into the Rodignano’s factory (in other words we would like to know the Ratio net of any dilution effect). Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**
10. **Please provide Ratio as per the above question also for (b) borum and compounds, (c) chromium and compounds, (d) nickel and compounds, (e) lead and compounds, (f) zinc and compounds and (g) mercury and compounds. Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**
23. **What would be on average the concentration expressed in milligram per litre of (a) arsenic and compounds, (b) borum and compounds, (c) chromium and compounds, (d) nickel and compounds, (e) lead and compounds, (f) zinc and compounds and (g) mercury and compounds released into the sea at the discharge point ‘Fosso Bianco’ in FY2020 net of the discharge of sea water pumped from the sea into Solvay’s factory in Rosignano in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison.**

Fig. 3: Drain Channel ‘White Hole’ (Fosso Bianco)



*[Questions 9, 10 and 23 were answered together as they related to the same subjects]*

**Vincent De Cuyper:** Let me first repeat that the effluents we discharge are not classified as waste, contrary to what the question suggests. Solvay made calculations to respond to the question and the results are compared below with the IPPC threshold:

**Unfiltered and solubilized samples + water flow rate net of non process water**

Compound	IPPC Threshold at b.1 (SP4) (mg/l) for filtered	2018 unfiltered	2019 unfiltered	2020 unfiltered
Arsenic and compounds (as As)	≤0.5	0.0313	0.0282	0.0274
Cadmium and compounds (as Cd)	≤0.02	0.002	0.0023	0.0004
Chromium and compounds (as Cr)	2	0.033	0.0025	0.064
Copper and compounds (as Cu)	≤0.1	0.0139	0.0257	0.0231
Mercury and compounds (as Hg)	≤0.005	0.0005	0.0008	0.0005
Nickel and compounds (as Ni)	≤2	0.0203	0.0541	0.037
Lead and compounds (as Pb)	≤0.2	0.1037	0.1073	0.0763
Zinc and compounds (as Zn)	≤0.5	0.2698	0.2961	0.2863

The way our operations are controlled is done, on the one hand, by controlling the heavy metals which are part of the suspended solids coming from the limestone and this is measured by the E-PRTR report. On the other hand, there are the requirements of the IPPC permit.

The table shows that all Solvay's unfiltered compound concentrations are well below IPPC thresholds on filtered effluents. This means Solvay's performance far exceeds IPPC standards.

**11. What is the average size (expressed in μ) of suspended solids deposited into the Mediterranean Sea in Rosignano?**

**Vincent De Cuyper:** The Source of data used to reply to this question is the report: "Quality of coastal marine waters facing Solvay Rosignano site"-ARPAT 2014

Bucci and Di Marco (ANPA - ARPAT 2001) note the following: "*The total suspended solids released into the sea have a particle size between 10 and 300 μm, with an average diameter of 20 μm and settle on the bottom with a speed between 1 and 3 mm / month depending on the particle size.*"

12. **Can Solvay offer a (credible) counter argument that according to abundant academic research the dispersion of heavy metals in sediment from a grain is a function of the size of the grain in the sense that higher heavy metal concentrations are associated with smaller grain size particles thus making completely groundless Solvay's argument that "limestone naturally contains traces of heavy metals, but those remain imprisoned in the solid state of the limestone and cannot, in any event, be absorbed by living organisms, including people and fish"?**
13. **Adding context to the question, let's take 1 m<sup>3</sup> of limestone which contain a certain mass of heavy metals and let's cut into a 10<sup>18</sup> grain of 1 μ<sup>3</sup> which altogether will (obviously) contain the same mass of heavy metal of the original 1 m<sup>3</sup> of limestone: according to Solvay's scientist, what is the probability that fish will eat that 1 m<sup>3</sup> of limestone and the 10<sup>18</sup> grain of 1 μ<sup>3</sup>? Given that the dispersion of heavy metals increases as the grain become smaller (which a smart primary student can easily understand) does Solvay believe that the release of heavy metals from 1 m<sup>3</sup> of limestone is greater or smaller than the release from the 10<sup>18</sup> grain of 1 μ<sup>3</sup> grains?**

*[Questions 12 and 13 were answered together as they related to the same subjects]*

**Vincent De Cuyper:** First, we have not received and reviewed the abundant research materials the question is referring to.

The suspended solids are inert, whatever their size may be. Solvay does not use or add heavy metals as part of its industrial process. Limestone, like many types of rock or stone, naturally contains traces of heavy metals, but those remain imprisoned in the solid state of the limestone -- at levels lower than Environmental Quality Standards -- and cannot be absorbed by living organisms, including people and fish. The water quality - regularly tested by the authorities and technical monitoring agencies - is completely safe and consistent with the rest of the Tuscan coast.

The following table suggests that, whatever the granulometry, traces of heavy metals contained in the inert minerals (quartz, calcite,..) are inside quality standards. The table is extracted from a study of the IAMC.

Source: " Environmental analysis of the marine-coastal area in front of the Solvay-Rosignano industrial site with reference to AIA prescription N.0000177 (point 3) of 7 August 2015" (Sprovieri-IAMC-CNR-2017)

Tabella II, 20 – Caratterizzazione chimico-fisica dei solidi sospesi dello scarico con riferimento al DM 260/2010; Tab. II, 2A, Tab. II, 3B. e confronto con i dati medi annui riportati da ARPAT, 2014

SOLIDI SOSPESI SCARICO GENERALE											
Parametro	Metodo analitico	u.m.	SST 20 apr-2016	Part. Sed 20 apr-16	SST 20 giu-16	Part. Sed 20 giu-16	SST 28 sett-16	Part. Sed 28 sett-16	SQA	ARPAT (2014)	
<b>Parametri chimico-fisici</b>											
pH			7.1		9.7		9.3				
Eh		mV	46		41		82				
TSM		mg l <sup>-1</sup>	1083		1030		1675			1581	
ISM			1054		964		1619				
OSM			29		65		56				
<b>Granulometria</b>											
Sand	ICRAM. 2001	%						67			
Silt			47		55		53	16			
Clay			53		45		47	17			
<b>Mineralogia</b>											
Gesso		%					71	85			
Calcite			83		87		24	13			
Quarzo			10		4		2	1			
Halite			7		4		3				
Brucite (Mg(OH) <sub>2</sub> )					6						
<b>Metalli</b>											
Al	US-EPA 3050b; 3052; 6010c	%	0.28	0.06	0.17	0.06	0.09	0.02			
Fe			0.14	0.04	0.10	0.03	0.08	<dl			
As			9.1	2.7	6.6	3.5	4.2	1.0	12	9.1	
Cd			0.48	0.17	0.30	0.17	0.40		0.3	0.9	
Cr			14	9.0	11	5.0	13	7.0	50	7.6	
Cu			9.7	4.0	7.1	1.0	3.4	<dl			
Mn			790	93	476	79	745	92			
Ni			2.8	1.2	1.6	<dl	<dl	<dl	30	7.3	
Pb			21	8	20	8	<dl	<dl	30	39	
V			9.0	1.7	4.5	2.3	8.3	3.8			
Zn			59	5.6	20	5.4	22	3.9			
CrVI			IRSA-CNR. 2005	0.06	0.11	<0.05	0.08	0.25	<0.05	2	
Hg			US-EPA 7473	0.18	0.03	0.16	0.03	0.12	0.044	0.3	0.1

Contents and concentrations of heavy metals in solid suspended carbonates are extremely reduced and generally below values for sediment quality assessments, as documented in the table. Source of heavy metals could be from particulates generated on land, where geological background is characterized by the presence of sulphides with relatively higher values of trace metals or mixing of recent sediments with older material produced on land and whose origin is currently unknown.

Effects of potential heavy metals concentration on finer fraction of suspended matter appears irrelevant taking into account a substantial homogeneous grain size distribution of that matter and its extremely limited chemical variability.

14. **According to the Best Available Technique issued by the European Commission for the production of soda-ash with the Solvay process this is defined as “with regard to the impact of waste waters (containing suspended solids and associated heavy metals) discharged from the production of soda ash to the aquatic environment: where the final discharge is made to the marine environment (to the sea or into an estuary of a river under tidal influence, depending on local considerations), to ensure dispersion of the solids avoiding localised build-up of deposited solids” (European Commission, Integrated Pollution Prevention and Control Reference Document on Best Available Techniques for the Manufacture of Large Volume Inorganic Chemicals - Solids and Others industry, August 2007, p. 101). Provided that Solvay in Rosignano discharges waste waters from the production of soda ash directly to the marine environment, does not procure any dispersion and built up a fake Caribbean beach currently known as the ‘White beaches’ (Le spiagge bianche), has Solvay received – and from who - an authorization to dis-apply the Best Available Techniques issued by the European Commission?**

**Vincent De Cuyper:** The regulatory process is the exact opposite of the process mentioned in the question - this a matter of fact. Indeed, the IPPC Permit (standing for Integrated Pollution and Protection Control permit) is generally not issued if the authorized activity is not in line with the Best Available Techniques - BAT / Bref - of its sector.

BAT reference documents are the reference for setting permit conditions in Europe and ensure that emission limit values do not exceed the emission levels associated with the best available techniques as described in those BAT reference documents.

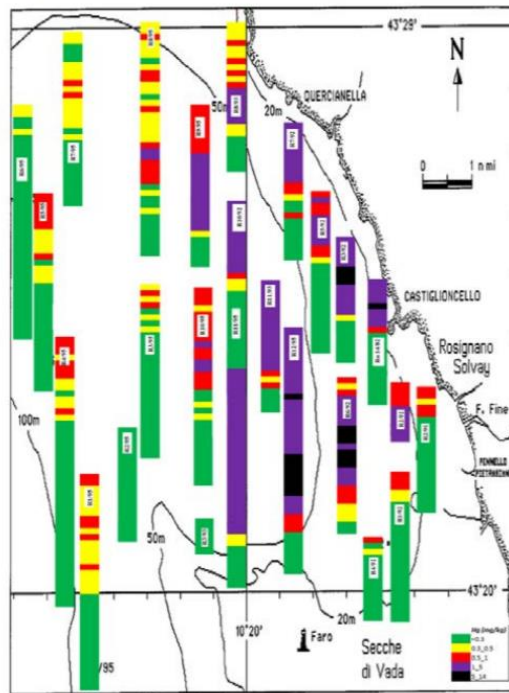
The BAT to which the question refers to permits expressly the discharge of non-toxic effluents in the aquatic environment. The BAT requires proper dispersion in order to avoid accumulation, and this is precisely what occurs in Rosignano.

There are several reference techniques to dispose of inert, non-toxic and non-dangerous substances from Soda Ash operations - and the competent independent authorities considered each of them. Implementing the BAT requires a solution to be adapted to the unique characteristics of each geographic location. Following extensive review with the competent scientific authorities, the direct discharge to the sea was determined to be the most appropriate for Rosignano. This solution takes account of underwater currents so as to ensure that the inert non-toxic limestone does not accumulate (as required by BAT) but rather spreads evenly on the seabed. It also ensures that limestone that flows back onto the shore and onto the beach indeed helps stabilize the local coastline, protecting it against natural erosion, a well-known phenomenon that is problematic along the Italian coast.

Finally, the Research Council confirmed that the dispersion is effective.

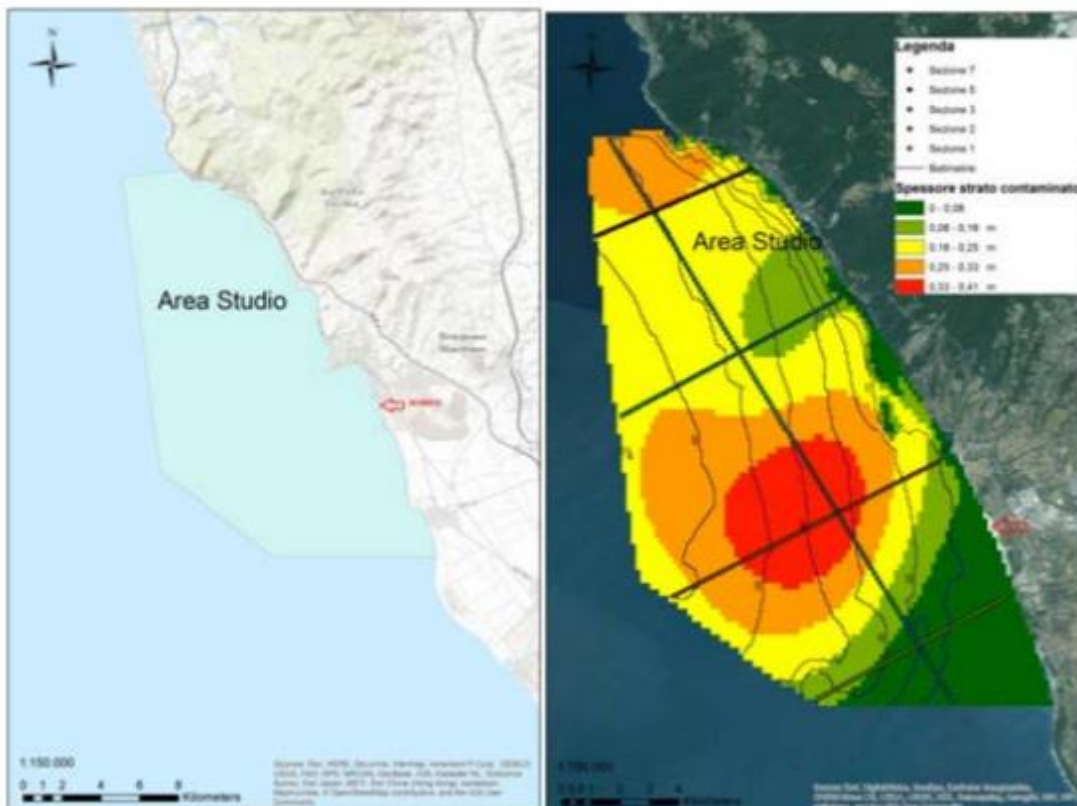
15. **A study requested by the Italian Ministry of Environment and commissioned by Solvay to the Institute for the Coastal Marine Environment (IEMC) of the Italian National Research Council (CNR), in the period November 2015 - August 2017 (which we reviewed), analyzed a coastal area affected by the discharge in Rosignano extending for 100 Km<sup>2</sup> which also contained mercury with different degrees of contamination. According to this study “sedimentary levels with different degrees of contamination have been identified along the cores, categorized here according to the Hg concentrations. Specifically, the levels with correspond to the GREEN color concentrations below 0.3 mg kg<sup>-1</sup>, that is, the Environmental Quality Standard (EQS), reported in the DM 260/2010 and in the Legislative Decree 172/2015, which we will define as the "threshold level". Concentrations higher than the EQS, but lower than 0.5 mg kg<sup>-1</sup>, therefore including the Chemical Level of Base (0.4 mg kg<sup>-1</sup>; APAT Manual 2007), correspond to the color YELLOW. The remaining colors indicate the sedimentary layers affected by gradually increasing contamination: RED (0.5-1 mg kg<sup>-1</sup>), PURPLE (1-5 mg kg<sup>-1</sup>) and BLACK (5-14 mg kg<sup>-1</sup>). The positioning on the map of the considered carrots highlights once again and effectively, an increasing coastalwide contamination gradient, in the area in front of the industrial drain and a preferential distribution of the contaminant in a north-west direction, at least up to the bathymetric of 60 m. There are also concentrations of mercury, higher than the EQS value, in the superficial sediments of all cores, although these levels correspond to the sedimentary deposition occurred after the adaptation to the D.L. 319/76” (Institute for the Coastal Marine Environment (IEMC) of the National Research Council).**

Fig. 1: map of the evolution of mercury levels in the sediments analyzed (IEMC)



(Repeat answer question 15)

Fig. 2 - Map of the thicknesses of the contaminated sediment layers reconstructed on the basis of the results reported in the studies (IEMC)



**The IEMC study also explored the cost to clean-up the contaminated sea area through a technique known as 'sediment capping' - several solutions are commercially available and among those the most used is AquaBlok® - with an estimated cost of approximately 69 euro/m2. Should this technique be applied to clean-up the area with the highest thickness of contaminated sediment layer (approximately 1/3 of the total examined area, see Fig. 3), based on IEMC figure the cost could be as high as euro 2.3 billion: we would like to know what provisions are held by Solvay to account for the potential liabilities to clean up the environmental impact of your operations in Rosignano?**

**Vincent De Cuyper:** The extract quoted from the question comes from an extremely complex study by the IAMC of over 500 pages, it is selective and, when taken out of context, it can be misleading.

The IAMC study was commissioned by Solvay in accordance with the IPPC permit. It is “*a feasibility study aimed at identifying the best design solution for the removal or containment of mercury deposits in the stretch of sea in front of the plant considering the following scenarios of suspended solids release:*

1. *current status and maximum production capacity;*
2. *in application of BAT n. 10 and of the chapters of the BRef cited therein, and that is to an appropriate positioning of the discharge such as to ensure adequate dispersion by the natural currents and to reduce to a minimum the environmental effects connected to the operation of the plant;*
3. *reduction (analysis at 70%, 50%, 30%) of the production of soda ash in the plant;*
4. *interruption of operation and zeroing of soda ash production in the plant”.*

The mercury deposits that the study analyses can be found in offshore sediments under the seabed. It should be emphasized that the Soda Ash production process never used mercury. The legacy industrial activity that lawfully applied mercury in the production process was Chlorine production, and this was common in the whole industry. This chlorine production activity started in 1940, drastically reduced mercury in the process in 1976 as a result of investments and stopped the mercury electrolysis unit in 2007, 10 years before EU requirements. That activity was divested in 2015.

Now turning to the IAMC study itself, as I already indicated, the study confirms that our Soda Ash operations, including the effluent discharge, are not only non-toxic, but that they also stabilize the shore and decisively contribute positively to the capping of the historical offshore sediment layer. The study emphasizes the following: “*Therefore, the constant emission of suspended solids from the Solvay industrial plant in Rosignano in quantities similar to those currently reported, represents an element of safety for the marine-coastal environment under examination due to production (especially in the area adjacent to the coast) of an uncontaminated sediment thickness”.*

Consistent with its mandate, the IAMC study examined all the theoretically possible ways to manage the sediment. In its final recommendations, the study states that “*the very limited availability of experimental data on similar intervention cases makes the choice of possible design solutions very complex and leads to extremely prudent assessments regarding the real benefit that the environmental system considered could actually register.”*

Based on the results of the IAMC study and considering the positive effects of the effluents discharge, to date, the authorities have neither suggested nor required any remediation measures regarding the offshore historical sediments.

In a context where our operations in Rosignano have not given rise to environmental liabilities and given that the competent authorities have not made any statements to the contrary, taking into account the requirements of International Financial Reporting Standards, there is no basis considering such matters to be liabilities, be they actual or contingent.



16. **We would like to definitively know whether it is true or not that following a letter dated 2nd of October 2017, Solvay had requested the Italian Ministry of Environment not to publish the content of the referred research conducted by the Italian National Research Council (CNR)?**

**Dominique Golsong:** Italian law authorizes a company to request the authorities treat a document as confidential for reasons related to the protection of intellectual property or industrial or commercial secrets.

In 2017, Solvay Italy made this request with respect to the IAMC study and the authorities treated it confidentially.

However, third parties who can demonstrate a legal interest may request access to a confidential document by applying to the authorities in question, which in turn must consult with the company concerned on how to address its confidentiality concerns.

We note that the shareholder asking the question has obtained access to the study without following the appropriate procedure, a clear breach of applicable law.<sup>1</sup>

In order to ensure access by all our shareholders to the full conclusions of the study, Solvay published such conclusions on its website.

17. **Has Solvay commissioned any update to the research conducted in 2017 by the Institute for the Coastal Marine Environment (IEMC) of the Italian National Research Council (CNR), in the period November 2015 - August 2017 (which we reviewed), on the coastal area affected by the discharge in Rosignano extending for 100 Km2 which also contained mercury with different degree of contaminations? Can you please make any subsequent update public?**

**Vincent De Cuyper:** The question confuses two different requirements of the current IPPC permit. The feasibility study mentioned before is a one-off exercise that was conducted in 2017. No update of this study is required nor has one been requested.

Separately, the IPPC permit requires Solvay to undertake an independent and in-depth study, every two years, of any impact the facility's operations may have on the marine environment. The most recent study was concluded in November 2020. The conclusions to both the 2020 study and the prior 2017 study were posted on Solvay's website.

18. **How many plants Solvay operates globally for the production of soda-ash (excluding mining) and whether any other factories where the final discharge of suspended solids is made in shallow water directly to the marine environment (to the sea or into an estuary of a river), without ensuring dispersion of the solids and avoiding localised build-up of deposited solids as in Rosignano?**

**Vincent De Cuyper:** We operate 7 plants that produce Soda Ash. Each plant in the European union is compliant with the applicable BAT provision on the discharge of effluents in the aquatic environment.

Contrary to what the question suggests, the BAT applied in Rosignano ensures dispersion of the effluents and avoids localized build-up. In addition, as already noted, the non-toxic limestone particles that flow back onto the shore effectively protect the coastline from the well-known erosion phenomena that affect the Tuscan coast.

19. **What are the technologies applied by Solvay in all of its other soda ash production site where the company does not discharge suspended solids in shallow water directly to the marine environment like in Rosignano?**

**Vincent De Cuyper:** Each site is using a specific technology according to the specificity of the site, in compliance with the applicable BAT. For example:

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<sup>1</sup> After the annual meeting, it has been brought to our attention that this study has become available on the website of the Italian Ministry of Environment despite Solvay's confidentiality request. As a result, we have no evidence that anything improper was done by the shareholder in connection with obtaining the study.

- Devnya Site - slurry to dikes and overflow into the river first and then into the sea
- Bernburg Site - slurry to dikes and overflow into the river
- Rheinberg Site - removal of coarse suspended solids and then slurry is conveyed into the river
- Dombasle Site - slurry to dikes and overflow into the river
- Torrelavega site - removal of coarse suspended solids and then two 8.8 km pipelines entering into the sea for 660 m and reaching a depth of 14 m

Following discussions with authorities, the discharge to the sea was independently and scientifically determined to be the best for Rosignano, given that underwater currents ensure that the non-toxic limestone does not accumulate (as required by BAT), but rather spreads on the seabed and that the limestone that flows back onto the shore and on the beach helps stabilize the local coastline against natural erosion. In addition, as noted by the 2017 study, the effluents provide an effective natural cap for the offshore sediments.

**20. What is the cash conversion of soda-ash production in Rosignano factory relative to soda-ash production facilities in France, Germany and Bulgaria, where suspended solids are disposed through settling ponds?**

**Karim Hajjar:** Any disclosure of cash conversion for any individual site is commercially sensitive and detrimental to Solvay's interests.

The decision whether to utilize settling ponds is unrelated to any financial consideration. Rather, the choice is driven by the specific characteristics of the site. In the case of Rosignano, again, the discharge technique that we apply is considered appropriate under BAT and by us because there is dispersion and the natural materials contained in the effluents contribute to the protection of the coastline.

Solvay has made considerable investments over time to constantly improve the sustainability of Rosignano. In the past three years alone, Solvay's investments in Rosignano, exceeded €50 million. In total, Solvay has invested on the Site over the last 20 years around 400 M€. The facts provide clear evidence of Solvay's commitment to such matters.

**21. Solvay claims to be "at the service of the planet" and is a signatory of United Nations Global Compact - including principles such as "businesses should support a precautionary approach to environmental challenges", "businesses should undertake initiatives to promote greater environmental responsibility", "businesses should encourage the development and diffusion of environmentally friendly technologies": does Solvay considers that discharging chemical wastes on to the shore of Rosignano is of conduct consistent with the stated commitment to the planet ('One Planet')?**

**Vincent De Cuyper:** Contrary to what the question states, Solvay does not discharge any chemical waste in the sea or on the shore in Rosignano. These are non-toxic, inert materials, and the discharge is done in line with BAT, in full compliance with local regulations as well as Solvay's high standards for health, safety and environmental protection.

**22. On the 7th of May 2020, the Italian Tribunal published the sentence issues by the Italian Supreme Court which found Solvay of environmental disaster<sup>4</sup> due to the discharge of hexavalent chromium at another Italian factory in Spinetta Marengo. Did Solvay take any action against managers and former managers sentenced by the Tribunal and if not, why?**

**Dominique Golson:** The question refers to a long-standing criminal proceeding against Montedison/Ausimont (the previous owner of Solvay's Spinetta site) and Solvay for environmental issues that occurred in the 1960s and '70s for a pollution having taken place before Solvay acquired the site in the early 2000.

Two Solvay local managers who are now retired were also found responsible for a minor offence relating to the remediation activities in relation to the historical contamination. Solvay has not taken any action against those two employees because it considers them innocent. Indeed, Solvay filed an appeal in February

2021 before the European Court of Human Rights (ECHR) and in March 2021 the ECHR responded to confirm that the appeal was admissible. Solvay now awaits the calendar for the appeal hearings.

On the merits of the case, we would like to highlight that the charges were ultimately rebutted by the judges both at first instance and on appeal: all analyses demonstrated that the water used in the plant had always been drinkable and therefore there has never been any damage to human health. However, a sentence has been issued for a minor charge against the two technical managers cited above, who are now retired and have been found responsible for not having carried out remediation activities in relation to the historical contamination.

24. **According to the authorization granted by the Italian authorities to Solvay's factory in Rosignano "from the performance point of view, therefore, the dune coast system must respond to the primary need for ecosystem protection as a composite framework of a variety of factors in which no element of the composition must be altered" Decree of the Ministry of the Environment and Protection of the Territory and the Sea DEC - MIN - 0000177, 7th August 2015 (pag. 22). Then according to the report issued by ARPAT - Regional Agency for the Environmental Protection of Tuscany Directive 2000/60 / EC "Quality of coastal marine waters facing the Solvay di Rosignano discharge" (March 2014) issued by Bucci - Di Marco (ANPA - ARPAT 2001) on the state of Posidonia oceanica in the area in front of Solvay's factory plant "the negative environmental impact on the Posidonia prairie of the marine environment coastal area surrounding the discharge into the sea of the Solvay plant is essentially due to the concentrations and mass flow of suspended solids and manifests itself in terms of complete destruction of the Posidonia prairie in the marine area affected by the sedimentation of the TSS [Total Suspended Solids] released by the discharge Solvay. [... omissis ...]": does Solvay's Board of Director consider the conclusion reached by the Regional Agency for the Environmental Protection of Tuscany a clear indication of a breach? If not, why?**

**Ilham Kadri:** We noted the question selectively used the 2001 ARPAT study from Mr. Bucci and Di Marco, ignoring more recent public studies. This can be misleading

More recent ARPAT studies state that according to the scientific literature on the subject, to have a precise response of the dynamics of a Posidonia oceanica prairie, a monitoring of at least 7 years is necessary and reports data from other Posidonia Oceanica meadows in the region referring to an ARPAT monitoring study completed in 2008, i.e. 7 years after Bucci-Di Marco study of 2001. For example with respect to the density of beams per square meter and primary production per bundle, Rosignano is surely not out of the average. In its 2014 report, ARPAT actually concludes that although preliminarily, it emerges that the prairie seems to have reached relative stability, with the stopping of the regression process in the portion of the area less affected by the discharge and maintaining the position of the lower limit. ARPAT refers to the need of subsequent monitoring

With respect to the situation of seaweed in the area directly in front of the industrial site, to summarize, the very local turbidity (by which I mean cloudiness) of the sea water in the immediate vicinity of the discharge point slows down the growth of seaweed (posidonia); notwithstanding this, the level of posidonia population is considered "Sufficient" by the ecological classification of the sea in front of Solvay's Rosignano site, according to the EU Directive 200/60/CE, a fact that is regularly confirmed by ARPAT (the Tuscany Environmental Agency).

Rosignano's environmental quality standards are in line with the rest of the Tuscan coast (as assessed by ARPAT) including sampling of fish and other fauna.

Accordingly, there is no breach of any regulation nor have the authorities contended otherwise.

25. **According to the World Health Organization, "Exposure to mercury – even small amounts – may cause serious health problems, and is a threat to the development of the child in utero and early in life. Mercury may have toxic effects on the nervous, digestive and immune systems, and on lungs, kidneys, skin and eyes. Mercury is considered by WHO as one of the top ten chemicals or groups of chemicals of major public health concern": how many hundred tons of mercury has Solvay discharged into the**

**sea in Rosignano over the last 65 years? Can you confirm that the official figure of 400 tons reported by ARPAT (Tuscany regional environmental agency - Solvay program agreement minutes of the Program Agreement Observatory Livorno, June 16 and July 2, 2009) is correct?**

**Vincent De Cuyper:** ARPAT regularly monitors mercury in the water, which shows levels that are not dangerous and consistent with other areas of the Tuscan coast. I repeat that mercury has never been used to produce Soda Ash; however, it was used in the past, in accordance with applicable legislation, in the production of chlorine, which started in 1940.

As of 1976, the chlorine production process was markedly improved, when the business implemented 3 years ahead of regulation a first change based on a new technology drastically reducing mercury discharge. In 2007, the business switched toward electrolysis membrane technologies which eliminate use of mercury, 10 years ahead of the EU requirement.

400T is a calculation presented in an ARPAT study "Monitoring the effects of Solvay effluents on the surrounding marine ecosystem-Final Report" ARPAT 2008 that simply juxtaposed estimated quantities in studies by different authors each with their own assumptions and calculation methodologies.

The most recent estimate by the IAMC study commissioned by Solvay in accordance with the IPPC permit ranges between 70-182T of mercury contained in offshore sediments

Third party estimates show a drastic drop in the level of mercury discharged from the plant since the introduction of the new technology in 1976 and a reduction to less than 100kg/year before it was phased out in 2007.

This information has been publicly available for many years. Authorities supported by competent experts and independent scientific bodies have been controlling and monitoring the evolution.

The screenshot shows the ARPAT website interface. At the top, there are navigation links: AMMINISTRAZIONE TRASPARENTE, ALBO ONLINE, GARE, LAVORA CON NOI, PEC, CONTATTI. Social media icons for Twitter, Facebook, YouTube, and RSS are also present. The main header includes the ARPAT logo (Agenzia regionale per la protezione ambientale della Toscana) and the logo of the Sistema Nazionale per la Protezione dell'Ambiente. A search bar is located on the right. Below the header is a green navigation menu with items: Agenzia, Temi Ambientali, Attività, Documentazione, Notizie, Dati e Mappe, and URP. The main content area displays the title 'Monitoraggio degli effetti degli scarichi Solvay sull'ecosistema marino circostante' and indicates it is a 'Relazione finale delle attività' published in 2008. A sidebar on the right contains a 'Navigazione' section with a list of reports, including the one currently viewed. Below that is a 'Notizie' section with a link to 'Il monitoraggio delle acque di balneazione nel 2020 in Toscana'. At the bottom of the page, there are links for 'Stampa' and 'Aggiungi ai favoriti'.

**26. How many kg of mercury has Solvay discharged into the sea in FY2020? Please provide the same figure also for FY 2019 and 2018 for the purpose of comparison;**

**Vincent De Cuyper:** Free mercury is below the limit of detection of measuring instruments. Mercury trapped in the limestone was addressed in question 2. Following the IPPC methodology, we estimate the amount of mercury compounds released in the water to be around 4 kg/annum - which can come from natural background. I remind you that the Soda Ash process does not use mercury.

**Table of heavy metal amounts discharged according to the methodology required by IPPC permit**

Compound (Kg/yr)	2018	2019	2020
Mercury and compounds (as Hg)	4	5	4

It is once more reminded, as was explained in the answer to question 2, that Rosignano was not included in the 2019 ARPAT study showing the coasts classified as “not good” for water chemical state with reference to mercury.

Tabella 5.13 - Concentrazioni di mercurio eccedenti rispetto al SQA-CMA e ai valori di fondo - Anno 2019

Corpo idrico	Stazione	Data di campionamento	Mercurio µg/L		
			Concentrazione	SQA-CMA D.Lgs. 172/2015	Valori di Fondo DGRT 264/2018
Costa Pisana	Fiume Morto	01/07/2019	0.12	0.07	0.09
Costa del Cecina	Mar. Castagneto	04/07/2019	0.14	0.07	0.04
Costa Ombrone	Foce Ombrone	17/07/2019	0.23	0.07	0.26
Costa Albegna	Foce Albegna	06/05/2019	0.16	0.07	0.26

27. **Does Solvay hold at least once a year any storage of mercury in Rosignano’s factory and can you provide us with details of the amount stored, how is it stored, why this has not been disposed yet and whether Solvay has taken any provision for the cost of disposing of it?**

Vincent De Cuyper: Solvay does not hold, store or use mercury in Rosignano's factory. Mercury has never been used in the Solvay Soda Ash process.

28. **On October 1st 2020, Solvay SA issued a press release stating that “Solvay’s commitment on biodiversity has been approved by the Act4Nature International an initiative that encourages corporate action for the protection, enhancement and restoration of biodiversity. The recognition was given to a select group of 30 companies” adding that “Act4Nature International's endorsement is due to Solvay’s commitment to setting bold objectives to solve key environmental and societal challenges - and biodiversity in particular - through science and innovation” (Solvay, October 1st 2020) an achievement that CEO Kadri commented with these words: “Reducing the impact of our business on nature is an urgent necessity. Our objective is to leave our children a better world than the one we live in today. We are addressing our impact throughout the value chain, from raw materials to production, including on biodiversity” (Solvay CEO Ilham Kadri, October 1st, 2020): can you please explain how Solvay can possibly claim commitment to biodiversity by discharging 250,000 tons of suspended solids per annum into the Mediterranean Sea in Rosignano?**

Fig. 4: Solvay: the narrative



Fig. 5: Solvay: the reality (Rosignano)



**Ilham Kadri:** At the risk of repeating previous statements, I confirm that the suspended solids contained in the Soda Ash production effluents are inert and non-toxic. That said, putting the two pictures together can be misleading; the picture on the left in fact highlights Solvay's innovative solution used in aquaculture, AQUALISAN® - a premium, effective and environmentally friendly water conditioning solution. This has nothing to do with Rosignano.

You will also note that Solvay has committed to reduce its impact on biodiversity by 30% by 2030, by taking pro-active actions in relation to climate warming, land acidification, water eutrophication, marine toxicity to name but a few. Solvay follows the well-known methodology RECIPE and has registered a progress of 12% in 2020 relative to 2018, about half of this being structural and half being due to a reduction of activity in 2020

These supplementary facts reinforce the progress driven by Solvay's ambitious One Planet roadmap.

29. **Did Solvay make any contribution or sponsorship to Act4Nature International? Please provide details?**

**Dominique Golsong:** Solvay has not made any contribution or sponsorship to Act4Nature International.

30. **Did Solvay make any sponsorship, donation, or grant to private and/or public beneficiaries – including local political organizations - in Italy (FY2020)? Please provide list of beneficiaries and amounts and comparable figures for FY2018 and 2019;**

**Dominique Golsong:** Solvay's policies and Business Integrity prohibit donations to political parties.

The Solvay companies managing the six Italian sites have made charitable contributions totaling 141k€, 139k€ and 131k€ in 2018, 2019, and 2020 respectively. Individual donations may be modest in size but their impact is significant. The main causes that benefit from our contributions cover matters such as education, health, culture, sustainability and wildlife. We consider ourselves to be fortunate to make contributions to such causes, as we know that they can help communities in which we operate.

In addition, in 2018 we made a donation of 300k€ to the Bussi municipality as a contribution to reindustrialize the area, following the Accordo di Programma with the Ministry of Environment, the Abruzzo region, the municipality and the owners of the areas signed on May, 3rd 2017.

All donations conform to our code of business integrity.

31. **Has CEO Ilham Kadri inspected Solvay's operations in Rosignano and in Spinetta Marengo (where Solvay was found guilty by the Supreme Court of environmental disaster) since she joined the company in 2019?**

**Ilham Kadri:** I have visited Rosignano before the lockdown, and Spinetta Marengo virtually.

32. **Has CEO Ilham Kadri or any member of the Solvay's Executive Committee ever taken a swim or sunbathed on the 'White Beach' in Rosignano?**

Fig. 5: 'White Beach' in front of Solvay's Rosignano Plant



**Ilham Kadri:** During my professional visit in Rosignano, I did not have the chance to go for a swim in Rosignano. But many of our Group leaders did.

Actually, as you may now, yesterday the Foundation for Environmental Education, which every year awards the coveted Blue Flag to Italian coastal towns for the quality of their beaches and swimming waters, confirmed its award to the town of Rosignano (one of only 17 in Tuscany) for two beaches, one located north of the plant (Castiglioncello) and one adjoining the plant to the south (Vada).

33. **The environmental impact of Solvay's operations in Rosignano have become the subject of several parliamentary interrogations filed in the Regional Parliament of Tuscany (30th of December 2020) in the Lower House (23rd of January 2021) and Upper House (13th of January 2021) of the Italian Parliament and then in the European Parliament (1st of February 2021): could Solvay confirm whether or not CEO Ilham Kadri has been kindly invited twice for a meeting by the Chairman of the Italian Parliamentary Commission of inquiry into illegal activities connected to the waste cycle and related environmental offenses introduced with Italian Law n. 100 (7th of August 2018) to hear about Solvay's environmental strategy in Italy and then CEO Kadri did not yet respond to the Chairman, did not yet make herself available for any meeting/conversation and whether she instructed Italy Country Manager Marco Colatarci to respond/attend any meeting on her behalf? Is this behavior consistent with the Solvay's commitment to social responsibility?**

**Dominique Golsong:** Solvay highly respects the role of these democratic institutions, and acknowledges the role and the critical importance for the Italian Parliament and the environment of the Italian parliamentary Commission of inquiry on illegal activities connected to the waste cycle.

We are surprised to learn that the shareholder asking this question is aware of the existence and content of private and confidential correspondence between the company and an Italian official.

Solvay confirms that it received two letters from the chairman of the parliamentary committee, Mr Vignaroli.

It understood those letters to be individual initiatives of Mr Vignaroli, which do not represent an official decision based on the deliberation of the committee.

Nonetheless, Mr. Vignaroli's letters were answered by the Chairman of Solvay Chimica Italia, who confirmed that Solvay stands available to respond to any enquiries by the committee within the remit of its powers. In Italy, like in other countries, the chairman of the local Solvay company is in charge of responding to such requests. Solvay has always been responsive and collaborative with all the past requests from the committee.

34. **According to articles appeared in the Italian local press, in response to a parliamentary interrogation filed by MP Francesco Berti asking questions on Solvay's operations in Rosignano, Solvay sent a reply letter addressed exclusively to the Italian Government (not to the Italian Parliament). Provided that MP Berti asked the questions publicly in the Lower House of the Parliament, are you willing to make public Solvay's response on these questions?**

**Dominique Golsong:** As is a usual practice, Solvay sent a letter to the Ministries involved with each question in order to provide the relevant facts and information. It is of course up to the Government – rather than to Solvay – to reply to questions from members of Parliament, including by using, if it deems appropriate, the information provided by Solvay.

35. **Does Solvay's Board of Directors consider the refusal by the CEO to meet with the Chairman of a parliamentary commission - who clearly represents the public interest in a country where Solvay operates (and has already been sentenced for environmental disaster) - responsible corporate and social behavior?**

**The Chairman:** We refer to the response to question 33. In addition, the Board considers it is responsible corporate governance to have a regional manager most knowledgeable about the questions, responding to the authorities. Again, we question the legal process under which the shareholder asking the question has

obtained access to this private correspondence and we will point that out to the parliamentary committee chairman at the next opportunity to correspond with him.

36. **Leaving aside the issue of discharging 250,000 tonnes per year of waste material (suspended solids) which contains heavy metals, directly on to the shore and then into the sea with more than 13,000,000 tonnes of suspended solids discharged since 1912, in order to produce soda ash at its Rosignano's factory, Solvay for more than 100 years has (i) extracted non-renewable limestone (CaCO<sub>3</sub>) from the nearby local quarries of San Carlo (Livorno); (ii) extracted nonrenewable salt (NaCl) (approx. 1.6 million tons per year) from the soil of nearby cities of Volterra, Montecatini Val di Cecina and Pomarance; and (iii) pumped water from the Cecina river (approx. 10 millions cubic meters per year) which is at risk of hydrological instability: how does this production process reconcile with Solvay's sustainability objective ('One Planet') to "Increasing water use efficiency", "Accelerating the circular economy", "Increasing waste recovery" and "Leveraging innovation to develop more sustainable solutions"?**

**Vincent De Cuyper:** The question contains some assertions that are inconsistent with the facts. We have explained that all effluents in the production of Soda Ash were legally discharged by Solvay and do not contain toxic materials.

We note that the question acknowledges that the production of Soda Ash involves exclusively limestone, salt and water. This part is indeed correct.

Solvay One Planet is our ambitious sustainability roadmap and we have provided you with facts and with numerous examples of the significant progress that has been made globally and also in Rosignano.

10 goals have been committed by Solvay and structured in three pillars: Climate warming, resources scarcity and better life. The first year has already delivered significant progress, such as the GreenHouseGas reduction by 20% out of which 8% is structural (compared to 2018), the waste recovery has improved by 27% and the circular solutions increased to 5% of the Group turnover.

As already shared previously, the site of Rosignano has initiated a sustainability program before Solvay One Planet by investing significantly into sustainability priorities. During the period 2018/2021 Rosignano focused on CO<sub>2</sub> and Water: new power plants, cooling towers, Carbon Capture and Liquefaction, Slurry Treatment, Water management (CO<sub>2</sub> reduced by 40% since 2018 for the same steam, Water reduced by 20% over the decade). 50m€ have been invested in the last 3 years, as stated in question 20.

37. **On the 24th of February 2021, Solvay announced that it is "taking steps to organize its Soda Ash & Derivatives business into a separate and fully controlled legal structure. These steps will reinforce internal financial and operational transparency and accountability, in line with its mandate of optimizing cash flow generation and returns, while increasing future strategic flexibility" (Solvay, 24th of February 2021) and said that its decision is "in line" with Solvay's "business mandate of optimizing cash flow generation and returns and will further reinforce internal financial and operational transparency and accountability while increase in future strategic portfolio flexibility": can you please explain how a different legal structure can possibly impact cash flow?**

**Ilham Kadri:** It is evident that the deployment of the GROW strategy has contributed to strong performance on a number of upfronts and in particular cash generation.

There are a number of reasons for this strong performance.

One notable factor is the fact that businesses were given differentiated strategic and operational mandates. The carve-out of Soda Ash will enable us to underpin its performance and will promote even greater focus and accountability to execute its strategic, financial and energy transition roadmap and unlock even more value.

Further, we had originally planned to make this announcement and initiate these steps in early 2020. The Covid crisis delayed but did not derail us.



**38. Has Solvay analyzed, also with the assistance of external legal advisors, the impact of potential future environmental liabilities stemming from its soda ash operations (including Rosignano) before deciding to adopt a separate and fully controlled legal structure and what were the conclusions in the context of Solvay's capital position? How much capital will be contributed to the newly organised legal structure for this purpose? Will Solvay, as the parent company, provide an unlimited guarantee to its newly owned subsidiary also in relation to environmental liabilities?**

**Karim Hajjar:** Before responding to the specifics of the question, some terms used should be commented on. For example, "*potential future environmental liabilities*" cannot apply in a context where the Soda Ash production process in Rosignano has not given rise to environmental liabilities, nor have the authorities made any statements to the contrary. To suggest otherwise is misleading.

I now invite you to turn your attention to our accounting policies, especially those dealing with environmental provisions shown on page 239-240 of our 2020 annual report and those dealing with contingent liabilities shown on page 263-264.

I highlight the fact that we not only comply with International Financial Reporting Standards, but that we also pride ourselves in maintaining a prudent stance in respect of all matters be they of a financial or an accounting nature. Our balance sheet is fairly stated, and total environmental liabilities of Solvay Group stood at 614 million whereas total contingent liabilities in relation to environmental remediation amount to 301 million at 31 December 2020. These facts have been subject to independent scrutiny and have been confirmed by the external auditors.

That said, the question raised will of course feature in the broadest sense in the assessment of factors relevant to how we determine the appropriate capital structures of legal entities. As you will expect, we would seek to ensure that capital structures of legal entities are appropriate; this principle further applies to groups of affiliated companies and encompass matters regarding economic resilience and value creation. For example, the assessments take account of many specific factors, including but not limited to matters such as short and long term market dynamics, competitive landscape, strategic growth opportunities, investment needs, risks and opportunities, profitability and cash forecasts, target credit strength and expected dividends, to name but a few.

I can confirm that such matters are an integral part of the carve out process which is expected to conclude in the next 12 to 18 months. Whilst I can understand a desire to receive answers earlier than that, it would be premature to offer any indications or to speculate on what the conclusions might be before the work is completed thoroughly and professionally.

**39. Are you aware of any pending criminal investigation with regard to Solvay's operation in Rosignano (or in any other production site in Italy)? Please provide details;**

**Dominique Golsong:** Regarding pending criminal preliminary investigations with respect to Rosignano, we are only aware from press reports that complaints have been filed with the public prosecutor office of Livorno and that preliminary investigations were started. However Solvay has no direct knowledge of the allegations because it has no legal right to have access to those complaints or to the judiciary file covered by confidentiality.

With regard to other pending criminal preliminary investigations regarding production sites, Solvay is aware that the public prosecutor office of Alessandria has started new preliminary investigations concerning the Spinetta Marengo site in relation to allegations of contamination of the underground waters and soil.

Most recently, Solvay has learnt from press articles that in January 2021 the public prosecutor office of Pescara started investigations concerning the environmental management activities carried out by several industrial companies in the municipality of Bussi, including Solvay. Again, Solvay has no access to the judiciary file covered by confidentiality, but according to the press, the investigation would seem to involve Solvay in relation to the remediation activities carried out from 2002 through 2018 on the external discharges, then sold to the Bussi Municipality.

40. **Provided that, according to Solvay, the company's soda ash operation contributes 60% of group CO2 emissions, does Solvay believe that a sale of the soda ash business whilst reducing by 60% Solvay's CO2 emissions, will make any positive contribution to the (one) planet?**

**Ilham Kadri:** Solvay has not made any decision to sell the Soda Ash business.

I will also repeat that we are undertaking several initiatives in our Soda Ash plant to reduce our CO2 emissions. For instance, as you have seen in my presentation, we announced plans to build a second biomass boiler at our Soda Ash operation in Rheinberg, Germany, which will completely phase-out coal by 2025. Rheinberg is the first plant to move away from thermal coal since the launch of One Planet and the first one to switch to Biomass (by which we mean scrap waste wood chips that would otherwise go to waste). It will be the first Soda Ash plant in the world to be powered primarily by renewable energy, and it will likely become the global reference - indeed the benchmark against which to compare others - in terms of CO2 emissions per ton of production. And to cap it all off, it will also generate compelling financial returns.

We can also remind you that our commitments for Solvay One Planet are at constant scope.

41. **Can you please provide an update of existing environmental related proceeding in New Jersey and more broadly in the US?**

**Dominique Golsong:** There have been many PFAS-related lawsuits filed against many companies, but the majority of them relate to the firefighting foam market, in which we have never participated.

In fact, Solvay was dismissed from 17 out of 18 legal cases related to firefighting foams since these suits began to be filed.

As for PFAS-related litigation filed in New Jersey, Solvay does not comment on any pending proceedings. In New Jersey, Solvay recently communicated that it will move to fully non-fluorosurfactant technologies at the end of June.

42. **In recent years Solvay has reported an inventory of more than 8,500 tons of Thorium-containing wastes stored at its La Rochelle factory. These wastes are attributed to the processing of Thorium-containing raw materials for rare earth extraction, specifically monazite. Solvay has reported that monazite was last processed by the La Rochelle factory in 1994. We would like to know:**

**How much Thorium waste remains at La Rochelle today?**

**Ilham Kadri:** The question is referring to activities Solvay has acquired from Rhodia back in 2011. The Thorium stock and inventory existed, and was managed by Rhodia, under surveillance from the authorities. I would like to remind you that Thorium in La Rochelle is considered by the authorities as a valorizable raw material and not a waste. Indeed, there is a stock of 8,500 Tons of Thorium, of which 6,300T belongs to Solvay, the rest is under the ownership of Orano.

**How much has been moved offsite since 1994?**

**How much material has been moved offsite in 2020? (please provide comparative data for FY 2018 and 2019).**

**For material taken offsite, where has it gone, how is it handled and by whom?**

**Vincent De Cuyper:** Now on the question, how much Thorium we moved out since 1994, the answer is none and thus none in 2018, 2019 and 2020.

But please take note that quantities of Thorium have been used for research and for commercial purposes. We cannot provide more information due to confidentiality aspects.

**What is Solvay's plan for permanent disposal of the remaining, massive inventory of Thorium waste, which has been stored at La Rochelle for more than 26 years?**

**Vincent De Cuyper:** I would like to correct the language. Thorium stock is considered as valorizable raw materials and not a waste

Solvay will maintain and upgrade the storage as long as the products remain there under the strict control and monitoring of the French authorities, while keeping and developing our commercial and research activities.

There are well known potential future applications, you can find in the public domain, such as medical applications in Immunotherapy (cancer treatment) and nuclear energy applications (as fuel in molten salt nuclear reactors of the future).

**How this inventory is treated in Solvay's balance-sheet?**

**Has Solvay taken any provision for disposing of this waste?**

**Vincent De Cuyper:** Thorium is not waste but a valorizable raw material so no provision on Thorium exists in the balance-sheet.

**What radiation levels have been measured within, and outside of, the La Rochelle plant and how do those radiation levels compare to background radiation levels?**

**What steps has Solvay taken to verify that people who work in or reside near the La Rochelle plant have not suffered adverse health impacts, such as higher rates of cancer, due to their proximity to Solvay's Thorium waste?**

**Vincent De Cuyper:** There is a regulatory on-site program of radioactivity follow-up, as part of our site operating permit. This is also covering workers exposure monitoring and protection on the site.

Now turning to off-site radioactivity, we have permanent installed devices for monitoring purposes, and we have been in the past years at maximum half of 1 milliSievert/year, allowed by the authorities on the top of the natural background.

43. **We have been informed that in recent years Solvay has reported an inventory of more than 8,500 tons of Thorium-containing wastes stored at its La Rochelle factory (please confirm if this is correct). These wastes are attributed to the processing of Thorium-containing raw materials for rare earth extraction, specifically monazite. Solvay has reported that monazite was last processed by the La Rochelle factory in 1994. We would like to know:**

**What measures have been taken to avoid the migration of NORM residue into groundwater, surface water, and the environment generally?**

**What measures has Solvay taken to verify that NORM residue, or other hazardous materials contained within the fill material, have not migrated into the local environment?**

**Vincent De Cuyper:** Those products are stored in a safe, managed in the frame of our operating permit under the supervision of the authorities, and in a dedicated location. Regular monitoring of groundwater is done on a yearly basis and all measurements are around the guidance level of the French regulation or the World Health Organisation for drinkable water. I remind you that groundwater in La Rochelle cannot be used anyway as such, as it is salty because of the location close to the sea.

- 44.1 **What specific actions are taken to secure the supply of rare metals?**

**Ilham Kadri:** Solvay operates three sites that process rare earths: France, Japan and China. Our main raw materials for these operations are Light Rare Earths, ie. Cerium Carbonate, Lanthanum, Cerium Carbonate and Neodymium and Praseodymium called Nd/Pr. We have multi-year contracts, including capacity reservation, for all main raw materials. Our main sources are China and Australia yet we have identified viable alternatives outside China that can be 2nd or 3rd sources of supply. It is important that Cerium and Lanthanum supply and prices have been stable over the past years (at a low level compared to the past),

while the supply constraints are on Heavy Rare Earths mainly used for high performance magnets which we do not serve.

**44.2 How does the supply chain alert mechanism work?**

**Ilham Kadri:** Since 2015 we have established business continuity plans (BCP) for our Rare Earths business as part of our governance and the supply of our strategic market such as Auto and Electronics which require us to offer security of supply. Solvay's plan covers 4 risk categories: industrial (more than one plant producing), purchasing (more than one supplier), supply chain (multi-sites, if problem of transit. plant in Asia and Europe), commercial (indexation clauses with customers and suppliers).

**44.3 Are all critical suppliers audited?**

**Ilham Kadri:** Critical suppliers are under contract and audited regularly.

Our core suppliers are assessed by Ecovadis - the 3rd party assessment platform. This process also ensures assessment versus our Supplier Code of Conduct. A score below the min. threshold of 45 triggers a reassessment and corrective action plan. Of our 450 core suppliers, 70% have an Ecovadis assessment completed to date.

With respect to our 6 rare earth suppliers:

- all of them signed our Code of Conduct (which you can find in our website)
- only 1 out of 6 achieved a score above 45 and hence are in the process (1) or will be reassessed this year (4) with Ecovadis, with corrective action plans in place
- on top, a quality audit was also performed last year by our Quality management team for all Rare earth suppliers.

**44.4 What recycling measures are in place for rare metals?**

**Ilham Kadri:** At present, we recycle and valorize NdPr tailings from past activities in France. This activity has been done without interruption for the past 10 years, and will continue until the tailings are depleted and our projection is that all current stock will be depleted around 2025.

**44.5 Is a geographical mapping of rare metal mines regularly performed?**

**Ilham Kadri:** We rely on both internal and external information, we have our proprietary intelligence, and we actively participate in Industry Forums, such as International Rare Earth Conferences, around the globe.

**45.1 How much is Solvay planning to invest in Rosignano, in order to achieve a full decontamination of the shores, in 2021 and in the following years?**

**Vincent De Cuyper:** Before going further on this question, we would like to clarify the underlying facts and the terminology used by the shareholder asking the question:

- The expression "*discharge of chemical residues*" or an erroneous quote from ARPAT to say that Solvay "*dumped more than 120,000 tons of toxic substances [NB: "suspended solids" in the ARPAT report] a year into the sea from 2005 to 2013*". The discharge from our Soda Ash production is only composed of natural, inert compounds left over from the natural compounds we take into the facility to produce Soda Ash. The discharged compounds include limestone, gypsum and sand. Calling these natural compounds "contamination" can be misleading. These elements pose no threat to the water quality or adversely affect the toxicity levels in the sand. They are non-toxic and not dangerous.
- Our discharge is made in conformity with the relevant BAT for the discharge of Soda Ash effluents into the sea, as it ensures that there is no local accumulation and rather the suspended solids that flow back onto the shore help protect the coastline from natural erosion.
- "*discovered that the land beneath the Solvay site and the groundwater, were contaminated too*": we have on-going procedures of remediation relating certain specific portions of soil inside the plant,

well-known to, and monitored by, the competent authorities and experts (ARPAT, Region, Municipality,...) - and our provisions cover these remediation provisions.

- Regarding asbestos: note that we never produced asbestos and our employees were exposed because of past equipments and construction standards.
- Regarding water and Cecina water, elements you mentioned are related to salt and not water - leading to different conclusions exposed in the answers to the questions 45.6 - 45.6.1 - 45.6.2.
- Regarding the mention of the "Question for written answer" submitted to the European Commission by four Italian MEPs on the 1st of February 2021, the European Commissioner answered on April 13th, 2021 the following: *“there is no pending infringement against Italy under the water framework directive”*.
- Regarding the statement on Posidonia *“to disappear from the seabed in front of Rosignano’s white beaches”* - the latest studies from ARPAT agency in 2014 report states that according to the scientific literature on the subject, to have a precise response of the dynamics of a Posidonia oceanica prairie, a monitoring of at least 7 years is necessary and reports some data from other Posidonia Oceanica meadows in the region referring to an ARPAT monitoring study completed in 2008 i.e. 7 years after Bucci-Di Marco study of 2001. For example with respect to the density of beams per square meter and primary production per bundle, Rosignano is surely not out of the average. ARPAT actually concludes that although preliminarily, it emerges that the prairie seems to have reached relative stability, with the stopping of the regression process in the portion of the area less affected by the discharge and maintaining the position of the lower limit. ARPAT refers to the need of subsequent monitoring.
- Regarding the mortality study that is referred to, the conclusions clearly state the following words: *“it is not possible to establish a causal link between environmental pollution and increased mortality.”*

Our Rosignano operations are in full compliance with the law and our own high standards for operations, including applying the EU framework for Best Available Techniques (BAT/BREF), ensuring our industrial activities are done safely and respect the environment. It is also worth highlighting a benefit from the discharge is that it stabilizes the shore against erosion.

We work in close collaboration with the authorities to monitor regularly the quality of the shore, the water, the flora and fauna. In line with the IPPC permit, Solvay respects a strict self-control plan and protocols, in close collaboration with the ARPAT. It defines the parameters to be controlled; concentration limits; methodology of sampling and analysis. Limestone, like many types of rock or stone, naturally contains traces of heavy metals, but these are imprisoned in the solid state of the limestone and cannot be absorbed by living organisms. Indeed, ARPAT has consistently confirmed the safe quality of the sea water through regular and independent sampling. The quality is consistent with the rest of the Tuscan coast. Shores don't need “decontamination”.

**45.2 When is the decontamination process expected to be completed?**

**Vincent De Cuyper:** Please refer to the previous question.

**45.3 How much will the decontamination process cost the company in total?**

**Vincent De Cuyper:** This question is not relevant as we already clarified and answered question 45.1.

For the avoidance of doubt, effluents discharged by our operations only contain safe, inert and non-toxic materials. These natural compounds are not contaminating the shores, they pose no threat to the water quality or adversely affect the toxicity levels in the sand. It is non-toxic and not dangerous natural elements.

**45.4 When does Solvay plan to implement the same technical solutions which exist - and the company already implemented at its other factories to discharge its waste - in Rosignano?**

**Vincent De Cuyper:** There are several acceptable techniques to dispose of non-toxic and non-dangerous substances - and each of them were considered. Implementing the EU's framework for Best Available Techniques (BAT) depends on the unique characteristics of each location.

Therefore, the best solution was chosen according to the local conditions, also taking into account the erosion problem of the shore

It was referred to answers on similar questions for further details.

**45.5 Solvay has added the "Solvay One Planet" target, with a 10% weight, on the STI (short-term incentives) for CEO compensation[5]. As we understand, this target includes ten measurable commitments, among which:**

- **Increasing water use efficiency. Solvay will diminish its impact on freshwater withdrawal by reducing its intake of freshwater by 25%;**
- **Increasing waste recovery. The Group will reduce by a third its non-recoverable industrial waste, such as landfill and incineration without energy recovery.**

**45.5.1 To which extent was the intake of freshwater from the river Cecina reduced in 2020 (in percentage and in absolute terms)?**

**Vincent De Cuyper:** We have invested significantly in the plant to improve our operations at Rosignano over many years. One strong area of improvement of our production process is related to water consumption. Part of these investments allowed us:

- To reduce by 20% freshwater intake from both Cecina River and Lake moving from 10 millions cubic meter/year to around 8 millions cubic meter/year
- To reduce our consumption of high quality groundwater by 66% moving from more than 3 millions cubic meter/year to less than 1 million cubic meter/year, this latest proportion is now used only as internal drinking and for demi-water production.
- To replace fresh water / sea water intake by the use of recycled water from the local municipal wastewater treatment plant where Solvay holds 10%.

This reduction of the intake of freshwater in the Rosignano plant won't stop there as we will continue to raise the bar as part of our Solvay One Planet ambition.

**45.5.2 How has the reduction of Solvay's intake of freshwater from the river Cecina contributed to trigger the 10% "Solvay One Planet" target for CEO compensation related to the financial year 2020?**

**Ilham Kadri:** The compensation of the CEO and members of the Executive Committee absolutely incorporates our sustainability targets.

As highlighted in the question, one of our ten ambitious 2030 Solvay One Planet goals is to reduce freshwater intake by 25% taking 2018 as a Baseline.

In the financial year 2020, we reduced intake of freshwater by around 5% compared to 2018 as highlighted in our 2020 integrated report. Part of this achievement is linked to the reduction of Solvay's intake of freshwater from the river Cecina that has been described in previous question (45.5.1).

Solvay One Planet objectives are weighting 10% of Group performance in STI calculation of CEO remuneration as highlighted in our 2020 governance report. These objectives are also included in the STI calculation of the Executive Committee and of all cadre employees.

**45.5.3 Is the commitment "increasing waste recovery" also including decontamination measures in Solvay's production sites, including the shores of Rosignano?**

**Vincent De Cuyper:** Please refer to the answer to question 45.1. In general, "Increasing waste recovery" is not linked with the remediation topic.

**45.5.4 If yes, how have those decontamination measures contributed to trigger the 10% "Solvay One Planet" target for CEO compensation related to the financial year 2020?**

**Dominique Golsong:** Please refer to previous answers.

**45.5.5 If no, does Solvay plan to add specific "pollution reduction" or "decontamination" targets in its STI (short-term incentives) and LTI (long-term incentives) for CEO compensation?**

**45.5.6 If yes, when? If no, why?**

**Ilham Kadri:** Decreasing our impact on biodiversity, environmental remediation are integral parts of our business performance and industrial operations. Remediation programs are managed with specific objectives by a corporate steering committee led by an Executive Committee member.

They all contribute to our annual performance. And as such to the STI of the group and the CEO. 10% of the STI is linked to Solvay One planet Performance while 20% of LTI is impacted by the reduction in greenhouse gases emissions.

This is reassessed on a regular basis.

**45.6 How much did Solvay pay to the Italian State for the withdrawal of water from the river Cecina, under the agreement with the State Monopolies, in 2016, 2017, 2018, 2019 and 2020?**

**Vincent De Cuyper:** The fees concerning the concession for the withdrawal of water are established by a regional decree of 2016 which applies to all users. As to Rosignano, the fees paid were as follows:

2016: 210.321 €

2017: 128.354 €

2018: 180.936 €

2019: 185.049 €

2020: 185.049 €

**45.6.1 Which disputes and appeals are currently pending (if any) regarding the amount to be paid for the withdrawal of water from the river Cecina and with which expected outcome?**

**Dominique Golsong:** No disputes and appeals are currently pending regarding the amount to be paid for the withdrawal of water from the river Cecina

**45.6.2 Has Solvay set aside provisions to pay additional royalties to the State in case any of the above mentioned disputes and appeals are lost for Solvay? If yes, for which amount? If no, why?**

**Dominique Golsong:** No, because there is no litigation on this issue that we are aware of.

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