



SOLVAY

asking more from chemistry®

Innovating for sustainable solutions

Roger Kearns

Our vision for sustainable innovation

**Pioneering
new ideas**

Deliver value

Sustainability

**Leverage
network &
partnerships**



Our innovation responds to sustainability challenges

Sustainability driving growth in chemicals

Climate change



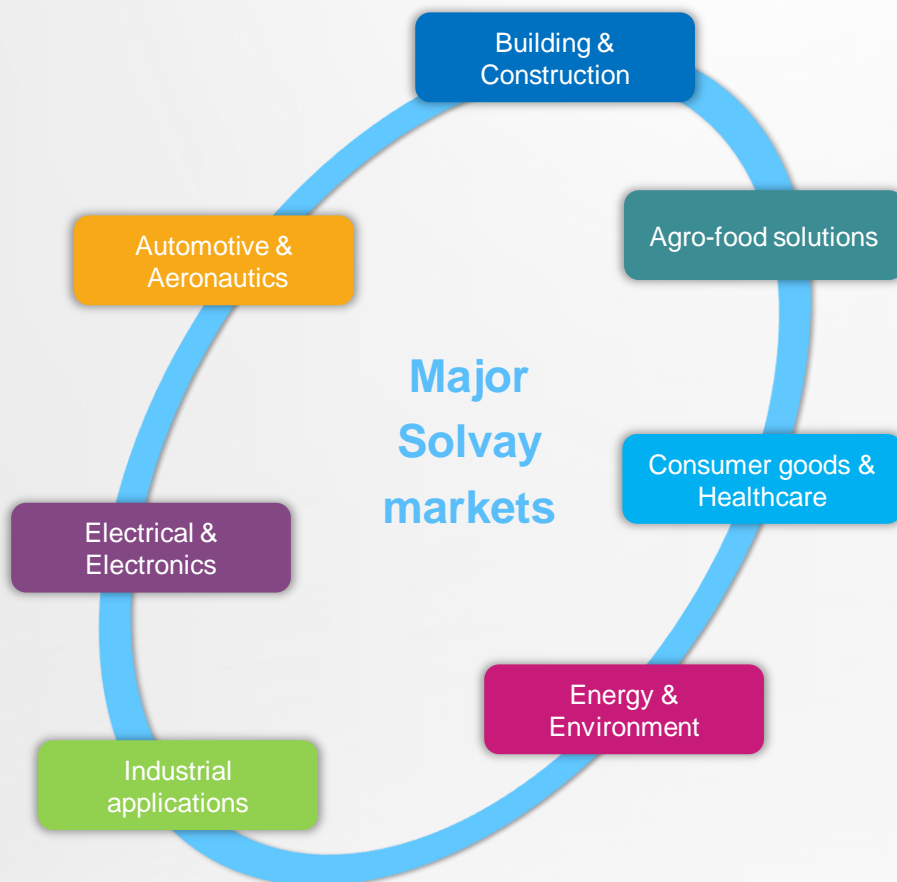
Resource scarcity



Health and well being



“Next billion consumers”



Major Solvay innovation fields

Advanced materials

Sustainable energy

Organic electronics

Advanced formulations

Renewable chemistry

Eco-processes

Innovative solutions towards sustainable mobility...

Powertrain efficiency



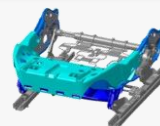
- High temperature resistance materials for air induction & turbo systems

High performance fluoroelastomer for fuel injectors



- Specialty polymer grades for thermal management systems

Light weighting



- Full range of structural and 3D-moldable high-performance foams

High performance polyamide and composite materials for semi-structural and structural parts



New generation of electrolytes, salts, binders and separators to improve Li-ion battery performance



- Products for fuel cell vehicles



- Rare earth oxide formulation for catalysis systems



Highly dispersible silica



- Rare earth recycling in permanent magnets

Electrification

Clean & green technologies

... towards sustainable energy...

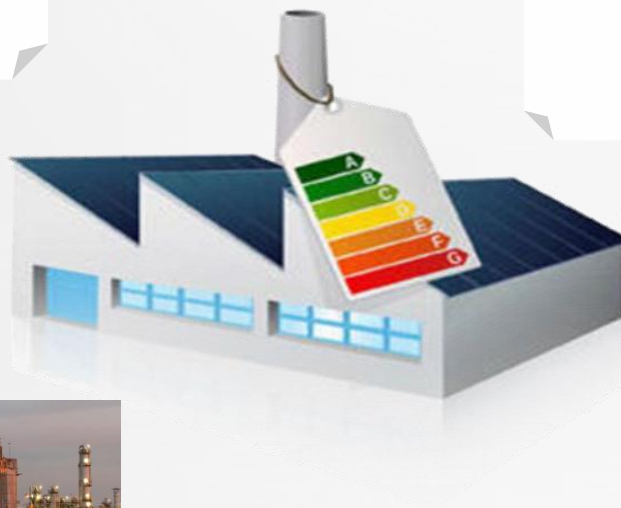
Energy from renewable sources

- Materials for inorganic and organic photovoltaic panels
- Building blocks for epoxy resins for wind turbines
- Innovative resins for fuel cells membranes
- Energy produced from biomass



Energy storage & conversion

- Innovative materials for current and next generation batteries
- Solar pond
- CO₂ capture & use



- Energy savings & optimization
- Surfactants (also bio based) and specialty polymers for oil & gas extraction
- Sulfuric acid regeneration for oil refineries



Energy & resources efficiency

... towards a sustainable life style

Process & energy efficiency

- OLED lighting
- High performance polyamide for LED
- Surface treatment



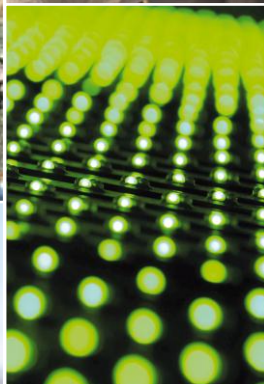
- Materials for smart devices
- OLED displays
- New materials for transparent electrodes



Enhanced design & connectivity

Sustainable solutions

- Energy efficient lamps
- Rare earth recycling
- Bio sourced materials for structural applications
- LED materials

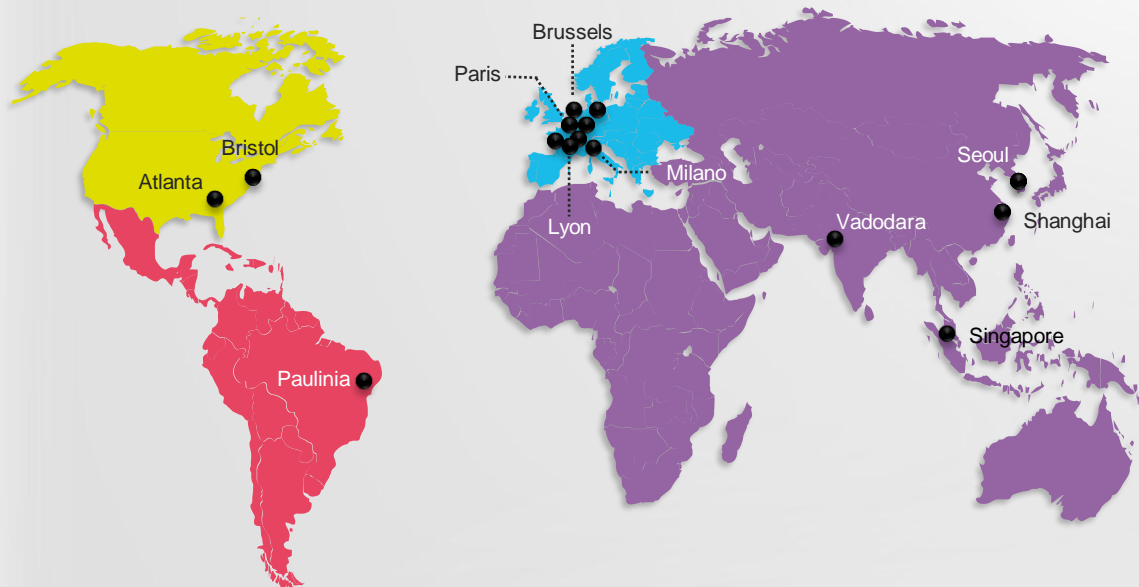


- Circuit breakers
- Flame retardant solutions

Safety

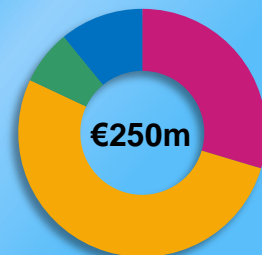
Solvay research network: innovation and delivery

Innovation excellence: € 250 m REBITDA lever*...



Network of competence centers and shared resources, cross-fertilizing and enhancing our sustainable innovation

across businesses



■ Consumer Chemicals ■ Advanced Materials
■ Performance Chemicals ■ Functional Polymers

2012 data

1,900 R&I staff
~ € 300 m R&I efforts
80% R&I resources managed by GBUs
23% New sales ratio
300 Patents filed

Open
innovation



* 2013-2016 growth from innovation

Building customer intimacy and market proximity, Asian focus

Korea

Batteries, electronics and engineering plastics

India



Renewable chemistry and material science

Singapore

Formulation for personal care, agro, oil & gas, coatings

China



Eco-processes, eco-efficiency & physical chemistry

A unique international collaborative lab in China



Main research centers

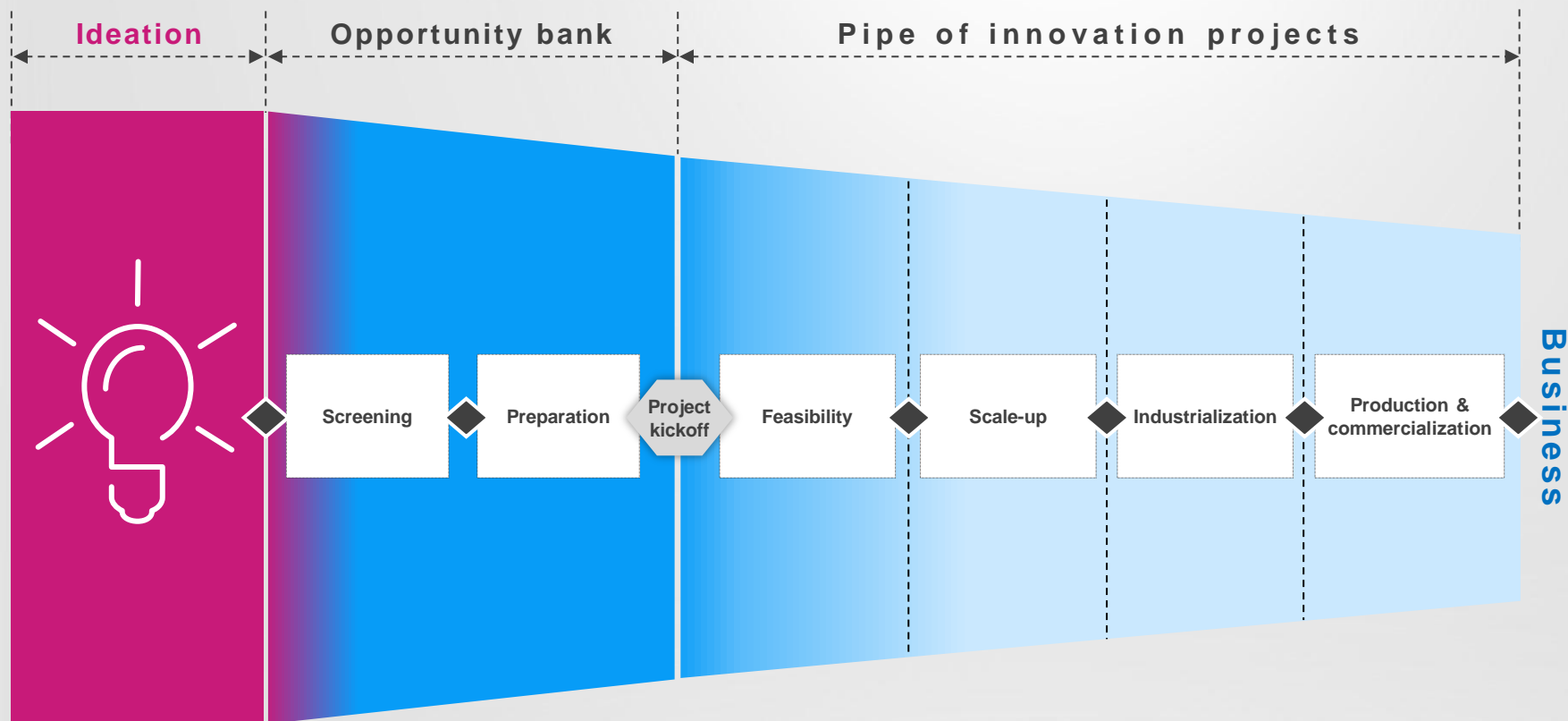


Process improvement & technical service laboratories

Doubling resources

~500 scientists by 2016

Best-in-class processes for innovation excellence ...



Ensuring efficient & timely innovation delivery

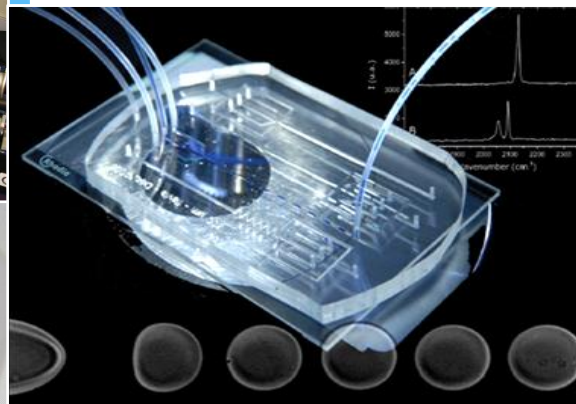
... and best-in-class tools for innovation excellence

High throughput methodologies developed at Solvay's Lab of the Future in Bordeaux

Robots for synthesis, chemical reactions and formulations



“Lab on a chip” for formulations and phase diagrams

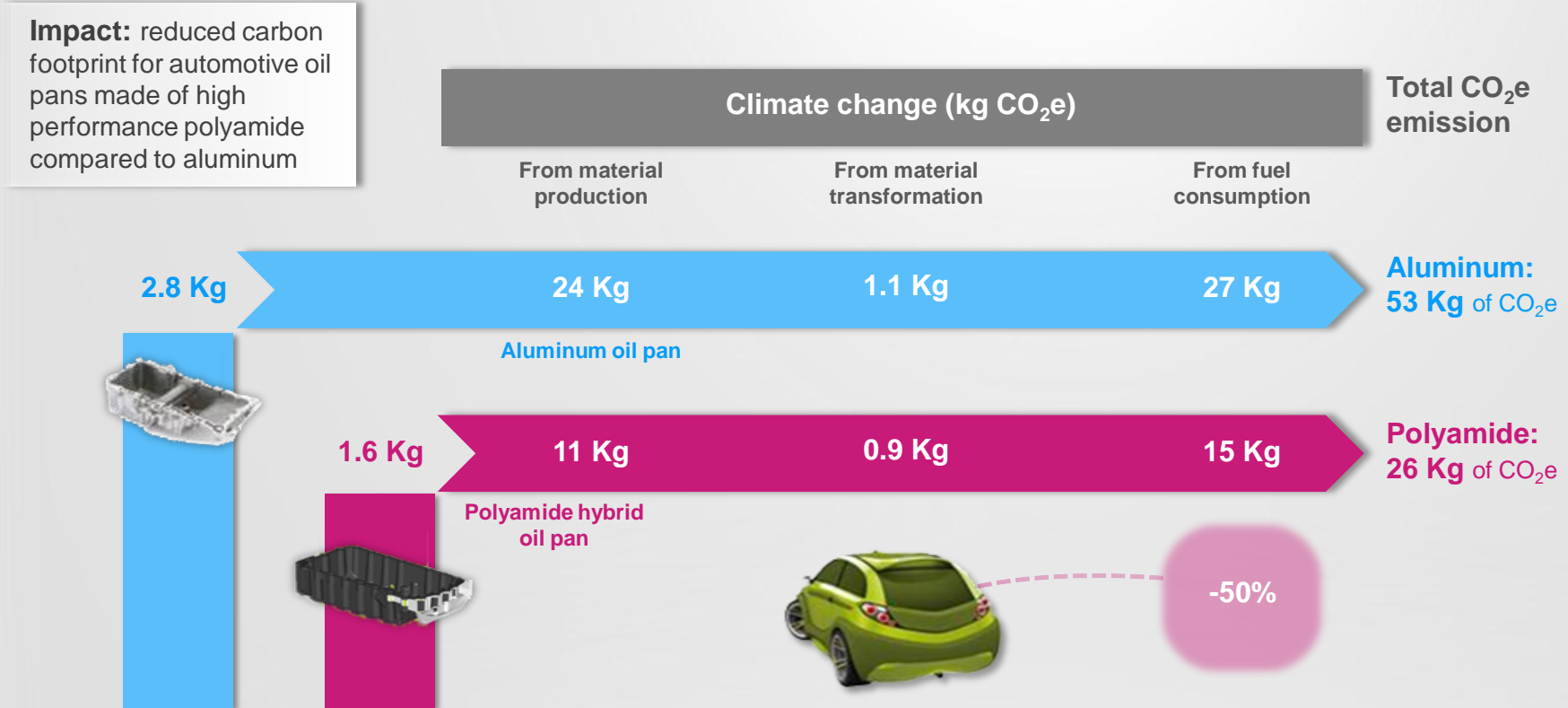


Microfluidics for data acquisition and testing

Laboratory Of Future - Joint lab with academia

(French national center for scientific research & Bordeaux university)

Eco-conceived solutions, starts with impact assessment



Delivering sustainable value



SOLVAY

asking more from chemistry®

**Pioneering ideas
Real life applications
Delivering sustainable value**