Supporting the Group's transformation

For the success of its transformation process, Solvay is relying on its 29,400 employees in 56 countries. The primary mission of Human Resources (HR) is to ensure everyone endorses the Group's new ambitions and contributes to the change process. By offering a motivating work environment, focusing on people development, and deploying a culture of accountability and performance, Human Resources participates actively in the Group's success.

Making chemistry meaningful: new employer communication

Increasing its appeal to young people is an important challenge for Solvay, which recruits 2,500 new employees each year, increasingly in fast-growing regions. Launched in 2013, the new employer brand capitalizes on the Group's values and its commitment to sustainable development. Beyond the prospects of international careers, Solvay offers talented persons from across the world the opportunity to play an active role in building a more sustainable future through chemistry. This ambition is expressed throughout the new recruit integration process. It was the subject of a communication campaign in major recruiting countries and on social networks on the theme "Join us. At Solvay we ask more from chemistry".

_Since 2013, Solvay has been organized “BU-centrically” around the autonomy and accountability of the management teams of the Global Business Units (GBUs). As a driver of change, Human Resources is adapting its vision and mission to new challenges: providing day-by-day support to the operating entities, promoting employee development, and increasing the attractiveness of Solvay to today’s and tomorrow’s talent.

600 people worldwide are mobilized to achieve these objectives. While structured to respond to local needs as expressed by GBUs, the HR team also provides the Group with a global vision of its skills needs.

In 2013, this team worked to strengthen the cohesion of the Group by harmonizing policies and processes, and helping deploy the new culture of performance and accountability.

A priority: supporting geographic expansion

To assist the Group in its product and geographic expansion, new ways of working are being introduced.

Identified as a powerful lever of cohesion and motivation, internal mobility is encouraged by a policy that invites talents to come out of their culture and skills “silos”.

In growth areas, emphasis is also being placed on recruiting and retaining local staff, particularly in Asia. This multicultural dimension is proving a real asset as the Group multiplies its acquisitions, facilitating the integration of new teams from acquired companies, such as, in 2013, Chemlogics in the United States and Erca Quimica Ltda in Brazil.

Right now the new culture is being actively promoted on a global basis. Everywhere, initiatives are being implemented to encourage ownership of it, including management sensitization, internal training sessions, and integrating behavioral models in annual performance appraisals.

An approach for the development of people

Continuous skills improvement and the endorsement by every employee of the requirements of excellence are the keys to individual and collective performance. This was the premise of the “Performance, Development and Career” program that was deployed in 2013, with the goal of evaluating employee performance, developing behavioral skills that link in to the new corporate culture, defining individual development plans, and strengthening discussion of career development.

In 2013, managers were trained in a new annual assessment interview tool, the PDCR*, designed to promote employee development in a single Group-wide process. This tool will be gradually rolled out to the sites. The program includes training to improve skills in management and executive leadership. In 2013, these modules were adapted to the new challenges and supplemented by professional “Academies”, focusing on business skills.

Social dialogue to guarantee responsible management

In line with its goal of responsible growth, the Group is careful to move ahead within a framework that guarantees employees’ safety and well-being at work, and respect for their fundamental social rights. This is the subject of the social responsibility agreement signed in 2013 with IndustriALL Global Union, a global federation of chemical workers *(p.36)*.

* Performance, Development and Career Review.

Commercial academy: a tool for achieving excellence

A priority for GBUs in 2013, commercial excellence is one of the programs that the Group provides through its “Commercial Academy” to marketing and sales employees. This unique cross-cutting course trains participants to marketing fundamentals and to value-capturing mechanisms.

Organized and mobilized around a shared vision

Solvay has structured its businesses into five Operating Segments, each with its own specific business model and each comprised of Global Business Units (GBUs) having similar growth dynamics and competitiveness challenges. Each GBU is responsible for its own strategy and has the operational levers with which to implement it. All focus on a common goal: creating value for the Group while respecting their responsibility commitments.

Advanced Formulations

→ Net sales: € 2,432 million
REBITDA: € 369 million

A growth engine for the Group, the innovative offering of this Segment is aligned with major societal trends: population growth, new consumption patterns, etc.

Advanced Materials

→ Net sales: € 2,551 million
REBITDA: € 646 million

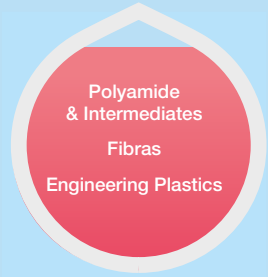
Another growth engine and a leader on markets with high entry barriers, the cutting-edge actvities of this Segment generate high returns on investment.

Performance Chemicals

→ Net sales: € 3,125 million
REBITDA: € 724 million

Operating on mature markets with low cyclicality, this Segment's success is based on economies of scale, competitiveness and quality of service.

Functional Polymers



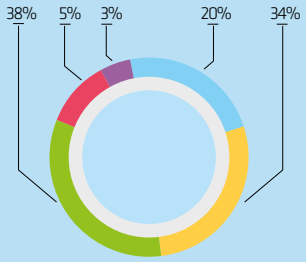
→ Net sales: € 1,763 million
REBITDA: € 93 million

The key success factors of this Segment, which primarily groups the Polyamide activities, are continuous manufacturing optimization and innovation.

Corporate & Business Services

→ Net sales: € 67 million
REBITDA: € - 169 million

This Segment brings together the functions and services charged with achieving the Group's objectives of operational excellence, energy efficiency and collaborative innovation.



→ Adjusted REBITDA by Operating Segment*

- Advanced Formulations
- Advanced Materials
- Performance Chemicals
- Functional Polymers
- Corporate & Business Services* (Energy Services only)

* *Excluding Corporate costs.*

Following the agreement in principle signed on May 7, 2013 by Solvay and Ineos to combine their Chlorovinyls activities within a 50/50 joint venture and notification of the project to the European Commission, Solvay's Chlorovinyls activities are now presented as "Assets held for sale" in the balance sheet and in the income statement under "discontinued operations". As such, they are not included in the above presentation. Moreover, those compounds activities in Chlorovinyls (Plastic Integration) which are not included in the proposed joint venture with Ineos have been presented as "Assets held for sale" since December 31, 2013.

Advanced Formulations

As growth engines for Solvay, the Advanced Formulations activities are characterized by their strong capacity for innovation and their low capital intensity. In line with the major trends in society, their offerings contribute to advances in mass consumer markets, the environment and energy.

Novecare

→ **The world's leading producer of specialty surfactants; major player in the polymers, guar and phosphorus derivatives markets**

→ **2013 net sales: € 1,581 million - 28 industrial sites***

_Novecare develops leading edge technologies that affect the behavior of fluids to give them cleansing, softening, moisturizing, hydrating, gelling, texturizing, penetrating or dispersing properties. Its products are found in shampoos, detergents, paints, lubricants, plant protection, mining and oil extraction.

Since 2010, the GBU has been engaged in an ambitious growth strategy directed at supporting expanding consumer markets, particularly in Asia. It also invests in niche markets with a range of high-added-value specialties. Novecare relies on a global network of 28 production sites and 10 R&I centers and labs that develop innovative solutions to sustainable development issues.

Increased positions in the US energy market

Identified as a reference partner by oil and gas extraction operators, the GBU has expanded its specialties portfolio with the acquisition of the US corporation Chemlogics. This brings Novecare recognized know-how in custom formulations for well stimulation and cementing, and significantly strengthens its presence on the booming US energy market. The GBU is today able to offer major oil players a full range of innovative products and technologies for extracting oil and gas more competitively and sustainably, with enhanced water management.

Surfactants: increased global capacity

Across the world, Novecare is boosting its manufacturing capacity to meet global market needs. In November 2013, the GBU doubled its surfactants production capacity in Latin America by acquiring the specialty chemicals assets of Brazil's Erca Quimica Ltda group. This opens the door wider to one of the world's largest markets for health & beauty and agrochemicals.

To better support its customers in Central and Eastern Europe, the GBU has begun building a new specialty surfactants plant at Genthin (Germany). This investment comes on top of those made in existing European sites to increase and optimize production.

The GBU also has begun building new alkoxylation [1] facilities in Texas (USA) and Singapore from which to optimize its →→

A creative value proposition for energy markets

Acquiring Chemlogics significantly expands Solvay's range of non-conventional oil and gas extraction technologies: Chemlogics' expertise in friction reductors, non-emulsifiers and natural extraction technologies complements the GBU's own expertise in surfactants, natural polymers and green solvents. Chemlogics' rapid innovation model and close customer relationships will also leverage the Group's expansion in North America.

Chemlogics in brief: 277 employees - Net sales: USD 500 million in 2013 - Assets: 3 plants with an annual production capacity in excess of 300,000 tons, 8 formulation centers and 6 research centers.

(1) Alkoxylation is a process for manufacturing monomers for producing surfactants.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

→→ supply lines to the highly dynamic construction and manufacturing industry markets.

Guar: a global offering of bio-based solutions

Novecare is strengthening its leadership in the guar derivatives market with breakthrough innovations that respond to strong demand for sustainable solutions from both the agrochemicals and oil sectors. Novelties placed on the market in 2013 include STARGUAR®, a "ready-to-mix" crop protection solution that allows operators to adjust dosages to local conditions.

The GBU has also significantly increased its production capacity. It has invested in its Vernon plant in Texas (USA), which delivers mainly to the North American oil extraction market. In China, the plant expansion at Zhangjiagang is in response to strong demand from the Asian health & beauty market. With its third production site at Melle (France), Solvay is the only player in guar derivatives that is able to accompany customers on three continents.

Coatis

→ **First Latin American producer of phenol and derivatives; leader in oxygenated solvents**

→ **2013 net sales: € 486 million - 1 industrial site***

_Coatis utilizes several levers to expand its business: substitute products that meet the current challenges of sustainable development, a historical presence in Latin America, a portfolio of competitive products and privileged access to bio-sourced raw materials (ethanol and glycerol).

Phenol and derivatives produced at the Paulínia site in the southeast Brazil are used in the production of synthetic resins employed in foundries, construction and abrasives. Its production capacity enables the GBU to supply the constant growth of the Latin American market and increases its market share.

Coatis' oxygenated solvents are used as a substitute for harmful solvents, due to their low toxicity, their biodegradability and their high solvent power.

In 2013, Coatis confirmed its development in bio-sourced solvents by expanding the AUGEO® range of innovative solvents produced from glycerin (a renewable feedstock derived from biodiesel).

The GBU has a project to produce bio n-butanol from bagasse, a renewable by-product from the crushing of sugarcane.

Biotechnology projects in Latin America

After piloting and establishing expected results with the Cobalt Technology company, Coatis has joined forces with a Brazilian biotechnology company, GranBio to build the first n-butanol plant at competitive cost using sugarcane residues. Their medium-term ambition is to build several bio-refineries alongside sugar plants in Brazil and in other Latin American countries. They are also keen to capture new markets with chemical companies.

** Number of sites where the GBU operates. A single site may be shared by several GBUs*

Aroma Performance

→ **World's number one producer of diphenols and fluoroaliphatic derivatives; world's number one producer of triflic acid, and of lithium salt for agro-pharmaceutical, electronics, and batteries markets; world's number one producer of vanilla flavorings for the food industry; world's number one producer of diphenol intermediaries for monomer producers to the petrochemical industry**

→ **2013 net sales: € 365 million - 5 industrial sites***

_Aroma Performance's growth strategy is based on a strong global presence, placing it very close to its customers, and on maximizing the potential of its two fully integrated production chains, diphenols and fluoroaliphatic derivatives.

The challenge: to meet global demand for vanillin

As the world's leading vanillin producer, Aroma Performance is the partner of choice for aromas and fragrances producers. Its leadership rests on its ability to meet strict food safety and environmental conservation regulations.

In 2013, the GBU expanded its portfolio of natural bio-fermented vanillins. Complementing its flagship brands, RHOVANIL® and RHODIAROME®, the new GOVANIL™ range opens promising horizons for food industry players looking to differentiate their product offerings.

To meet growing demand from its markets, Aroma Performance has doubled the capacity of its site at Melle (France) and begun construction of a new vanillin production unit at Zhenjiang (China), to come into operation in late 2014. These investments increase Solvay's overall vanillin production capacity by 40%. In support of this project, a center of expertise dedicated to the development and application of vanilla flavors, the Vanil'expert center, is being created in Asia, at the R&I facility in Shanghai. Another R&I center will open in Singapore in 2014 to support the needs of the GBU's customers in the region. Aroma Performance stands out as the most global player in its sector, with fully integrated production platforms in North America, Europe and Asia.

Proximity to fluoroaliphatic derivatives users

The GBU also produces synthesis intermediates for the pharmaceutical, agrochemical and electronics markets, along with monomer stabilizers for petrochemicals and energy storage solutions. Its fluoroaliphatic derivatives are increasingly used in electronic applications, while its lithium salts (LiTFSI) have become an essential component of Li-ion batteries for electric vehicles. As reference supplier to two subsidiaries of the Bolloré Group, a world leader in energy storage, Aroma Performance has doubled its capacity for these products on its French site at Salindres to support the growth of these markets. The GBU has also increased its presence in agrochemical industries, offering a new service for joint-developing molecules to measure.

Initial successes of the GOVANIL™ range

GOVANIL™ new generation vanilla flavors for the food industry have an intensity 20% above that of standard flavors and unprecedented long lasting taste. These properties serve in particular to offset reduced fats or sugars levels in recipes for cookies, chocolates and cakes. The range, available now in three products (standard, intensive and natural), is being marketed worldwide. In 2013 it took the ICIS innovation award. ICIS is a leading global provider of content and information on the chemistry and energy sectors.

** Number of sites where the GBU operates. A single site may be shared by several GBUs*

Advanced Materials

A leader in markets with high entry barriers and high returns on investment, the Advanced Materials Segment is a major contributor to the Group's performance and growth. The innovation capacities of its various activities, their global presence and the long-term partnerships they have forged with customers give them a clear competitive edge with industries that are seeking ever less energy-consuming and polluting functionalities.

Specialty Polymers

→ **World's number one producer of specialty and high-performance polymers**

→ **2013 net sales: € 1,288 million - 14 industrial sites***

_With over 1,500 products, Specialty Polymers offers the widest range of specialty polymers in the world. Its solutions derive from four technologies in which the GBU boasts unparalleled expertise: aromatic polymers – covering the full spectrum of high-performance polymer applications – high-moisture barrier polymers, fluoropolymers and high-performance cross-linkable compounds. Its value creation strategy is based on three levers: innovation, accelerated growth in markets with high entry barriers and operating excellence. Anticipating ever increasing worldwide demand for "clean" technologies and energy, the GBU is focusing its development on highly dynamic sectors like aerospace and transportation, water treatment, smart devices, energy and healthcare.

Specialty Polymers works with a network of 10 R&I centers and labs on three continents. The GBU generates one-third of its sales with products and applications that are under five years old.

Rapid fire innovation

To maintain a constant flow of new products and technologies, the GBU partners with its customers to design specific solutions. Thus, for the highly specialized subsea pipeline market, the GBU has developed an ultra-flexible PVDF: this extrudable fluoromaterial, with its specific application technology, facilitates the restoration of underwater pipelines.

In 2013, Specialty Polymers expanded its KALIX® range of high-performance plastics (APPS) for smartphones with three new ranges of bio-based polyamides: KALIX® 3000 – the first amorphous polyphthalamide (APP) – KALIX® 2000, a range of semi-crystalline polyamides with exceptional external impact resistance, and KALIX® HPPA 5000 halogenated flame-retardant polyamides. The mechanical properties of this latest innovation will enable it to replace certain metals, including aluminum and magnesium. →→

SOLEF® PVDF, a booming market

SOLEF® PVDF (polyvinylidene fluoride) is a polymer offering high-added-value in several key sectors, including transportation, alternative energy, electronics, water filtration, and oil extraction. For several years now, its expansion in high growth sectors has justified capacity increases across the world. In 2013, a new production line increased by 50% the production capacity at Tavaux (France), enabling the GBU to better serve a very active European market. The SOLEF® PVDF range is used especially in hybrid and electric vehicle batteries, in oil and gas extraction, in membranes for wastewater purification equipment, and for energy storage in electronic devices.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

→→ On the energy market, for which Specialty Polymers develops energy efficiency solutions, its membranes contribute to the advance of zero-emission cars and the development of alternative energy sources.

Strengthening our presence in expanding segments

Another priority of the GBU is to increase its presence in Asia, where it has significant R&I and production capabilities. Partnerships are key vehicles in implementing this strategy: the GBU has signed, with the Chinese company Shanghai 3F New Materials (SH3F), an agreement to create a joint venture to accelerate the production of specialty polymers in China. The new unit, based in Changshu in Jiangsu Province in China, will produce TFE fluoromonomers and PTFE high-performance fluoropolymers. This will enable Specialty Polymers to produce locally for the automotive, photovoltaics, lithium ion battery, water purification membrane and oil and gas applications markets.

To capitalize further on global demand for ever more lightweight, durable and recyclable materials, the GBU has acquired a shareholding in Aonix Advanced Materials, a developer of advanced composite materials and industrial systems. With this partner, Specialty Polymers will develop new thermoplastic compounds for sale across the world.

Silica

→ **Inventor of highly dispersible silica and world leader in applications for energy-saving tires**

→ **2013 net sales: € 416 million - 8 industrial sites***

_Silica provides innovative solutions for tire manufacturers along with applications for many other market segments: toothpaste, food, industrial products, rubber goods. The GBU develops its activity in close partnership with its customers, fed by innovation and a strong global presence.

The reference in the "green tire" market

Highly Dispersible Silica (HDS), marketed in the ZEOSIL® range, has become the reference in the tire industry, especially for energy-saving tires. Used to improve tires' rolling resistance, ZEOSIL® HDS products reduce a vehicle's fuel consumption by 5 to 7%. The international development of the HDS technology is supported by the stringent demands of the many government standards governing the automotive and tire industries.

Continuous geographical growth

In 2013, the GBU increased the production capacity of its Qingdao (China) site and began building a plant at Włocławek in Poland. These investments mark another step in the GBU's organic growth, following on the new factory in Qingdao (China) in 2010, and capacity increases in the United States (2011) and France (2012). By 2015, they will enable Silica to double its production capacity for highly dispersible silica as compared with 2009.

A new basis for expansion in Europe

With a capacity of 85,000 tons, the future Silica plant in Poland will produce several ranges of ZEOSIL®, including ZEOSIL® PREMIUM, a new generation of Highly Dispersible Silica for improving tire energy efficiency and performance. The GBU is well positioned to support the growth of its customers in Central and Eastern Europe and in Russia.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

Rare Earth Systems

→ **World's number one supplier of specialty rare earth formulations, with a global market share of over 25%**

→ **2013 net sales: € 298 million - 5 industrial sites***

_Rare earths is the generic term for 17 natural non-ferrous elements present as ores in the earth's crust. These are particularly prized for their exceptional catalytic, magnetic, luminescent or abrasive qualities.

Rare Earth Systems possesses unique technological expertise in the separation and processing of rare earths. Its products contribute to many innovations in use in everyday life, compact fluorescent light bulbs, LCD TV screens, semiconductors and capacitors for laptops and tablets, medical equipment, etc.

With its industrial know-how, global presence and R&I proximity, Rare Earth Systems has affirmed itself as a strategic partner for the automotive catalysis, electronics and phosphor powders recycling markets. The GBU is the leading global supplier to the automotive industry of additives for particulate filters and mixed oxides for catalysts. Also the leading world producer of cerium-based abrasives for semiconductors, the GBU strengthened its position in 2013 by launching ZENUS™, a high precision colloidal cerium oxide abrasive.

Since 2012, Rare Earth Systems has been developing a technology for recycling the luminescent powders contained in fluorescent lamps. This process helps preserve rare earth resources and ensure reliable supplies of terbium to the European market.

Special Chemicals

→ **World leader in fluor, strontium and barium-based specialties**

→ **2013 net sales: € 549 million - 21 industrial sites***

_For meeting customers' needs as closely as possible, GBU Special Chemicals relies on its leadership in leading edge technologies, its integrated materials sourcing, its manufacturing facilities, and a global R&I network.

The GBU provides high-added-value solutions to niche markets: automotive, electronics, high-performance materials, energy conservation and storage. Recognized as a benchmark in the industry, its flagship NOCOLOK® brazing flux is used in manufacturing aluminum heat exchangers for the automotive industry, for residential air conditioning systems and industrial heat exchangers. The GBU also produces blowing agents (SOLKANE®) for the thermal insulation market and fluorinated intermediates for agrochemicals. For the electronics market, it develops ultra-pure chemical processes in wet environments for semiconductors along with barium salts for passive components.

Innovation and geographic expansion are two strategic levers of Special Chemicals. The GBU is particularly active in Asia, where it is capturing the strong growth of regional automotive and electronics markets. In 2013, the Chinese joint venture Lansol, held in partnership with Sinochem Lantian, laid the first stone of a new NOCOLOK® plant, based at Quzhou (Zhejiang Province). The GBU has also set up a new R&I center in Korea to strengthen its research capacities in screens, electronics and energy storage.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

Performance Chemicals

Solidly cash-generating, the activities of the Performance Chemicals Segment are engaged in new programs of excellence to create sustainable value.
As of January 1, 2014, Essential Chemicals has been split into two GBUs – Soda Ash & Derivatives and Peroxides. In this way each can better develop its specific technologies and seize opportunities in different regions of the world.

Soda Ash & Derivatives

→**The world's leading producer of soda ash and sodium bicarbonate**

→**2013 net sales: € 1,351 million [1] - 12 industrial sites [2]**

_The production of soda ash and sodium bicarbonate, Solvay's historical activity, has grown continuously worldwide for 150 years, directly linked to population growth and increased purchasing power. Soda ash is used mainly by the glass and detergent industries. Sodium bicarbonate serves primarily the food and feed markets and the health sector, and is also used to neutralize acid flue gases. For example, the SOLVAIR SOLUTIONS® range helps manufacturers control their own air emissions.
In 2013, GBU Soda Ash & Derivatives announced the construction of the largest sodium bicarbonate production plant in Southeast Asia. Based in Thailand, by 2015 it will be producing over 100,000 tons of bicarbonate a year for Asia's rapidly growing food and health markets. Meanwhile, the GBU has launched an operational excellence and manufacturing capacity optimization program to increase, by 2015, its competitiveness in North America and Europe. In particular the GBU has opted to expand its natural soda ash business at Green River (Wyoming), United States.

Peroxides

→**Leading global supplier of hydrogen peroxide**

→**2013 net sales: € 405 million [1] - 16 industrial sites [2]**

_Hydrogen peroxide (H_2O_2) is mainly used by the paper industry to bleach pulp. Its properties are also of interest to many markets like chemicals, food, textiles and the environment. The world leader in this technology, Peroxides develops innovative applications and processes for these market segments. Its business is benefiting from the high consumption of paper pulp and from worldwide demand for high-added-value specialty derivatives. Innovation capacity and agility are two of GBU Peroxides' strengths. Thus, to meet the expectations of its customers in more remote areas (including South America), it rolled out in 2013 a new concept of mini-plants to be located at customers' manufacturing plants. Growing industrial demand for propylene oxide* is another growth driver: the GBU is leveraging here its unique expertise in building mega plants producing H_2O_2 as feedstock for propylene oxide in the framework of HPPO (Hydrogen Peroxide to Propylene Oxide) partnerships.

** An intermediate in the manufacture of polyurethane, a polymer widely used in many consumer products and industrial applications.*

HPPO: A mega plant to serve the Sadara (Saudi Arabia) chemical complex

In 2013, construction started on one of the world's largest plants to produce H_2O_2 as feedstock for propylene oxide. The unit is located at Jubail, Saudi Arabia, on the Sadara chemical complex. Operated by Saudi Hydrogen Peroxide Company, a joint venture recently formed by Sadara Chemical Company and the Solvay group, it will produce more than 300,000 tons of H_2O_2 per year. This is the third such mega plant operated by Solvay under partnerships, after the world's largest plant at Map Ta Phut (Thailand), and that of Antwerp in Belgium. In so doing Solvay consolidates its global leadership in a technology adapted to high-volume markets.

(1) 2013 restated figures in application of IFRS 11 are available on Solvay website, Investors section www.solvay.com
(2) Number of sites where the GBU operates. A single site may be shared by several GBUs.

Acetow

→ **Leading global producer of cellulose acetate tow for cigarette filters; number one in CIS and South America; number two in Western Europe; reference supplier of cellulose acetate flakes**

→ **2013 net sales: € 658 million - 4 industrial sites***

_Acetow is a reference partner for cigarette filter producers and a leading supplier of cellulose acetate flakes to the manufacturing sector. Acetow's cellulose acetate is produced from bio-sourced raw material in the form of wood pulp from sustainable forests. Its cellulose acetate tows cover all varieties of cigarette filters. Acetow offers innovative products and services: such as RHODIA FILTER TOW® for Micro Slim cigarettes, a new range of colored filters, RHODIA FILTER SORB™ for an improved filtration, and RHODIA DE-TOW™ for a faster degradation of the used filter. The GBU's growth strategy has two main pillars: maintaining the dynamism of its traditional activities and winning new markets by offering products that meet the challenges of sustainable development. Acetow has signed a license to manufacture and market the ACCOYA® acetylation technology, a process which increases the resistance of wood used outdoors. The GBU is also developing a cellulose acetate bio-plastic under the OCALIO™ brand, which is easy to mold and used in many common consumer products.

Speeding cigarette filter biodegradation

Innovations developed by Acetow include the RHODIA DE-TOW™ range with enhanced degradation compared to standard cellulose acetate. This solution exploits photo- and bio-degradation synergies to significantly accelerate the degradation process of cigarette filters.

Eco Services

→ **Number 1 in sulfuric acid regeneration in the United States**

→ **2013 net sales: € 288 million - 7 industrial sites***

_Eco Services is the leading player in sulfuric acid regeneration in the United States. The GBU works with major refineries on the West Coast and in the Midwest, the Gulf of Mexico and Canada. It also provides virgin sulfuric acid to US major industrial clients. Eco Services' performance is based on the reliability and quality of its service, its operating efficiency and its logistics expertise. In line with the Group's sustainable development commitments, Eco Services was in 2007 the first sulfuric acid producer to sign an agreement with the United States Environmental Protection Agency to reduce its environmental footprint. In early 2014 it attained its goal, reducing its total sulfur dioxide emissions by more than 90%.

Emerging Biochemicals

→ **Inventor and world leader in EPICEROL® technology; a leading producer of chlorovinyl in Southeast Asia**

→ **2013 net sales: € 424 million - 1 industrial site***

_The GBU Emerging Biochemicals groups the various activities to develop and produce chlorovinyl and epichlorohydrin based on EPICEROL® (1). Through the Thai subsidiary Vinythai Public Company Ltd, the GBU produces PVC resins sold under the SIAMVIC® brand, along with caustic soda in the form of a solid water-soluble base. It is the world's number one producer of bio-sourced epichlorohydrin, or EPICEROL®, an innovative technology based on the conversion of glycerin. Competitive and with a significantly reduced environmental footprint, it offers a high-performance alternative to the conventional method. In Thailand, the GBU has obtained the "level-4 green industry certificate", high CSR distinction awarded by the Thai Ministry of Industry. The Industrial Estate Authority of Thailand has also presented it with a Golden Trophy for its environmental and social initiatives.

(1) Raw material used in the production of epoxy resins.

Strengthened partnership with AkzoNobel

In 2013, Solvay concluded a three-year renewable contract to supply AkzoNobel, the world's number one paints and coatings producer, with EPICEROL® bio-sourced epichlorohydrin. AkzoNobel's strategy is to steadily increase the share of sustainable solutions in its products.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

Functional Polymers

As part of its portfolio optimization strategy, the Group has refocused its Operational Segment on the Polyamide chain. Solvay is one of the few players to control the entire polyamide 6-6 chain. Given the cyclical nature of its markets, the GBUs in this Segment have launched major competitiveness enhancement programs. They have also opened new markets by launching innovative solutions.

Polyamide

→ **2013 net sales: € 1,557 million - 16 industrial sites***

Polyamide & Intermediates

→ **A leading world producer of polyamide 6-6 and adipic acid**

_Polyamide & Intermediates (P&I) supplies a wide variety of markets including engineering plastics, textiles, industrial fibers and yarns, varnishes and adhesives, and leather processing. In 2013, the GBU started a program of business excellence and improving the flexibility of its industrial tools. P&I has also invested in optimizing the energy efficiency of its adipic acid production chain at Chalampé (France), which will significantly reduce energy costs. To achieve its objective of profitable growth, the GBU is looking to its mastery of its production process, to its added-value specialties, and to the launch of new polymers and molecules.

Fibras

→ **Latin America's number one manufacturer of polyamide (nylon)**

_Fibras produces polyamide 6.6-based yarns and fibers used in many textile and industrial applications. With a strong focus on innovation, Fibras has developed specific expertise in designing yarns for smart textiles. Marketed under the AMNI® and EMANA® brands, these innovations are recognized by Brazil's health authorities. The EMANA® fiber includes bio-crystals that interact with body heat. EMANA® is particularly appreciated by textiles manufacturers for its beneficial cosmetics effects to skin and to improve athletic performance. In 2013, the integration of EMANA® with denim fabric created the first "technological jeans" in the world, opening vast new global prospects for the brand.

Engineering Plastics

→ **Global specialist in polyamide 6.6-based solutions**

_Engineering Plastics designs, manufactures and sells, under the TECHNYL® brand, a full range of high-performance materials. Their mechanical, thermal and fire resistance qualities meet the expectations of demanding markets, including automotive and transportation, construction, energy, consumer goods and industrial equipment. In 2013, Engineering Plastics celebrated the 60th anniversary of its TECHNYL® brand by segmenting its solutions into four differentiated offerings: metal replacement, fire protection, thermal management and fluid barrier. Involved at an early stage in its customers' projects, the GBU offers its unique expertise in advanced simulation and prototyping, dedicated application testing and certified laboratories. This approach has given birth to SINTERLINE TECHNYL POWDERS™, a range of powders for laser prototyping, enabling complex 3D parts to be produced in record time.

TECHNYL®ONE: pushing the boundaries

In 2013, Engineering Plastics launched TECHNYL®ONE, a new patented technology designed to help electrical equipment manufacturers meet the challenges of miniaturization. Launched at the Kunststoff fair in Düsseldorf (Germany), it offers higher electrical performance than standard high-performance plastics while eliminating corrosion problems.

Following the agreement in principle signed on May 7, 2013 by Solvay and Ineos to combine their Chlorovinyls activities in a 50/50 joint venture and notification of the project to the European Commission, Solvay's Chlorovinyls activities are now presented as "Assets held for sale" in the balance sheet and in the income statement under "Discontinued operations". As such, they are not included in the presentation above. In addition, the compounds activities within Chlorovinyls (Plastic Integration), which are not included in the proposed joint venture with Ineos, have been presented as "Assets held for sale" since December 31, 2013.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

Corporate & Business Services

This Segment includes the GBU Energy Services offering of energy optimization programs for the Group and for third parties. It also includes the Corporate functions that are responsible with GBUs for defining and deploying transversal policies that guarantee consistency within Group and Business Services, which handles all the Group's IT and business processes.

Energy Services

→ **Specialist in energy management**

→ **2013 net sales: € 67 million - 1 industrial site***

_The vocation of GBU Energy Services is to improve the energy consumption and contribute to the reduction of the CO_2 emissions of Solvay – with a target of impacting REBITDA by over € 100 million in 2016. Solvay itself is Energy Services' number one client. The GBU's mission here is to optimize energy purchases (€ 1 billion in 2013), to deploy the Solwatt energy efficiency program on Group sites, and operate an installed global energy self-production capacity of 1,000 MW.

Expertise made available to industry

Energy Services offers to third-party industrial entreprises expertise developed for Solvay.

Its Energy & CO_2 Management Services (ECMS) proposes to reduce the latter's overall energy costs by 10 to 20%, through competitive access to energy and to CO_2 management and energy efficiency services. The GBU also offers manufacturers an opportunity to optimize the profitability of their energy production facilities at European level.

Anticipating future trends in the energy market, Energy Services is developing Cleantech activities based on research into innovative alternative energy sources.

In 2013, Energy Services created with CDC Climat (100% subsidiary of the French *Caisse des Dépôts*) and with Marubeni a joint venture to finance energy efficiency projects in the Euro zone. The first investment by this joint venture was made at Solvay's rare earth's plant at La Rochelle (France).

Solwatt for a culture of energy efficiency

The Solwatt program was initiated in 2011 to assist Solvay's industrial sites in gradually reducing their energy consumption. The aim is to reduce these costs by at least 10% in three years and create a sustainable culture of energy efficiency in these entities.
The continuous improvement plans, covering processes, production, and maintenance, being implemented under the program involve all employees at each site.
Today the program is deployed in 33 Solvay units – representing 59% of the Group's energy bill.
Outcomes are in line with objectives. In 2013, Solvay began marketing Solwatt to third parties.

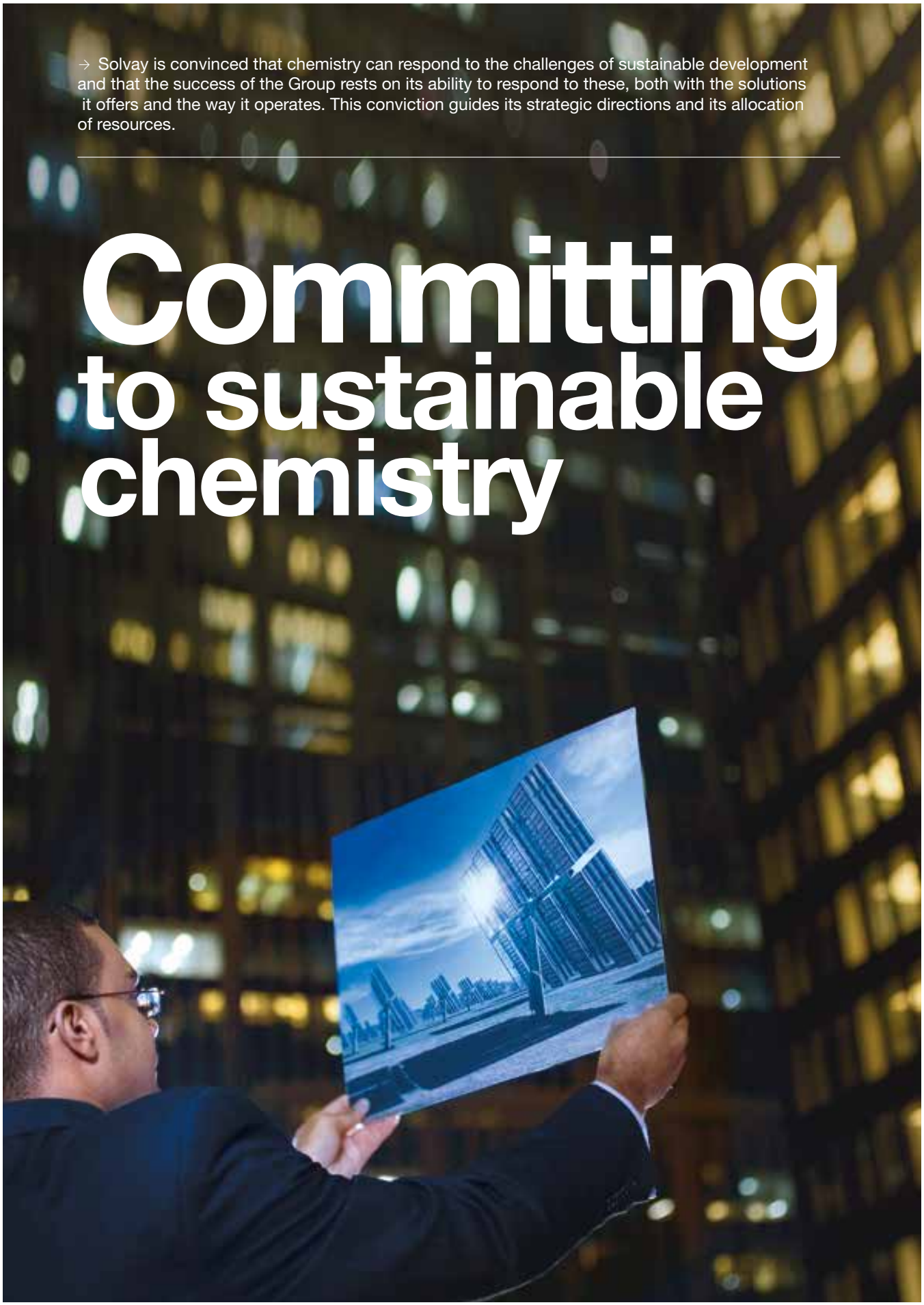
Business Services

_Business Services groups, in a single organization by process, all of the Group's IT services and its main administrative departments (accounting; credit, customer service, customs; payroll and personnel administration; supplies). Business Services serves daily thousands of Solvay customers and employees around the world. In 2013, Business Services initiated its transformation into a global shared services organization, with the goal of making the Group a benchmark for quality service, process efficiency, cost optimization and value creation.

** Number of sites where the GBU operates. A single site may be shared by several GBUs.*

→ Solvay is convinced that chemistry can respond to the challenges of sustainable development and that the success of the Group rests on its ability to respond to these, both with the solutions it offers and the way it operates. This conviction guides its strategic directions and its allocation of resources.

Committing to sustainable chemistry



Sustainable development: an opportunity for chemistry

The "Solvay Way" social and environmental responsibility initiative plays a central role in the Group's vision of building a model of sustainable chemistry. A lever for growth, Solvay Way is intended to develop, through responsible production practices, a sustainable chemistry that is respectful of the planet and contributes to the emergence of safer and healthier lifestyles and consumption.

Jacques Kheliff, Solvay Group General Manager Sustainable Development

"Pragmatism and mobilization"

Solvay Way converts our ambition for more sustainable development into concrete action. We have conceived this demanding approach and the associated reference guide in such a way that each player in the Group, from manager to operator, can commit personally to the Group's sustainable development engagement. The strength of this approach lies in its pragmatism. Integrating existing programs and indicators, it does not seek to revolutionize, but to question, inviting each entity, and each employee, to ask themselves what impact their activities, their practices, their processes, and their products have on their stakeholders. All our employees, at all levels, have specific roles to play in Solvay Way. This is why 10% of the variable remuneration of our 7,500 managers is linked to CSR, sending a strong sign of Solvay's commitment to sustainable development. Already, 100% of the Group's entities have evaluated their practices and determined their lines of progress for 2014: this rapid adoption reflects strong internal mobilization and constitutes a guarantee of success for the realization of our 2020 objectives.*

**CSR: Corporate Social Responsibility.*

_Sustainable development is a major concern for chemists. Their fundamental role in the transformation of natural resources into industrial resources requires them to take responsibility for their products' socio-economic effects and environmental footprint. Solvay was a forerunner in taking these issues into account in its processes and practices.
Today, the Group has made sustainable development a driver of its strategy and the majority of its activities are already directed towards markets that reflect the requirements and opportunities linked to challenges facing the world today.
Deployed in 2013, the Solvay Way responsibility initiative aims to accelerate the Group's progress towards sustainable chemistry. Its primary objectives remain: attaining excellence in safety, health and professional hygiene for people on its sites; achieving a growing share of turnover with products responding to the challenges of sustainable development, continuously improving the performances of its technologies and processes, reducing its environmental footprint, and developing a rich and balanced social dialogue. Anchored in the everyday reality of the Group's professions, Solvay Way is implemented by benchmarking against Group best practices.

Commitments at the highest level

Solvay has chosen to align its initiative with the most demanding global references. As a signatory to the United Nations Global Compact, the Group publishes a detailed report on its activities annually. The Group also adheres to the obligations of the "Responsible Care" global charter, a continuous improvement program initiated by the chemical industry itself, and to the OECD's Guiding Principles for Multinational Enterprises.

For further details, readers are referred to the Sustainable Development Report www.solvay.com.

Solvay Way for 360° responsibility

_The Solvay Way reference framework consists of 48 lines of improvement, structured under the form of 23 commitments to stakeholders. This grid is used by the entities of the Group to evaluate their practices.
In 2013, under the leadership of Sustainable Development management and supported by a network of 200 correspondents and champions, the framework was deployed across all the Group's sites, which have undertaken their first self-assessments. This annual review has permitted them to define action plans to facilitate further progress in the way they go about their professions.
The Solvay Way framework conforms to the new international standard ISO 26000 and its performances are evaluated and verified each year by external audit. Solvay is an active member of the IIRC (International Integrated Reporting Council) and is part of the pilot working group which aims to integrate key financial and extra-financial data in a single report.

Priority objectives for 2020

Solvay has identified 13 priorities around five themes relating to preservation of the environment, innovation, safety and employee development. These include a 10% reduction in greenhouse gas emissions and primary energy consumption, and a 25% reduction in air emissions of potentially acidifying substances. Wide-ranging action will be taken to ensure all new products meet the highest standards as measured by the Sustainable Portfolio Management (SPM) tool. The Group also commits to undertake a risk analysis of each of its sites over the next five years and to train all its employees in the Solvay Way initiative.

Commitments to stakeholders

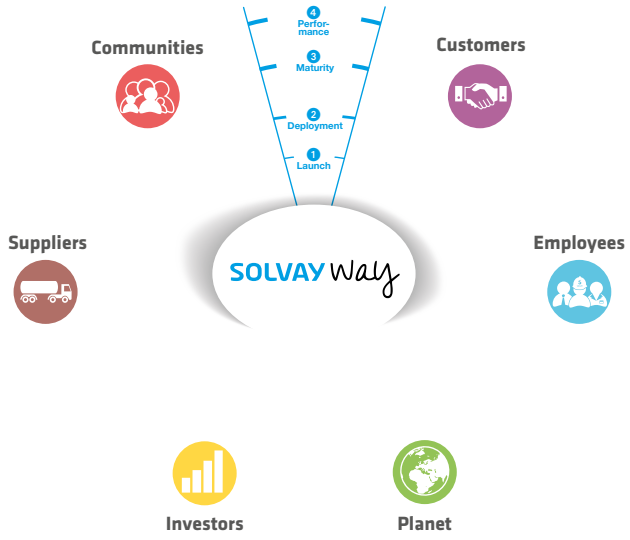
Customers_Solvay is committed to innovating, analyzing and developing its markets by integrating CSR and applying its CSR approach in its relations with its customers, particularly in terms of controlling product-related risks.
With clients facing increasingly stringent regulations and ever more demanding consumers, Solvay watches over the safety of its products throughout their lifecycle and works continuously to reduce their environmental and social impact. Listening to markets, the Group is developing a forward-looking vision that →→

5 action lines

1. Achieving excellence in **safety, health and occupational hygiene** for everyone on our sites.
2. Realizing an increasing share of our **sales** in markets or with activities that meet the requirements of sustainable development.
3. Continuously improving the performance of our technologies, processes and products and our understanding of them, so as to reduce their **environmental impact and prevent damage** to people throughout the lifecycles of our products.
4. Reducing greenhouse **gas emissions, energy and water consumption**, and negative impacts on soil, water and air quality, as well as the use of resources, especially non-renewable ones.
5. Developing a **wide-ranging and balanced social dialogue** with employee representatives at national and international level.

→→ anticipates customers' needs and guides its R&I. All innovations are evaluated against the criteria of the SPM methodology.

Employees_Solvay is committed to providing its employees with safe and healthy workplaces. It guarantees them respect of their fundamental social rights and fair treatment. It is also committed to promoting the quality of social dialogue and employee engagement.



A pioneer in the realm of social policy, Solvay views the Group's talents as its main asset and developing them as part of its mission: it is committed to developing its employees' skills and employability.

Planet_Solvay is committed to promoting environmental management, conserving natural resources, reducing the environmental impact of its activities, conserving biodiversity and exercising a responsible influence in its various environments. Solvay's ambition is to offer a chemistry whose products and operating processes are increasingly respectful of the environment. The Group is keen to reduce the environmental footprint of its manufacturing processes and to improve energy efficiency. Priority is given to the use of renewable and recycled materials, while consuming less and less energy and resources. Preservation of water resources is an essential line of action: the goal here is by 2020 to reduce by 20% the emissions of substances with a eutrophication potential and by 10% the use of groundwater and drinking water.

Investors_Solvay is committed to generating value and to managing risk in a responsible manner, to ensuring the dissemination of and compliance with good management and governance practices, and to communicating in an ethical and transparent manner. By adopting the most stringent governance practices, publishing its results and the Group's strategic vision

Jyrki Raina, General Secretary of IndustriALL Global Union

"IndustriALL: a global agreement that enables us all to move forward"

Our mission is to ensure that multinational groups act in a proper and dignified manner that respects the rights of their employees worldwide. The global CSR agreement signed with Solvay is an important step in our action. It establishes that social dialogue can be envisaged at an international level, and has much to offer to a global group. Solvay undertakes to respect international labor standards in all its activities - including those countries that have not ratified these conventions. It also undertakes to have its practices assessed on-site. This is a very committing process, for both Solvay and for us. Each year, we will conduct two on-site evaluation missions: one focused on safety, the other on the implementation of the agreement in all its aspects - environmental protection, wages, supplier relations. Specifically, our representatives will meet employees to examine the Group's practices in situ *and suggest areas for improvement. This agreement embodies IndustriALL's vision of social dialogue as a source of mutual progress, a vision that we are pleased to see shared by Solvay.*

Enhancing the sustainability of procurement

Solvay is a participant in the creation and implementation of "Together for Sustainability", an initiative by six major chemical companies to strengthen the transparency and sustainability of procurement practices. This initiative rests on regular audits and assessments of suppliers' responsible practices, based on social and environmental criteria. The benefit for suppliers lies in having to fill out a single form, accessible to all principals on an online platform. In 2013, during the pilot phase, Solvay conducted over 500 assessments and audits.

Recognized extra-financial

In 2013, the Group's CSR performance was recognized by its inclusion into the DJSI Europe index. Solvay is also referenced in the FTSE4Good and NYSE Euronext Vigeo World 120 extra-financial indices.

on a regular and complete basis, Solvay meets the requirements of transparency and rigor demanded by market authorities and expected by investors. Its recognition by extra-financial rating agencies in 2013 contributes to the value of the Group.

Suppliers_ Solvay is committed to evaluating the CSR performance of its buyers. It is also committed to optimizing relationships with its suppliers in this area with two priorities: defining the responsibility prerequisites it expects them to meet and integrating these into its selection procedures, and managing and evaluating their CSR performance. The Group wishes to establish relationships of trust with its suppliers, based on clear and shared ethical principles established with the goal of creating sustainable value for all. The involvement of suppliers alongside the Group is fed by information campaigns, regular meetings, training, and assessments.

Communities_ Solvay is committed to the sustainable integration of its sites in their local areas by controlling both manufacturing and supply chain risks, and by an ever more robust prevention approach. Solvay has established relationships of trust with its site neighbors, through dialogue, clear information and strict control of risks and inconvenience to them. Flows of transport are subject to special vigilance, involving the entire supply chain.

Joel Quintart, Occupational Safety Corporate Process Manager

"Embedding our safety culture in employee behavior"

One of Solvay's priorities is to constantly reduce its MTAR (frequency of work accidents requiring medical treatment). Two years ago we initiated a number of major risk-prevention operations, including taking apart and examining major accident-prone scenarios, systematically analyzing accidents, and launching awareness campaigns for managers and employees. The MTAR has dropped over the past two years from 2.92 to 1.06 accidents per million hours worked. The objective is to lower this figure further still by inducing behavior change, with operators receiving training in accident prevention reflexes. We will also be generalizing across the Group the improvements made to problem equipment.

On the ground

“Product safety: unparalleled expertise”

GRETA VANMARCKE, CORPORATE PROCESS MANAGER OF PRODUCT REGULATORY AFFAIRS & PRODUCT STEWARDSHIP

For us, managing our products responsibly means constantly improving and going beyond existing regulations, whether European, REACH, or national. This includes our voluntary monitoring at global level of “Substances of Very High Concern” (SVHC)[1] so as to restrict their use as much as possible. My team’s responsibility is to ensure the global implementation of these measures and to ensure the compliance of internal procedures. We are proud of the recognition this expertise earns us: for example since 2014 Solvay has chaired CEFIC’s[2] Strategy Implementation Group (SIG) for Product Stewardship.

“Testing our portfolio against the challenges of sustainable development”

MICHEL WASHER, DEPUTY CHIEF SUSTAINABILITY OFFICER

We have at Solvay a powerful tool: the Sustainable Portfolio Management Methodology (SPM). One axis of the SPM matrix measures the impact of our production processes; the other evaluates the alignment of our products with the requirements of sustainable development. We have already analyzed 65% of our net sales with this tool, and expect to have analyzed at least 80% by end-2015. Our goal is 20% of our net sales in the SPM “Star”[3] category in 2020. We are proud of this approach that is recognized as a reference, and that we shall be making available to everyone with the help of the consultant who helped us develop it.

“CSR: a driver for Solvay Way”

SANDRINE ROCHAT, GBU ENGINEERING PLASTICS – GLOBAL HSE & PRODUCT STEWARDSHIP MANAGER, SOLVAY WAY CHAMPION

As a “Champion”, I am responsible for promoting and deploying Solvay Way best practices in my GBU. Since 2013, 10% of managers’ variable remuneration has been correlated with the achievement of concrete sustainable development objectives. This ‘incentive’ has promoted effective deployment of the approach around the world and the rapid realization of our two main objectives for the year: the referencing of the Group in major extra-financial performance indices and, at all sites, training, mobilizing teams and carrying out Solvay Way self-assessments.

“Energy Transition: an offering adapted to the challenges”

PHILIPPE ROSIER, PRESIDENT OF ENERGY SERVICES

For Solvay, energy transition is at once a challenge and a promising market. Our contribution takes many forms, through our environmentally friendly processes and also our participation in bringing to maturity the energies of the future. One example is the water-saving solutions we propose to the very dynamic gas extraction market in the United States. In the field of new energy, we are investing in the production and distribution of torrefied biomass, that can replace coal for electricity generation and large-scale heating. We are also deploying our Solwatt energy efficiency program at Group sites, with the goal of paring back the Group’s energy consumption by another 10% by 2020.

(1) These include substances identified by the REACH program as carcinogenic, mutagenic and toxic for reproduction (CMR), and endocrine disruptors.
(2) European Chemical Industry Council. (3) SPM Star: aligned with the needs of sustainable development AND experiencing accelerated growth.

→ Solvay conducts scientific research and innovation for excellence in order to develop products and processes that are at once efficient, competitive and sustainable. This reflects the Group's priority of helping to create solutions that meet the present and future needs of a planet, which will soon number 9 billion inhabitants.

Constantly reinventing ourselves

6,503 km traveled without fossil fuel in the United States: mission accomplished for the Solar Impulse.

Innovation, a key lever of growth

Our planet is undergoing substantial changes linked to human activity, with major underlying issues: access to health and well-being, climate change, and resource scarcity. To these Solvay has opted to devote its research and innovation: 22% of net sales in 2013 consisted of products, technologies and applications less than five years old(1).

_Fired up by Solvay's pioneering spirit, Research and Innovation (R&I) is tasked with contributing to the responsible growth of the Group with reference to societal megatrends.

Six R&I areas to meet the challenges of the future

R&I is focusing its efforts on six areas of innovation that it has identified as crucial for sustainable growth.

Advanced materials: The Group's expertise in polymers and formulation enables it to design new, lighter, safer and more efficient functional materials.

Sustainable energy: Solvay is helping to develop alternatives to fossil fuel consumption: new generation batteries, photovoltaics, bio-energy.

Organic electronics: Solvay is developing increasingly less expensive, higher performance and resistant materials to improve the sustainability of lighting devices and screens.

Eco-designed processes: Solvay is developing breakthrough innovations for itself and its clients, offering diminished raw materials and energy consumption, reduced emissions and lower investment costs.

Advanced formulations: Solvay's formulation expertise is enabling it to create responsible products that provide solutions to global issues or contribute to the health and well-being of consumers.

Renewable chemistry: innovation in renewable or recycled raw materials contributes to the evolution of Group products and processes.

A global, interconnected and open network

Backed by a global network and fed by external input, Solvay R&I is configured to capture innovation opportunities and turn them into high-value practical, sustainable and creative applications for the Group and its markets.

Louis Neltner, Solvay General Manager Research & Innovation

"At the heart of a global innovation ecosystem"

At Solvay, we are convinced that we can grow only through exposure to other mindsets and approaches. Our close relationship with academia around the world, especially in mixed laboratories, is enriching our work with the long-term vision of basic research. In Europe, we are working with other chemists in competitive clusters and institutes of excellence to advance green chemistry, environmental technologies and carbon-free energy. Collaborative research with our customers is also being systematized. Finally, we have chosen to invest, directly or through investment funds, in start-ups that have leading edge expertise in areas identified as vital to the future: biotechnology, photovoltaics and advanced materials. For example, our partnership with Aonix Advanced Materials will accelerate the development of recyclable, lightweight, and high-performance thermoplastic composite materials, especially for the electronics market.*

** Solvay has developed close partnerships with France's National Centre for Scientific Research (CNRS) and several universities across the world, working in joint laboratories: Advanced Polymers in Lyon (France), Laboratory of the Future in Bordeaux (France), Complex Fluids in Bristol (USA), National Scientific and Technological Laboratory for Bioethanol (Brazil) and the Eco-Efficient Products Laboratory (E2P2L) in Shanghai (China).*

Innovation tools to match Asia's potential

In Asia, three major "Multi-BU" R&I centers are facilitating cross-fertilization between different markets and technologies. In Seoul (Korea), R&I is dedicated to electronics and engineering plastics. In India, the new Vadodara center focuses on renewable chemistry and materials science. The Shanghai (China) center is supporting the regional development of the GBUs, including a mixed eco-innovation research center, in which Solvay is partnering with Chinese and French universities. Solvay also has in Asia a dozen application, process improvement and innovation laboratories. These include the Singapore laboratory dedicated to health and beauty, agrochemicals and oil & gas.

The specific feature of Solvay R&I is to be global and interconnected. Its global network consists of 15 major R&I centers engaged in a dynamic process of cross-fertilization, 11 advanced laboratories, and 4 mixed units partnered with leading public research institutions and universities, along with numerous GBU-level, application-specific laboratories on four continents. This geographical proximity to markets and customers promotes relevant and rapid operational innovation.

In addition, the Group is firmly positioned at the heart of a global innovation ecosystem. Its policy of open innovation allows it to expand its vision, to complement its own skills from outside, and to identify long-term development opportunities. More than one hundred collaborative projects have emerged from joint research with customers, academia or cutting-edge expertise.

An excellence-directed approach backed by demanding tools

Just like the rest of the Group, R&I is committed to a continuous improvement process to increase its efficiency and shorten time to market. Our researchers work closely with Marketing and Industrial Functions on projects that meet the present and future needs of end markets. The criteria of responsibility, cost competitiveness, and consistency with main trends are applied well upstream. An eco-design approach, extending the existing Sustainable Portfolio Management (SPM) methodology, was introduced in 2013. This will gradually be applied to the entire portfolio of projects. In this way, each new project is evaluated to measure its environmental footprint and its societal acceptance throughout its life, from drawing board to implementation.

In France, the Laboratory of the Future[2] is designing "fast flow" tools and research methodologies to shorten the time-to-market of innovations.

(1) These terms include new products or existing products benefiting from new processes introduced in the last five years; directed at new or existing applications.
(2) Laboratoire du Futur: a joint research cluster of Solvay, CNRS and the University of Bordeaux-1.

Key figures

15
major R&I centers

1,950
employees

€280 m
R&I effort

80%
of Group R&I expenditure is managed by the GBUs

252
patents applied for in 2013

Ahead of the pack in sustainable mobility

The global transport market is growing, and with it energy consumption and CO_2 emissions. How do we control this growth and reduce its impacts? What alternatives can we propose? Faced with regulatories and consumers pressure, industrial transport sector specialists are looking for solutions. Solvay Research and Innovation makes available to them its expertise in materials structure and automotive pollution control, for improving existing and future technologies and preparing the future.

Lightweight materials for leaner consumption

→ The lighter a vehicle, the less energy it needs to propel itself. Solvay's ultra-lightweight, ultra-high performance engineering plastics can pare back a vehicle's weight by up to 20%.

→ These advanced materials, which are also fully recyclable, replace metal in many applications like structural parts (seats) and bodywork.

→ For complex engine block structures, high-performance foams and fire and shock resistant composite materials meet the most stringent standards.

Green technology for less polluting vehicles

→ Solvay's technological solutions contribute to reducing polluting particulate emissions.

→ Catalytic converters systems for petrol and diesel engines based on rare earths enable particulate filters to be completely regenerated at low temperature in a very short time. This technology can eliminate 99% of soot emissions from diesel car exhausts.

→ Highly dispersible silica is used to produce energy-saving tires, which directly contribute to reducing a vehicle's CO_2 emissions. Since being launched, they have saved the equivalent of almost 18 billion liters of fuel.

Contribution to success of electric vehicles

→ Economic competitiveness and long-term autonomy are the two prerequisites for the full expansion of the electric vehicle market.

→ Solvay has developed solutions (electrolytes, salts, binders, dividers) that improve the performance of lithium (Li-ion) batteries.

→ In a longer term perspective, researchers are developing a new generation of more efficient and safer batteries.

→ Solvay also designs fire-retardant materials and heat-resistant engineering plastics notably used for electric energy storage and management, thereby contributing to the emergence of hybrid and electric engines.

More performance under the hood

→ Solvay's fluoroelastomers improve the performance of fuel injectors and its high temperature-resistant polymers are used in turbo and air intake systems.

→ Researchers are also developing specialty polymers-based solutions for heat-management systems, which allow more effective seals to be produced at very low temperatures.

→ Solvay's heat-resistant engineering plastics ensure the safety of under-hood parts and improve engine efficiency.

Solutions for responsible energy management

With the planet's fossil energy resources dwindling, how do we go about ensuring alternative solutions? What course should energy transition take? How do we help consumers and industries improve their performances? Faced with these issues, of direct concern, Solvay R&I proposes impactful solutions. Its teams are working along two avenues: saving resources by optimizing consumption, and the competitiveness of alternative energies.

Promoting the emergence of alternative energies

→ Solvay's pioneering solutions increase the performance, competitiveness and attractiveness of existing processes and solutions.

→ In collaboration with players in the photovoltaic market; Solvay is developing new materials that improve the efficiency, durability and ease of use of solar panels.

→ Researchers are also developing new technologies to optimize the use of biomass as a source of energy.

Storage and recycling for optimized flows

→ In countries that encourage carbon-free energy, energy storage to meet peak demand is a major challenge.

→ Solvay teams are contributing to the development of new generations of lithium-based batteries, faster-charging and with greater storage capacities.

→ They are also looking at new catalytic processes for capturing and recovering carbon dioxide (CO_2).

→ The Group is exploring alternative avenues such as solar pond technology that can store solar energy in a body of salt water.

Reducing resources consumption

→ Solvay teams are developing industrial processes that optimize energy and resources consumptions and promote the recycling of raw materials and industrial discharges.

→ Solvay's solutions enable its clients to reduce their own consumption of resources. Solutions using surfactants, guar and polymers improve the efficiency of existing extraction processes in the oil and mining industry, increase recovery from mature fields, and substantially limit their impact on the environment.

→ In the United States, Solvay regenerates and recycles sulfuric acid for oil refineries.