

# Versalis

## Key performance indicators

		2009	2010	2011	2012	2013
Employees injury frequency rate	(No. of accidents per million of worked hours)	2.34	1.54	1.47	0.76	<b>0.76</b>
Contractors injury frequency rate		8.12	5.94	4.60	1.67	<b>0.30</b>
Net sales from operations <sup>(a)</sup>	(€ million)	4,203	6,141	6,491	6,418	<b>5,859</b>
Intermediates		1,832	2,833	2,987	3,050	<b>2,709</b>
Polymers		2,185	3,126	3,299	3,188	<b>2,933</b>
Other sales		186	182	205	180	<b>217</b>
Operating profit		(675)	(86)	(424)	(681)	<b>(725)</b>
Adjusted operating profit		(426)	(96)	(273)	(483)	<b>(386)</b>
Adjusted net profit		(340)	(73)	(206)	(395)	<b>(338)</b>
Capital expenditure		145	251	216	172	<b>314</b>
Production	(ktonnes)	6,521	7,220	6,245	6,090	<b>5,817</b>
Sales of petrochemical products		4,265	4,731	4,040	3,953	<b>3,785</b>
Average plant utilization rate	(%)	65.4	72.9	65.3	66.7	<b>65.3</b>
Employees at year end	(number)	6,068	5,972	5,804	5,668	<b>5,708</b>
Direct GHG emissions	(mmttonnes CO <sub>2</sub> eq)	4.63	4.69	4.12	3.69	<b>3.66</b>
NM VOC (Non-Methan Volatile Organic Compound) emissions	(ktonnes)	3.83	4.71	4.18	4.40	<b>3.93</b>
SO <sub>x</sub> emissions (sulphur oxide)	(ktonnes SO <sub>2</sub> eq)	4.59	3.30	3.17	2.19	<b>1.53</b>
NO <sub>x</sub> emissions (nitrogen oxide)	(ktonnes NO <sub>2</sub> eq)	4.78	4.87	4.14	3.43	<b>3.29</b>
Recycled/reused water	(%)	81.6	82.7	81.9	81.6	<b>86.2</b>

(a) Before elimination of intragroup sales.

## Performance of the year

In 2013, contractors injury frequency rate continued to follow a positive trend (down by 81.9% from 2012). Employees injury frequency rate remained unchanged.

In 2013 emissions of greenhouse gas and other emissions in the atmosphere improved from 2012 following the interruption of production at the Porto Torres site in the conversion phase. Further reductions were registered, particularly at the Mantova site for NO<sub>x</sub>, and NMVOC as well as at the Dunkerque site for SO<sub>x</sub> and NMVOC. Recycled/reused water rate improved, up to 86.2%.

In 2013, as part of the Product Stewardship, Versalis realized a specific database called Athos (Advanced tool for the handling of substances) which collects all the information necessary for the safe management, for employees and for the environment, of chemical products processed and utilized at Versalis sites.

In 2013 adjusted net loss amounted to €338 million with a decline of €57 million from 2012, due to a sharp decrease of cracker margins reported in the first half of 2012.

Sales of petrochemical products were 3,785 ktonnes, down by 168 ktonnes or 4.2% from 2012, due to decline in consumptions.

Petrochemical production volumes were 5,817 ktonnes, decreasing by 273 ktonnes or 4.5% from 2012, due to declining demand in all businesses. In particular, the steepest decline was reported in elastomers and polyethylene.

In 2013 overall expenditure in R&D amounted to approximately €39 million in line with the previous year. 10 patent applications were filed, one of which jointly with E&P.

### Expansion on international markets

As part of the expansion strategy in bioplastic sector and diversification from the commodity business, Versalis signed strategic partnerships with major operators in the field of biotechnology and rubber:

- with Genomatica, for the establishment of a technology joint venture for bio-based butadiene production from non-food biomass. The resulting process will be licensed across Europe, Asia and Africa by the newly-created joint venture. Versalis will invest over \$20 million in the development of process technologies and aims to be the first to license the process and build commercial plants;
- with Pirelli, a Memorandum of Understanding for joint research project for the use of guayule-based natural rubber in tyre production;

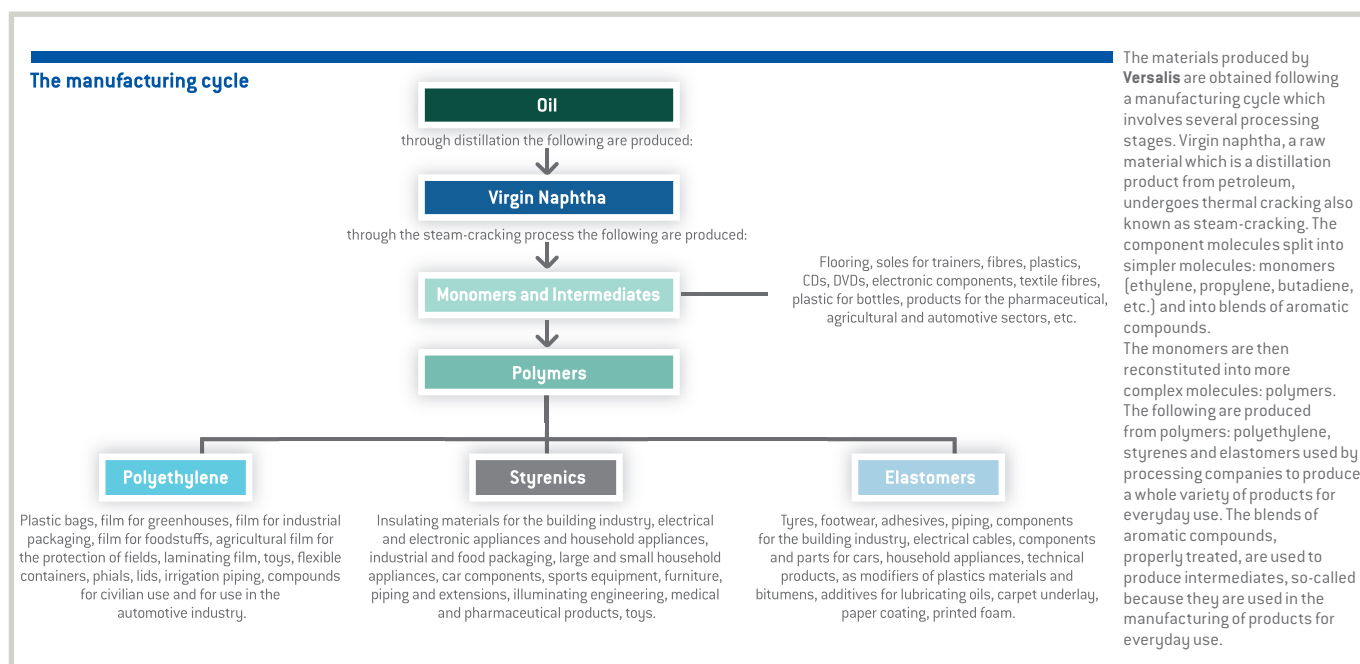
- with Yulex Corporation, an agricultural-based biomaterials company, for a project of guayule-based biorubber production and a launch of industrial production complex in Southern Europe. The partnership will cover the entire manufacturing chain. Versalis will manufacture materials for various applications, with a final goal of the optimization of the productive process in the tyre industry;
- with South Korean company Lotte Chemical, Versalis established a 50:50 joint venture, while with Malaysian company Petronas, Versalis signed a shareholders agreement. The agreements concern the development of joint production of styrene and elastomers, as part of the expansion process in the growing South-East Asian markets;
- with Neville Venture, Versalis signed an agreement of strategic partnership for the production of hydrocarbon resins at the Priolo plant and finalized a licence agreement related to the resins production for various applications such as adhesives, inks, coatings and rubber;
- with Elevance Renewable Sciences Inc., a United States chemical company, specialized in production of chemicals from vegetable oils, with a significant value added, Versalis signed a Memorandum of Understanding (MoU) for establishing a strategic partnership, in order to jointly develop and scale a

new technology for a production from vegetable oils, aiming at developing and scaling of new catalysts. The market applications of the future production will be specialties with a significant added value such as personal care products, detergents and cleaners, bio-lubricants and oilfield chemicals.

### Green Chemistry development

In the field of Green Chemistry, Versalis continued with the requalification the Porto Torres hub, in order to replace the traditional activities of the site with activities characterised by significant future growth perspectives, by realizing the products with an elevated biodegradability and/or produced from raw materials obtained from renewable sources. In 2013, Versalis completed the initiatives of restructuration and reorganization of the distribution network and storage at the Matrica plant.

In February 2014, Versalis reached an important agreement on the project of transformation and relaunch of the Porto Marghera site to redesign production facilities and regain competitiveness. Versalis expects to invest €200 million in Porto Marghera focused on the optimisation and reorganisation of cracker utilities, with significant energy savings, and on the new initiative of green chemistry.



### Activities

Eni through Versalis performs activities of production and marketing of petrochemical products (basic petrochemicals and polymers), leveraging on a wide range of proprietary technologies, advanced production facilities, as well as a large and efficient retail network present in 18 European countries.

Versalis' portfolio of patents and proprietary technologies covers the whole field of basic petrochemicals and polymers: phenol and its derivatives, polyethylene, styrenes and elastomers as well as catalysts and special chemical products.

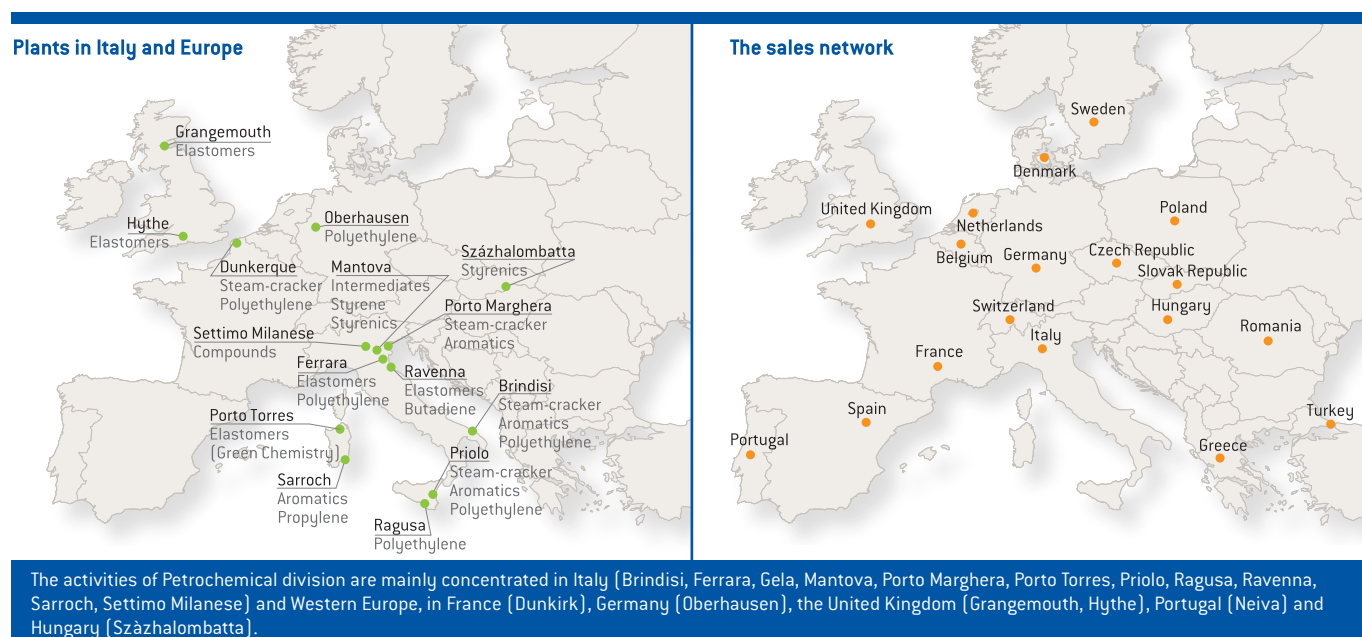
As a producer of intermediates, all types of polyethylene and a wide range of elastomers/latices and of the complete line of styrenic

products, Versalis continues in the development of its proprietary technologies supported by the experience it gained in production and R&D. This approach favoured the optimization of the design of equipment and plants, of their performance, of proprietary catalysts and other products that allowed it to achieve excellence in all technologies in the specific business areas in order to compete in markets worldwide. A key role is played by the most innovative proprietary catalysts, particularly those based on zeolites developed by Versalis as building blocks of some of its most advanced technologies and available worldwide.

The principal objective of basic petrochemicals is granting the adequate availability of monomers (ethylene, butadiene and benzene) covering the needs of further production processes: in particular olefins production is strictly linked with the polyethylene

and elastomers business, aromatics grant the benzene availability necessary to produce intermediate products used in the production of resins, artificial fibres and polystyrene. In polymers business Versalis is one of the most relevant European producers of elastomers, where

it is present in almost all the relevant sectors (in particular, in the automotive industry), polystyrene and polyethylene, whose most relevant use is in flexible packaging.



## Business areas

### Intermediates

Basic petrochemicals are one of the pillars of the petrochemical activities of Versalis, whose products have a range of important industrial uses, such as the production of polyethylene, polypropylene, PVC and polystyrene. In addition, they are also used in the production of other petrochemical intermediates that converge into a range of other productive processes: plastics, rubbers, fibres, solvents and lubricants.

Intermediates revenues (€2,709 million) decreased by €341 million from 2012 (down by 11.2%) reflecting mainly decreased volumes sold (down by 4.2%) and average unit prices (down by 1.9%), with different trends in each business: in the olefines sales volumes of ethylene decreased (down by 4%) due to the planned standstill at the Priolo plant and lower consumption, with prices slightly decreasing compared to previous year, while butadiene volumes reported a sharp decrease (down by 38%) driven by the weakness of elastomers market and the reduced average prices by 23% reflecting the consumption crisis. In aromatics, benzene sales volumes registered a decline of 7.4%, while xylene volumes increased by 7.5%, with average prices in line with 2012. Revenues from derivatives declined mainly due to lower volumes of phenol/derivatives (down 3.6%) due to lower availability of product following planned downtime at the Mantova plant, partly offset by 1.4% increase in average sale prices.

Intermediates production (3,462 ktonnes) registered a decrease from the last year (down by 133 ktonnes or 3.7%) due to reductions in olefines (down 5.7%) and derivatives (down 2.4%) driven by lower

utilization of Priolo cracking plant and lower production of butadiene (down 10.3%) affected by the planned facility downtimes at the Brindisi and Ravenna plants. These reductions were partly offset by higher aromatics production (up by 3% compared to previous year) due to higher xylene production.

### Polymers

In the polymers business Versalis is active in the production of:

- polyethylene that accounts for approximately 40% of the total volume of world production of plastic materials. It is a basic plastic material, used as a raw material by companies that transform it into a wide range of goods;
- styrenics, polymeric materials based on styrenes that are used in a very large number of sectors through a range of transformation technologies. The most common applications are in the industrial packaging and food industry, small and large electrical appliances, building isolation, electrical and electronic devices, household appliances, car components and toys;
- elastomers, polymers characterized by high elasticity that allow them to regain their original shape even after having been subjected to extensive deformation. Versalis has a leading position in this sector and produces a wide range of products for the following sectors: tyres, footwear, adhesives, building components, pipes, electrical cables, car components and sealing, household appliances; they can be used as modifiers for plastics and bitumens, as additives for lubricating oils (solid elastomers); carpet backing, paper coating, moulded foams (synthetic latex). Versalis is one of the world's major producers of elastomers and synthetic latex.

Polymers revenues (€2,933 million) decreased by €255 million from 2012, or by 8%, due to average unit prices decreasing by 19% and

lower elastomers sale volumes (down by 9.7%) due to the significant decrease in demand from the tyre and automotive industry. This negative performance was partly offset by higher average prices of styrene (up 7.5%) and polyethylene (up 1%) registered particularly in

the last part of 2013. Polymer production (2,356 ktonnes) decreased by 140 ktonnes from 2012 (down 5.6%), due mainly to a decline in production at the Ravenna plant and at English sites (Hythe and Grangemouth) reflecting market trends.

Product availability	(ktonnes)	2009	2010	2011	2012	2013
Intermediates		4,350	4,860	4,101	3,595	3,462
Polymers		2,171	2,360	2,144	2,495	2,355
<b>Production</b>		<b>6,521</b>	<b>7,220</b>	<b>6,245</b>	<b>6,090</b>	<b>5,817</b>
Consumption and losses		(2,701)	(2,912)	(2,631)	(2,545)	(2,394)
Purchases and change in inventories		445	423	426	408	362
		<b>4,265</b>	<b>4,731</b>	<b>4,040</b>	<b>3,953</b>	<b>3,785</b>

Revenues by geographic area	(€ million)	2009	2010	2011	2012	2013
Italy		2,215	3,131	3,364	3,172	2,758
Rest of Europe		1,701	2,632	2,747	2,826	2,704
Asia		169	139	182	271	238
Africa		76	127	101	84	126
Americas		39	108	93	61	28
Other areas		3	4	4	4	5
		<b>4,203</b>	<b>6,141</b>	<b>6,491</b>	<b>6,418</b>	<b>5,859</b>

Revenues by product	(€ million)	2009	2010	2011	2012	2013
Olefins		1,059	1,705	1,754	1,792	1,487
Aromatics		486	704	835	819	791
Intermediates		251	375	359	440	431
Elastomers		579	834	1,062	979	716
Styrenics		501	744	780	774	800
Polyethylene		1,140	1,597	1,496	1,434	1,418
Other		187	182	205	180	216
		<b>4,203</b>	<b>6,141</b>	<b>6,491</b>	<b>6,418</b>	<b>5,859</b>

Capital expenditure	(€ million)	2009	2010	2011	2012	2013
		<b>145</b>	<b>251</b>	<b>216</b>	<b>172</b>	<b>314</b>
of which:						
- <i>upkeeping</i>		28	59	59	25	66
- <i>plant upgrades</i>		58	116	53	53	170
- <i>HSE</i>		28	29	46	38	52
- <i>energy recovery</i>			45	42	41	8