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Transforming Versalis

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Daniele Ferrari
CEO



Transforming Versalis

Focus on specialties,
green chemistry, globalization

Versalis (Milan, Italy), the chemicals arm of the energy group Eni (Rome), is undergoing a transformation to give it greater focus on specialties and green chemistry and make it more international. In the five years through 2016, the company invested about €1.7 billion (\$1.8 billion), including €800 million for growth, in pursuit of these goals. Daniele Ferrari, CEO of Versalis, has presided over this strategy, which helped the company recover from losses in 2013 and 2014 to profits in 2015, two years ahead of the target set in the transformation plan.

▶ Natasha Alperowicz

In the last two years, Versalis has reported its best performance for 20 years as it transitioned from overdependence on petrochemicals to embrace specialty chemicals and green chemistry and internationalized its operations. “In 2016, Versalis recorded more than €300 million in adjusted EBIT and is free cash flow positive,” said Eni CEO Claudio Descalzi at an investor day in New York, New York, last December. This figure represents a remarkable turnaround from 2013 and 2014, when the company reported EBIT losses of €395 million and €347 million, respectively.

The restructuring focused on downsizing much of Versalis’s legacy petrochemical capacity, including closing several plants, and a portfolio shift toward value-added businesses. The turnaround has been masterminded by CEO Ferrari, a 30-year veteran of the chemical industry who was named CEO of Versalis’s predecessor company, Polimeri Europa, in 2011 and has continued in the same role at Versalis since 2012. Ferrari inherited a company that derived 70% of its sales from poorly back-integrated commodity products, with more than 90% of revenue coming from the mature market of the European Union.

Polimeri Europa and Versalis are the outcome of successive waves of restructuring of Italy’s previously fragmented chemical industry, a process that began in earnest in the 1980s. Eni, then state owned, became the virtual monopoly player in Italian petrochemicals in 1991, when it acquired the publicly quoted but heavily money-losing Enimont. This company had itself been formed less than three years earlier by EniChem, the umbrella company for Eni’s chemical interests, merging with Ferruzzi-Montedison, the flagship of Italy’s private sector petrochemical industry. Eni and Ferruzzi-Montedison each initially owned 40% of Enimont, and the company had a 20% free float. So when Eni bought out Enimont in 1991, Eni’s enlarged chemical interests returned to state ownership at a time when the Italian government had started to privatize the rest of its extensive industrial holdings.

Forming Polimeri Europa was part of a renewed drive to reenergize and privatize the Italian state’s energy and chemical interests. Polimeri Europa was originally established in 1995 as a 50-50 joint venture (JV) for

A NEW LEASE ON LIFE: The Porto Marghera site, near Venice, continues to produce ethylene.



ethylene and polyethylene (PE) between EniChem and Union Carbide at the same time as a minority stake in Eni was listed on the Italian and New York stock exchanges. Eni bought out Union Carbide’s share of Polimeri Europa when Carbide became part of Dow Chemical in 2001, the year Eni’s own privatization was essentially completed.

Despite these changes, Eni’s chemical business remained in limbo for several years without a clear strategy and with a largely demotivated workforce.

Ferrari’s appointment as CEO of Polimeri Europa in 2011 and the company’s rebaptism as Versalis the following year heralded a new sense of direction. In April 2013, at an analyst briefing in London, United Kingdom, Ferrari unveiled a new strategy, backed by Eni, to shift the company’s portfolio from commodities toward differentiated and green chemicals, internationalize the business, and make it profitable by 2017–18. He beat his profitability deadline by two years, with Versalis returning to profit in 2015.

Eni put Versalis on the block in 2015, hoping to off-load a 70% stake, on the condition potential buyers commit to adhere to Versalis’s transformation program. Discussions with the private equity firm SK Capital Partners, the owner of several chemical and related businesses in the United States and Europe, reached an advanced stage but collapsed in June 2016, when the two sides failed to resolve “certain issues, including the future governance of Versalis,” Eni says. Following termination of the talks,



GREEN CHEMISTRY: Matrica joint venture uses vegetable oils to make carboxylic acid and esters.

Eni reclassified Versalis as “an asset not held for sale.”

Ferrari stresses Versalis’s transformation was not derailed when Eni tried to divest the company. “Nothing stopped when talks were under way, and we continued with our transformation program and completed the turnaround,” he says. “We were quite gratified because, during the year of due diligence and different discussions with consultants, advisers, and others, we passed the stress test and received a very positive feedback.”

Versalis’s first priority in its transformation, in agreement with local trade unions, was fixing three problem sites in Italy: Porto Torres, Sardinia; Priolo, Sicily; and Porto Marghera, near Venice. These were the biggest money-losers up to 2012. The first success story was Porto Torres, which has been transformed from a site making petrochemicals into a highly integrated biobased manufacturing complex using

DOWNSIDED: Capacity of the Priolo complex has been halved under the transformation strategy.



vegetable oils as raw materials. In 2011, Versalis and Novamont (Novara, Italy), a producer of biodegradable plastics, formed Matrica, an equally owned JV that uses vegetable oils to produce mono- and dicarboxylic acids and esters. Its products are used in a range of applications, including cosmetics, pharmaceuticals, home-care products, and lubricants. It can also make a bioherbicide, pelargonic acid, that can replace glyphosate.

Converting the Porto Torres site included closing in 2011 ethylene, high-density PE, and aromatics plants. The Matrica complex is

currently ramping up, and customers are qualifying its products. “We are very confident that we will achieve capacity utilization in one year’s time,” Ferrari says. Matrica’s output will be sold mostly in Europe. The JV has a capacity of 70,000 metric tons/year and represents an investment of more than €200 million.

Meanwhile, Versalis’s “inefficient and oversized” Priolo complex—the largest petrochemical facility in the group—saw the permanent reduction in its ethylene capacity from 790,000 metric tons/year to 490,000 metric tons/year and the closure of a

160,000–metric ton/year linear low-density PE plant. The restructuring means PE is no longer made at Priolo, but the complex continues to supply ethylene to Versalis’s Ragusa, Italy, site, about 100 kilometers away, to make ethylene vinyl acetate copolymers.

Versalis had also decided to close the Porto Marghera cracker, which the company considered inefficient. However, changes in the petrochemical landscape caused by outages at several competing European plants have given it a stay of execution. Originally closed permanently in 2014, the cracker restarted at the beginning of 2015. “Porto Marghera is a wonderful story,” Ferrari says. “At the end of 2013, it was difficult to see the future of Porto Marghera and the economics of producing ethylene there,” he says. “Then a number of events started to make Porto Marghera useful again. One was the unfortunate outage of Shell’s cracker at Moerdijk, in the Netherlands.” That incident led to Versalis signing a supply agreement with Shell, which enabled Versalis to keep the 490,000–metric tons/year Porto Marghera ethylene plant going. “The contract with Shell allowed us to bridge the gap between a very unprofitable time and the change in ethylene markets,” Ferrari says.

The steep drop in the price of crude oil from mid-2014 has enabled Europe’s naphtha crackers to regain competitiveness, and Versalis has since signed three more ethylene supply agreements with undisclosed

The restructuring

	2011	2012	2013	2014	2015	2016
Optimization of assets	Porto Torres, Italy Permanent shutdown of cracker, PE and aromatics units		Gela, Italy Shutdown of PE plants Priolo, Italy Optimization of cracker and shutdown of PE plants	Hythe, UK Closure of the site Sarroch, Italy Spin-off/shutdown	Porto Marghera, Italy Overhaul of utilities and logistics. Cracker continues to operate	
Strengthening of portfolio	Dunkirk, France Reconfiguration of PE plant	Mantua, Italy New GPPS line and continuous mass EPS plant	Guayule NR Experimental fields in southern Italy	Porto Torres, Italy Start-up of Matrica plants Ravenna, Italy Start-up of butene-1 plant Ferrara, Italy Revamping of EPDM lines and adding EPDM line	Grangemouth, UK Start-up of new S-SBR line Ravenna, Italy New elastomers specialties Mantua, Italy Development of pilot plant for one-step breakthrough ABS technology	Priolo, Italy New C9 monomers plant
International development*		Versalis International Versalis Pacific Trading (Shanghai)	JV with Lotte Chemical Versalis Pacific India (Mumbai)	JV with Genomatica biobutadiene technology	Oilfield chemicals new business line Technology partnership with Mesnac (China)	Versalis, Americas

*In January 2017, Versalis signed a memorandum of understanding with Sonatrach (Algiers, Algeria) to develop a petrochemical complex in Algeria.

customers. The contracts are for three to five years each and can be renewed afterward, Ferrari says. They guarantee markets for ethylene from Porto Marghera until the end of 2019. The ethylene from Porto Marghera is being shipped worldwide, including to Asia. “Now we have the opportunity to have the cracker at Porto Marghera open and running at full capacity in the medium term, based on the three contracts and our internal use,” Ferrari says.

Versalis consumes some ethylene from Porto Marghera in its plants at Ferrara and Mantua, Italy, to produce ethylene propylene diene monomer (EPDM) and ethylene propylene (EP) copolymer rubber, PE, styrenics, and intermediates. The propylene is also used at Ferrara in EPDM and EP rubber production and by LyondellBasell Industries to make polypropylene. Versalis’s Ferrara complex is undergoing a €250-million expansion to increase EPDM capacity by 50,000 metric tons/year in 2017. The existing EPDM facility is also being revamped. The improvement in competitiveness has spurred investment in the Porto Marghera cracker, which will undergo a major turnaround in the fourth quarter. “It will be a big turnaround, including modernization and efficiency gains in the plant’s infrastructure and utilities,” Ferrari says.

Versalis is also planning a major parallel investment to create a biochemistry complex at Porto Marghera. The company agreed in 2014 with Elevance Renewable Sciences (Woodbridge, Illinois), a producer of specialty chemicals from natural oils, to establish a partnership to develop and scale up a new metathesis technology to produce biochemicals from vegetable oils. Engineering on the project is almost complete, and a final investment decision will be taken based on the technoeconomic outlook for these biomaterials. The project would involve “quite a substantial” investment, Ferrari says. The timing is not yet clear, but he says the project is included in Versalis’s four-year plan.

Other restructuring initiatives by Versalis in Italy included divesting assets at Sarroch, also in Sardinia, to the Saras refining group and permanently closing xylenes and ethylbenzene production at the site.

Outside Italy, Versalis operates a cracker at Dunkirk, France, designed to produce 420,000 metric tons/year of ethylene. The company is contemplating a partial conversion of this facility to use ethane imported from the United States in addition to the



ELASTOMER EXPANSION: More EPDM capacity is being added at the Ferrara plant.



A SHRUB WITH BIG POTENTIAL: Versalis has a number of guayule-growing fields in southern Italy.

The guayule flower.

current naphtha-LPG feed slate. However, this project is on hold because the investment cannot be justified at current oil prices.

Versalis is a major producer of elastomers. Its portfolio includes solution styrene butadiene rubber (S-SBR), emulsion SBR (E-SBR), polybutadiene rubber (PBR), acrylonitrile butadiene rubber, EPDM and EP rubbers, thermoplastic rubber, and synthetic latex. The company’s elastomers segment is also expected to benefit from green chemistry. Versalis has been collaborating with Genomatica to produce biobutadiene in a technology JV owned 80% by Versalis and 20% by Genomatica. The JV owns the technology for producing butadiene from

sugar. The partners announced in 2016 they had advanced to pilot-scale production at Genomatica’s San Diego, California, facility. Versalis has used the bioderived monomer to make PBR. “We have proven this technology and will soon be able to decide whether we will license the technology and/or contemplate future investment ourselves,” Ferrari says.

Another major green initiative involves using guayule, a renewable industrial crop, to produce natural rubber and terpene resins. Versalis and Yulex (Phoenix, Arizona), an agricultural biomaterials company, formed a partnership in 2013 to manufacture biorubber materials based on guayule.

FEEDSTOCK CONVERSION : The Dunkirk cracker could in future use ethane from the United States.



The partnership, however, was recently discontinued, although Versalis retains full rights to past Yulex know-how and patents. Versalis will either continue with the development alone or evaluate alliances with other potential partners, according to market opportunities. The company has a number of experimental fields growing guayule in southern Italy, Ferrari says. Among the intellectual property Versalis has retained are the rights to the Yulex technology to produce latex. “The latex is hypoallergenic and can be used directly in medical applications without any purification,” Ferrari says. Versalis is working to perfect the extraction process, which can be water based, according to Yulex’s technology, or solvent based.

“The objective would be to put up a complete biorefinery based on guayule where, on one side, it would produce the latex, and on the other, extract all of the products from the biomass that are left after crushing,” Ferrari says. The company plans to build a semi-industrial unit in southern Italy. Manufacturers of medical products and the tire industry are interested in latex derived from sources other than traditional rubber plantations. “Pirelli has already produced a totally green tire based on our guayule,” Ferrari says. Pirelli, a tire manufacturer, is one of Versalis’s committed future partners, but not the only one. “There is a lot of interest from other tire producers,” he says.

Versalis’s ambitions have widened to envisage possible investment in the United States, a larger presence in Asia and, more recently, a petrochemicals project in

feedstock-rich Algeria. The company is also willing to return as an active player in Iran, following the partial lifting of sanctions against that country.

In January, Versalis signed a memorandum of understanding with Sonatrach (Algiers), the Algerian state energy company, to carry out joint feasibility studies for an integrated petrochemical complex in Algeria. The deal follows a cooperation agreement signed by parent company Eni and Sonatrach in November 2016 and aims to upgrade hydrocarbons to value-added petrochemicals.

Meanwhile, the focus in the United States is on elastomers. “We have opened an office in Houston, Texas; and formed Versalis Americas to serve the North American and Latin American markets, and we are looking for opportunities to leverage our licensing activities and maybe enlarge our geographical presence in the US. We are talking to people and thinking about investing in elastomers. This is the only geographic area where we are not yet present. Elastomers are a global business: Our customers are global, and they want us to supply in the Americas as well,” Ferrari says.

In Asia, Versalis has established two commercial subsidiaries: Versalis Pacific Trading (Shanghai) and Versalis Pacific India (Mumbai). On the manufacturing front, it has formed an equally owned partnership with Lotte Chemical (Seoul, South Korea), Lotte Versalis Elastomers, to produce elastomers at Yeosu, South Korea. The partners originally formed a JV in 2013 to manufacture 200,000 metric tons/year of EP rubber, S-SBR, and

PBR. In 2015, the alliance was extended to add 50,000 metric tons/year of styrene-isoprene-styrene and styrene-butadiene-styrene (SIS-SBS) rubbers, both based on Versalis technology. The SIS-SBS units will be connected to Lotte’s new butadiene and isoprene plants on the site. The original complex is expected to be completed by the end of this year. Versalis says the SIS-SBS project is progressing as planned. The initial target was to commission the SIS-SBS units in 2018. This project is targeting the specialty hot-melt adhesives market, as well as technical and sports articles.

Other initiatives in Asia include marketing E-SBR in China from Reliance Industries’ 140,000-metric tons/year plant at Hazira, India, which is based on Versalis technology. Versalis is also involved in a project to develop green tires with the Mesnac Group, a Chinese rubber and tire machinery company, together with Mesnac’s local affiliates Ecombine and EVE Rubber Institute. The agreement covers jointly developing technology to bring to the tire market a new range of elastomeric materials with improved mechanical performance and lower environmental impact.

Versalis’s sales dropped from €5.3 billion in 2014 to €4.7 billion in 2015, following the downsizing of its operations and the pass through of much lower oil prices. Average unit sale prices fell 14.4% from the previous year, with elastomers falling 11.6% and styrenics 12.7%. However, this compares with the average naphtha price nearly halving. Restructuring efforts and widening petrochemical margins meant profitability rose sharply, from the adjusted EBIT loss of €347 million in 2014 to the adjusted EBIT profit of €308 million in 2015.

Ferrari foresees revenue and, more importantly, profit continuing to benefit from the company’s transformation initiatives. The company has done its homework, and most of its transformation is over, he says. Versalis is today a market-driven company focused on opportunities generated by megatrends. The company has shed most of the negatives from the past, but it has kept its chemical DNA, technological know-how, and commercial relationships and is continuing to shift its portfolio toward specialties and seek to globalize. The company is expected to unveil its 2017–20 four-year plan in the first quarter of 2017. Eni will publish its quarterly and annual results and outline its strategy on 1 March. ■