

7 June 2022

## **Roadmap to climate action: in the past decade, RadiciGroup slashed greenhouse gas emissions by 70%. Target: - 80% by 2030.**

### **Radici Chimica Novara plays a key role in reducing Group environmental impact.**

Setting concrete environmental sustainability objectives for **abating direct greenhouse gas emissions** and **leveraging investments and state-of-the-art technology**. This is the approach that has always guided world leading manufacturer RadiciGroup in operating its businesses with a wide range of products: chemical intermediates, polyamide polymers, high performance engineering polymers and advanced textile solutions.

RadiciGroup's strategy has paid off, allowing the Group to reach ambitious goals: **between 2011 and 2020, overall Group greenhouse gas emissions were cut by 70%**, falling from about 700,000 metric tons per year of CO<sub>2</sub> equivalent to 200,000 metric tons.

These results were largely achieved through the **action implemented by the Group's Specialty Chemicals Business Area** at its plants in Novara, Italy, and in Germany, which are the heart of RadiciGroup's chemicals business. Here the Group produces an essential intermediate for synthesizing polyamide 66, **adipic acid**, whose production process releases **nitrous oxide** as a by-product. Nitrous oxide in itself is not particularly problematic (in fact, it is used in the medical sector as an anaesthetic and in the food industry as a spray propellant, in cans of whipped cream, for instance), but, if it is released into the atmosphere, it has a much **higher greenhouse gas effect than carbon dioxide**.

At the Radici Chimica site in Novara, a multiyear investment budget of **over EUR 10 million** was dedicated to lowering these emissions through **three important undertakings**: in **2004**, putting into operation a three catalyst bed **reactor**, designed and patented by the company, to decompose nitrous oxide into nitrogen and oxygen, the two elements it is composed of, thus making it innocuous for the atmosphere; in **2013**, installing an **EnviNOx plant** to decrease the release of nitrous oxide formed in the production of nitric acid, and, in **2021**, a further improvement in the **emissions abatement system** associated with nitric acid production.

Since activating the last plant just 9 months ago, more than 35,000 metric tons of CO<sub>2</sub> equivalent have been cut. All the above-mentioned actions have enabled Radici Chimica Novara to record a nitrous oxide emissions level less than 10 ppm, a value close to zero.

*"We are the only Italian manufacturer of adipic acid, a basic chemical intermediate for numerous industries, as well as polyamide 66, our own sector. The investments we have made to improve the environmental performance of the adipic acid production process have allowed us to achieve significant results and make our*

*business increasingly more sustainable,”* **Maurizio Radici, vice president and COO of RadiciGroup**, stated. *“We decided to implement initiatives for emissions abatement long before it was required by law. As a matter of fact, we started studying the available technologies at the end of the 1990s and advocated for setting up the European Emission Trading System (ETS) in the Italian chemical industry in 2011, two years before it became law.”*

Furthermore, in **Germany, in 2001**, RadiciGroup built from scratch an adipic acid plant that uses **Best Available Techniques**, including an advanced thermal abatement system for nitrous oxide. Additionally, by the end of 2022, an EnviNOx plant is scheduled to be in operation, so as to **bring the plant’s direct greenhouse gas emissions down to zero**, by reducing nitrous oxide emissions associated with nitric acid production.

*“We are convinced that our companies will grow only if they stay in harmony with all their stakeholders,* **Angelo Radici, president of RadiciGroup**, emphasized. *“As regards minimizing environmental impact, we will continue to invest from the perspective of continuous improvement, so that our recent installations in the Specialty Chemicals business area will enable us to further abate total Group greenhouse gas emissions and by 2030 arrive at a reduction of around 80% compared to 2011. Moreover, concerning energy, on top of an innovative trigeneration plant, all our Bergamo sites use self-produced renewable energy or draw electricity from the grid, with the ambitious objective of 100% self-produced renewable source energy. Radici Chimica Novara is directly connected to a high-efficiency cogeneration plant that runs the site and fully covers its energy needs.”*

President Radici continued: *“Besides our commitment to energy issues, we invest in innovation and the development of new recycling and circular economy projects, trying to take tangible action towards a sustainable future for our companies and the communities where we operate.”*

**Other significant investments** in emissions abatement have been carried out at the RadiciFil site in Casnigo (BG) and at Radici Yarn in Villa d’Ogna (BG). RadiciFil installed a **thermocompression system** that slashes steam consumption by the production plant, while Radici Yarn set up a **trigeneration plant** that uses a high-efficiency system to produce not only electricity and steam, but also cold water needed for the production processes, resulting in a drop in water usage of 30% in 2021.

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**RADICIGROUP** – With approximately 3,000 employees, sales revenue of EUR 1,508 million in 2021 and a network of production and sales sites located throughout Europe, North America, South America and Asia, RadiciGroup is one of the world’s leading producers of a wide range of chemical intermediates, polyamide polymers, high performance engineering polymers and advanced textile solutions, including nylon yarn, polyester yarn, yarn made from recovered and bio-source materials, nonwovens and personal protective equipment for the healthcare and industrial fields. These products are the result of the Group’s outstanding chemical expertise and vertically integrated polyamide production chain and have been developed for use in a variety of industrial sectors, such as: automotive – electrical and electronics – consumer goods – apparel – furnishings – construction – household appliances – sports. The basis of the Group’s strategy is a strong focus on innovation, quality, customer satisfaction and social and environmental sustainability. With its business areas – Specialty Chemicals, High Performance Polymers and Advanced Textile Solutions –, RadiciGroup is part of a larger industrial group that also includes textile machinery (ITEMA), energy (GEOGREEN) and hotel (SAN MARCO) businesses.

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