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Grupa Azoty Fosfory's commitment to energy independence and R&D plans for phosphogypsum management

Grupa Azoty Fosfory is on a mission to enhance the energy efficiency of its production processes. Central to this effort is the forthcoming upgrade of the sulfuric acid plant incorporating a power generation turbine, an initiative set to result in a remarkable reduction of approximately 20,000 $MgCO_2$ of greenhouse gas emissions annually. The project entails an estimated investment of nearly PLN 100 million. In parallel with the upgrade project, Grupa Azoty Fosfory is commissioning a rotary dryer equipped with a new natural gas combustion chamber. This innovative addition is set to significantly curtail carbon dioxide (CO_2) and sulfur dioxide (SO_2) emissions, while promising to reduce process downtime. Grupa Azoty S.A. isn't solely focused on current projects, but is also committed to advancing its understanding of phosphogypsum management through dedicated research and development endeavours.

Grupa Azoty Fosfory is presently in the process of drafting tender documentation to identify the most suitable contractor and working on a financing model for the project. The project is scheduled for completion in 2027. At its core, it aims to deliver energy efficiency gains by harnessing untapped potential within the company's operations, leveraging waste heat to generate electricity. It will also help minimise the costs associated with plant repairs due to failures, promoting a more reliable production environment, and augment steam yields, thereby driving the company closer to its aspiration of achieving energy self-sufficiency through a substantial increase in its captive energy production, from the current annual output of approximately 4.5 to 20 GWh. Grupa Azoty Fosfory's current energy demand stands at approximately 24 GWh per year.

"As the Ministry of State Assets, we strongly endorse investments aimed at bolstering the energy self-reliance of key companies in various regions. The project, with an estimated budget of PLN 100 million, marks a significant milestone for Grupa Azoty Fosfory, the Grupa Azoty Group's Gdańsk plant, on its path toward energy independence. I am convinced that this new investment, along with other projects such as the recently

completed dryer unit with a budget of PLN 15 million, will play a pivotal role in enhancing the competitive edge *of Grupy Azoty Fosfory. Additionally, I am confident that the company's phosphogypsum management plans will yield positive contributions to the overall development of our region*," **says Karol Rabenda, Undersecretary of State in the Ministry of State Assets.**

Ultimately, the implementation of this project will usher in a host of economic benefits for Grupa Azoty Fosfory. By harnessing the power of waste heat generated from sulfur burning to drive its own turbine, the company is poised to achieve significant increases in profitability of sulfuric acid sales and substantial savings by reducing the need for external electricity procurement.

Concurrently, the commissioning of the rotary dryer with a new combustion chamber on the Y process line will represent a major step in mitigating the environmental impact, by reducing carbon dioxide (CO_2) emissions, to the tune of approximately 3,000 $MgCO_2$ per year, and sulfur dioxide (SO_2) emissions, by around 15 $MgSO_2$ per year.

"Decarbonisation and reduction of greenhouse gas emissions are the key goals pursued by our Green Azoty strategy until 2030. We are consistent in our commitment to executing projects across the Group companies to diminish the carbon footprint of our products. Concurrently, we're placing strategic bets on investments set to bolster our energy self-sufficiency, as exemplified by the upcoming upgrade of the sulfuric acid plant with a power generation turbine," **says Grzegorz Kądzielawski, Vice President of the Management Board of Grupa Azoty S.A.**

Besides the transition from fuel oil to gas, the integration of the dryer with a new combustion chamber will yield a multitude of benefits, curtailing the expenses associated with production facility repairs, but also reducing maintenance shutdowns and process downtime. As a result, it will contribute to a marked boost in Grupa Azoty Fosfory's production capacity within the fertilizer sector, while significantly reducing emissions into the environment.

"*At Grupa Azoty Fosfory we take pride in our longstanding tradition and rich expertise within the chemical industry. Yet, we are also aware of the imperative to adapt and evolve in response to the changing environment. As a testament to our commitment to progress, we're dedicated to the enhancement of our facilities, which have served us for decades. This new investment will bolster our energy independence and ensure seamless production continuity*," **says Wojciech Dawidziuk, President of the Management Board of Grupa Azoty Fosfory.**

Also, as an integral component of our ongoing research and development efforts at Grupa Azoty S.A., we are actively engaged in initiatives aimed at optimising the management of phosphogypsum landfill sites, including through the extraction of phosphorus from leachate as a valuable raw material for fertilizer production.

"Our ongoing research at the Grupa Azoty Group has yielded promising outcomes, notably in the development of novel fertilizer formulations incorporating phosphogypsum. Additionally, we're actively investigating the feasibility of transforming phosphogypsum into fertilizer chalk and ammonium sulfate to unlock the full potential of phosphogypsum," **says Grzegorz Kądzielawski, Vice President of the Management Board of Grupa Azoty S.A.**