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Press Release from AFRY

AFRY provides feasibility study on Estonian phosphorite and related resources

AFRY has been awarded the study assignment for the Geological Survey of Estonia's Preliminary Economic Assessment (PEA) and Pre-Feasibility Study (PFS) services for the Estonian Phosphate Ore project in Toolse, Estonia.

Estonia has significant phosphorite reserves, among the largest in Europe. Phosphorite is primarily valued for its phosphorus content, essential for producing fertilizers used for agriculture. Additionally, Estonia's phosphorite contains valuable rare earth elements, essential for various high-tech industries, including electronics, renewable energy, and battery production. By utilising these resources, Estonia could become an important supplier of critical raw materials, reducing dependency on imports and enhancing its economic influence.

Supported by AFRY, the Geological Survey of Estonia is studying the costs, benefits and challenges, and environmental and socio-economical impacts of phosphorite mining for use in phosphoric acid production. The Geological Survey is considering both surface and underground mining methods, with a strong focus on minimising and mitigating environmental impacts. The study includes minerals processing test work, a preliminary economic assessment for mining design, and a pre-feasibility study for beneficiation and Merchant Grade Acid (MGA) production processes. It covers areas of the mine, infrastructure, minerals processing plant and MGA plant as well as theoretical estimation for sulphuric acid plant. It will assess the feasibility of constructing a beneficiation plant and detail the economic viability, including capital and operational expenditure estimates.

"AFRY has a solid Nordic engineering heritage with understanding of local conditions and the highest environmental and sustainability requirements," says Sirli Sipp Kulli, director of the Geological Survey of Estonia. "Through this study, we aim to build a comprehensive understanding of how Estonia's phosphorite and related resources can be utilised in a responsible and sustainable manner. Our focus is on ensuring that any potential extraction is in line with strict environmental and social considerations while providing long-term benefits to local communities, including job creation and regional economic development."

"We are proud to be selected as a partner for this important project that can have a remarkable impact on Estonia's economy. Drawing on our expertise, we support clients throughout the entire process, ensuring efficient and sustainable solutions. Our approach emphasizes the connection between process technologies and environmental performance to drive responsible development.", says Janne Tikka, Head of Mining & Metals at AFRY.

Phosphate mining in Estonia could significantly boost the local economy by creating jobs and attracting investment, while also enhancing self-sufficiency in critical resources like phosphoric acid and rare earth metals. It drives technological advancements in mining and processing, supports the agricultural sector with a steady supply of fertilizers, and strengthens Estonia's strategic position in the global supply chain for essential materials.

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Interested in learning more? Sustainable and responsible mining involves practices that minimise environmental impact while optimising economic and social benefits. Key elements include using eco-friendly mining techniques that reduce land disturbance and pollution, implementing comprehensive waste management systems to recycle and safely dispose of mining by-products, and ensuring water conservation through advanced treatment and reuse methods. Additionally, responsible mining emphasises the rehabilitation of mined areas by restoring ecosystems and promoting biodiversity. Read more: [AFRY Mining & Metals](#)

About The Geological Survey of Estonia

The Geological Survey of Estonia is a state agency administered by the Ministry of Climate. The EGT operates in the following areas: geological mapping, geological surveys, preservation of and ensuring access to geological information, advising of government authorities, and informing the public about matters concerning the earth's crust.

AFRY provides engineering, design, digital and advisory services to accelerate the transition towards a sustainable society.

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