19. October 2022

Atmonia and SORPA start a collaboration to produce nitrate fertilizers

Atmonia and SORPA are starting a collaboration project to conduct experiments with the goal to establish a production process for nitrate fertilizer. The experiments will examine the viability of using a side product stream from SORPA's methane gas processing facility, GAJA, as raw material for Atmonia's nitrate production process.

The innovative start-up company Atmonia has developed a new process intended to produce nitrogen (N) fertilizer by using microorganisms to convert ammonia into nitrate fertilizer in an environmentally friendly way. Atmonia received funding for the collaborative project from "Circular Economy Fund" of the Ministry of the Environment, Energy and Climate in Iceland.

This project will use a side product gas stream, composed of ammonia and carbon dioxide, from SORPA's methane gas production. The goal of the collaboration is to capture these side products and produce nitrogen (N) fertilizer. The microorganisms that convert ammonia into nitrate consume carbon dioxide, contributing to a reduction in greenhouse gas emissions from the methane gas production process. This project could also reduce the demand for imported nitrogen fertilizer into Iceland.

Apart from the obvious benefits for the environment, there are hopes to achieve significant value for Icelandic farmers, through domestic, sustainable primary production of fertilizer. Most arable farming and land reclamation relies on the use of synthetic fertilizers. The main nutrients considered in fertilizers are nitrogen (N), phosphorus (P) and potassium (K). Organic waste contains these key nutrients to some extent, that's why organic waste is such an important resource that deserves to be processed with new methods and to be increasingly used in agriculture. Organic waste is well suited for soil reclamation, and it is important to put it into a channel for increased utilization. In recent years, the government's policy has become clearer regarding the reuse and use of organic materials and that is stated in waste matters policy "Towards a circular economy" of the Minister of Environment and Natural Resources of Iceland.

There reads: "That Iceland will be among the leading nations in climate matters and the sustainable use of natural resources for the benefit of future generations." "With that in mind, an active circular economy will be established where the generation of waste will be significantly reduced, recycling will be increased, and landfilling will be stopped."

The project is in the early stages, but the first step is the integration of Atmonia's process with a side product stream from the GAJA plant for testing. If successful, Atmonia and SORPA see great opportunities in this collaboration, which could be the beginning of sustainable, environmentally friendly, and economical nitrate fertilizer production in Iceland.

Further information:

Guðbjörg Rist, CEO Atmonia
gudbjorg@atmonia.com