

Sundsvall is the first in the world with a wastewater treatment plant that can produce liquid biogas on a small scale using cryogenic technology.

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THE WORLD'S FIRST
 BIOGAS PLANT
USING CRYOGENIC
 TECHNOLOGY



The interest was great when first filling station for biogas opened.

The completely new biogas plant is situated virtually in the centre of Sundsvall and means a great deal for the image of the town, which increasingly is about creating sustainable solutions within energy.

This is how it will happen: Domestic sewage in Sundsvall is taken care of at the municipal treatment plant run by the company MittSverige Vatten. Once the water has been treated a large amount of sludge remains and this is then sent to the digester chamber. Here the sludge is prevented from coming into contact with oxygen causing the degradation process to start.

PREVIOUSLY THE GAS was burnt for heating and the production of district heating. The new cryogenic technology makes it possible using chilling techniques to liquidize the carbon dioxide to then remove this from the gas and then create liquid biogas (methane) in the next stage. It will then be possible to transport six to seven times more with a gasoline truck than today. This will make it possible to transport sufficiently large quantities for sales at gas stations in the region.

“It is by using cryogenic technology that it becomes commercially interesting. For the local authority the entire production is cost-neutral. We provide the raw materials, it is then private businesses that treat, transport and sell it,” explains MittSverige Vatten’s CEO Micael Löfqvist.

The companies involved in this instance are MittSverige Vatten AB, Scandinavian GtS, and AGA.

There are many small communities in the region and considering the geographical conditions it has not been possible – as in many large cities – to build a large common sewage network. There are 46 treatment plants scattered around MittSverige Vatten’s area of responsibility.

IN THE FUTURE a new approach is needed to expand biogas production. A pilot study has been made where Sundsvall’s local authority has looked at the possibilities of building a large scale plant. The idea is that apart from sewage sludge to also use sludge from SCA’s paper mill in Ortviken and domestic waste collected by the local authorities’ refuse companies in both Sundsvall and Östersund.

“Operations will be ten times greater than today. You have to be rational and find new regional solutions in order to realize large scale operations in municipality in Norrland,” says Micael Löfqvist.

At the present time these large scale plans are set sometime in the future. Yet the switch from purchasing fossil fuel to becoming self-sufficient has begun. ■

BIOGAS IN SUNDSVALL

Biogas is judged to be a vehicle fuel that has the least effect on the environment of those currently available on the market. Annual production of biogas in Sundsvall will be approx. 500,000 cubic meters of ready vehicle gas, which is equivalent to as many liters of diesel. What remains after the biogas has been produced is sludge that can be used as filling and soil improvement materials.