



Background

A major goal to reduce impact on the climate is to reduce emissions of the greenhouse gas methane (CH₄). Methane from manure (about 10-15% of farm emissions) can be **captured** to be processed and reused as biogas. A mobile plant can enable the use of the residual stream.

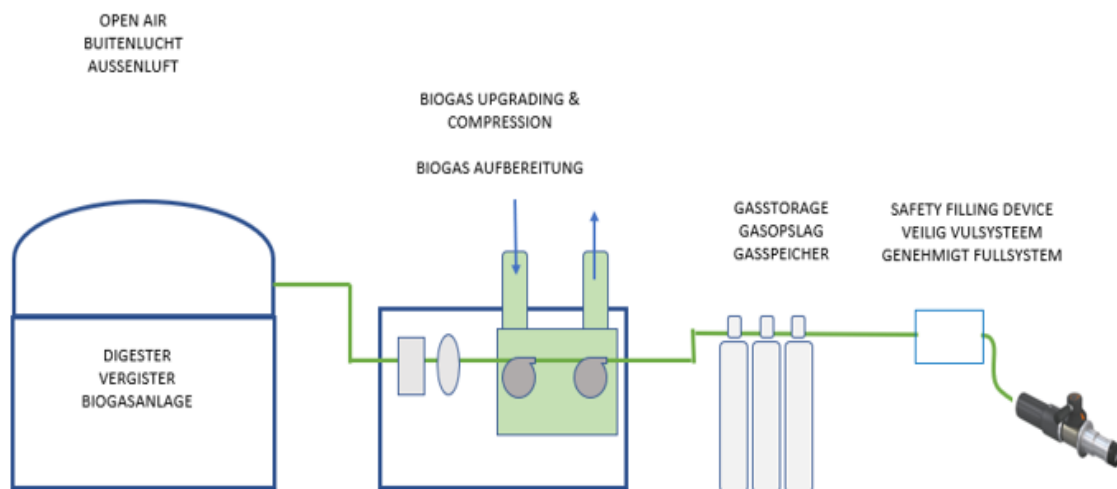
How does the strategy work?

An automatic slide separates the thick and thin fraction of the manure. The thin fraction (90%) ends up in a gas-tight **manure bag** where it continuously produces some biogas. Of this **biogas**, more than half consists of methane. Emissions can be reduced by capturing the methane and processing it into a usable biogas. This leads to **climate gains**.

The mobile installation

The mobile installation was realized by the company *BasGas (Organic Agricultural Systems, located in Nijmegen, The Netherlands)* and consists of a gas-tight manure bag, a so-called Biogas Upgrading and Compression Unit, a Biogas Storage and Transportation Unit and a Biogas Feed-in Gas train Unit. The biogas (consisting of CH₄, CO₂, H₂S, NH₃, H₂O and trace elements), which is created in the gas-tight manure bag, is converted to bio-methane in the Biogas Upgrading and Compression Unit. This conversion removes all "impurities" from the mixture after which only bio-methane remains. Finally, a THT odorant is added. Bio-methane is then compressed to 300 bar in the Biogas Storage and Transportation Unit and stored in gas cylinders and purchased under contract from the farmer, to then be sold commercially by BasGas.

The farmer has basically no costs. The investment is for the supplier of the mobile installation.

Side note: *Mobile versus fixed*

A "regular" manure digester produces 8 times more methane compared to *BasGas'* mobile installation. The temperature of a manure digester is also more constant. The temperature of a manure bag will always fluctuate.

Positive features

A livestock farmer almost always produces more biogas than needed for own use. Biogas can be supplied to third parties to get paid according to yield and market value. The mobile unit is interesting because of the small size and business model, making it low investment opportunity.

Be mindful on these points

The installation also works with fresh **slurry, manure or thin fraction**, provided it is in the manure bag or a closed storage within a day (preferably within an hour). If "old" manure is pumped from the manure pit into a manure bag, it can be assumed that most of the methane has already **dissipated**.

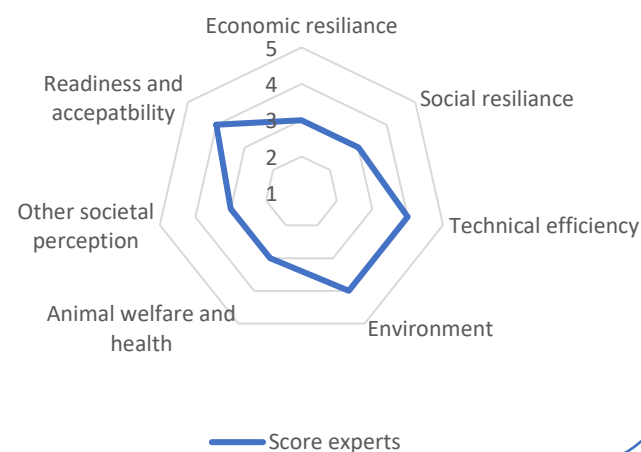
Equipment involved and investment?

As soon as the livestock farmer starts producing, there must be sufficient production space (**gas cylinders**) and payment and placement of the different units. The installation remains property of BasGas, so farmers have none to little investment cost.

Specific advises

The installation also works for **swine manure**. However, the process started with cow manure. Cow manure contains bacteria from the rumen that are not present in swine manure. Once these bacteria are in the manure bag, fermentation begins.

Assessment of method



Source: <https://basgas.nl/en/produce-biomethane/>

Quote of the farmer:

"Sustainable gas can be found on every livestock farm!"