Policy Brief No14

Facilitating the development of energy independent farming in Livestock

What is the challenge?

The agriculture sector accounts for **~10% of the total EU27 greenhouse gas (GHG) emissions** (from crops, livestock, and soils). Methane from slurry and ruminant animals is a large provider and livestock is on the line. Public opinions go from thinking that reducing meat consumption to reduce the number of farms, while solutions now exist. Thus, livestock farms have the greatest challenge of being high CO_2 equivalent emitters, while having among the highest profitability difficulties across Europe. Mostly hit are the smallest of these farms. European **400 000 livestock farms are below a 50ha average**. Most of dairy farms for instance have an average size **below 100 heads**, while smallest biogas plant needs a **minimal capacity for the equivalent of 1000 heads**.

Investments are often delayed as margins are uncertain and provide little visibility. Long term survival of these farms will depend more and more on their capability to make productivity gains while shifting to more sustainable farming models, without necessarily sharing the uplift in prices, and without any compromise on quality. Without subsidies to make them more profitable and at the same time more sustainable, many farms would disappear. Simultaneously, neighbourhoods are sensible to and smell or fear of diseases for the closest ones.

Solutions to capture methane from manure for small livestock farms are **on the way** to support these farmers into **producing and consuming their own energy on site**. In many cases, farmers would also be able to share/sell this energy either through fuel for machines or electricity or heating. Further additional benefits: Slurry covers enables to collect rainwater usable on farm or for irrigation purposes, thus reducing clean water consumption.

Proposed solutions include mobile upgrading biogas systems that can be shared among a cluster of farms in order to reduce the total investment per farmer. Digested material is an excellent natural fertilizer to restore organic matter in the soil instead of chemical fertilizers, that are expensive and normally produced with high consumption of fossil fuels.

The challenge is to make most of the small livestock farmers capture the fugitive methane and transform it into energy on site, cutting all logistics costs for material purchased and cutting external energy consumption, while providing the excess to the close neighbourhood.

Policy Recommendations

- Promote through farmers organizations such solutions, including advisory services.
- Enable farmers, through subsidy programs, to invest in biomethane emission capture solutions.
- Provide support by promoting any kilo of biomethane used for agricultural machinery or for transportation and replacing fossil fuel diesel.
- Promote demonstration activities at the farm level aimed at showing the farmers in their own region/country how new smart technology or machinery perform. Demonstration farms are key examples of supporting strategies, facilitating the adoption and uptake of Innovative biogas production equipment.
- Promote tools that allow farmer experiences to be shared, as well as the exchange of information about training courses and, above all, to improve and harmonize the training courses provided.
- Enable small scale producers to group into clusters to connect to the electricity grid or gas supply chain.
- Promote and educate how farms can support CO_2 emissions reduction when becoming carbon negative.

Expected Impacts

- Developing carbon negative farms.
- Reduction of farming costs level therefore improving the margins, with a potential impact on the subsidies in the long run.
- Significantly reducing the purchase of chemical fertilizers poured into the fields. Immediate gain in soil health and especially in areas of livestock concentration.

- More sustainable and environmentally friendly slurry containment, leading to healthier environment and rivers with improvement for flora and fauna.
- Soil improvement due to use of organic fertilizers vs chemical ones.
- Transition to agricultural machines and transport vehicles running on biomethane produced from livestock manure within farms with an overall negative carbon footprint.
- Reduction of clean water consumption by developing more rainwater collection for farm use.
- Increase of logistic trucks or public transportation running on fugitive methane with negative carbon footprint.
- Livestock farms surrounding villages and communities could be more accepted by the local population and overall, more sustainable.

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