

Bio-economy pilot

Case for joint-demonstration “Biogas beyond energy” Leader: Lombardy; Co-Leaders: tbd

Concept Note

- Description of the application(s) envisaged, with detailed description of the specific application

Biogas diffusion has been boosted by public contributions aiming at increasing the production of energy from renewable sources.

This pushed two European countries (Germany and Italy) to be respectively second and third in the production of biogas at world level and contributed to the development of a thriving industry, but often caused the flattening of the business model on a rather simple “biomass – biogas – electricity” (which receives the contribution) scheme.

This model is neither desirable nor sustainable: deriving basically nothing but electricity from biomass is picking just the low-hanging fruits from a huge potential and the whole “bioeconomy revolution” that is taking central stage at global level is about maximizing the extraction of added value from the available biomass.

The future most likely relies on the development of a far more complex business model, less relying (if relying at all) on public contributions, which optimizes the whole production cycle, from inputs to more efficient conversion processes and – above all – a wider range of downstream products (e.g. fuels, additional energy, chemicals, fibers, fertilizers) that can be sold to the market making the whole business profitable.

We can think at this process as the development of a **diffused biorefinery** that is complementary - and not in competition – with large scale centralized biorefineries. A smaller biorefinery that transforms local biomasses into bioenergy and bio based compounds within a circular economy approach. A new approach that could prove particularly suitable for those area characterized by the co-presence of industries, services and agriculture, producing large amounts of waste and residues, and requiring energy and feedstock.

Within the Vanguard Bioeconomy Initiative a number of regions decided to get further into these topics, and agreed to join a meeting in Milan on January 12, 2016, in order to agree a common vision and the identification of the main challenges that need to be overtaken in order to make it real.

- Assessment of the “distance-to-market” (TRL 5, 6, 7 or 8) and of the business potential for the own companies.

The topic “Biogas beyond energy” is not new in some of its development stream. For example, alternative technologies are already available to extract bio-methane from bio-gas, thus producing both a fuel and a chemical raw material. Pilot plants producing fertilizers out of digestate are also existing. Still a lot needs to be done and it is clear that, once agreed a common vision, a joint effort will reduce time, increase opportunities and better distribute the burden.

In terms of TRL we’re therefore basically facing a wide range of possibilities, depending on the value chains we intend to develop. The experts meeting in January will detailed these value chains and therefore identify current TRLs.

- Description of the key assets of the regions participating

All participating regions have an established biogas industry, although with local characteristics (e.g. as far as the biomass used as raw material is concerned, from crops to waste to wood and manure). Germany and Italy stand out as far as the number of plants is concerned; Germany is also the main technological player. In all countries R&D&I activities are in place to increase the value added produced by each plant, with different levels of maturity.

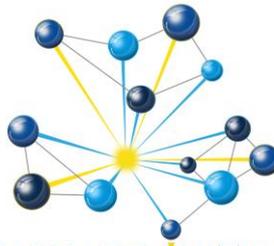
The expert meeting in Milan will deliver also a more detailed overview of the current situation.

- What is the added value of **joint** demonstration activities here?

The added value of the biogas proposal stays with the fact that a number of regions have recognised their similarities both in the current situation of their biogas sector and in their strategies for its development.

The goal of the expert meeting in Milan (January 12, 2016) will deliver borth a common vision for the development of the industry and an identification of the most relevant opportunities/challenges lying ahead in terms of technologies, products, markets and value chains.

Coordinated efforts may reduce time to market, improve results, decrease the need for resources and avoid dupliations while fostering transnational cooperation between companies and research institutions. Cooperation between regional authorities can also



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facilitate both the taking up of new solutions and the creation of a favourable environment for innovation and growth.

- [Description of a first set of common demonstration activities.](#)

The expert meeting in Mialn intends to identify the most relevant challenges and opportunities long the way between the current biogas industry and its future, as defined by the common Vision. This activity will allow the identification of common demonstration activities in detail.

- [Who would be interested to join the case?](#)

Several regions have already expressed their interest and will participate in the Milan meeting (January 12, 2016).