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Bringing Fresh Air to Biogas

Social innovation and communication is challenging the mistaken belief that as a fuel provider biogas 'stinks'.

As the world looks for ways to become more sustainable, biogas has been identified as an important renewable energy source in helping meet community energy needs, particularly in rural areas. Produced from raw materials such as agricultural waste, manure, municipal waste, sewage and green or food waste, biogas leaves a very small carbon footprint. These raw materials can be composted and used as fuel for electricity: lighting, heating and cooking. Its production-and-use cycle is continuous, generating energy for sustainable living.

Community-generated and community-owned renewable energy can be a **game changer** in the energy sector, especially in times of financial uncertainty. Swapping the predominant use of fossil fuels with bioenergy is the target of numerous international treaties, such as the **Kyoto Protocol (1997)** and the **Paris Agreement (2015)**. However, the benefits extend far beyond these global obligations. Projects can be used to promote local economies and help create new job opportunities, as well as saving money and promoting social responsibility.

So why, given the EU 2020 renewable energy **directives** which recommended that at least 20 percent of the total energy mix should be renewable, is biogas not more commonplace?

Biogas – the forgotten fuel

Engaging in the renewable energy market effectively signifies the creation of a new alternative energy marketplace, an area that has not been a priority for many governments especially in times of financial uncertainty. Even Germany (which leads the way in Europe's biogas community developments, producing more biogas than all other EU countries put together) has seen a decline in government interest. The 2014 **amendment** of its *Renewable Energy Sources Act* greatly reduced incentives and promotional measures for the uptake of biogas technology, resulting in a significant decrease in biogas projects. The resulting uncertainty had a follow-on effect, minimising the use of existing infrastructure and putting the viability of existing biogas communities at risk.

The paucity of financial support from governments has done little to help address the lack of appropriate infrastructure and technical "know-how" and has limited institutional capacity. Historical contingencies and vested interests are also a hindrance, with competitive rivalries across the energy supply chain (even across the related renewable energy sector) reducing the competitive

advantage of the biogas industry.

Start local

To overcome these outside impediments, **ISABEL**, a €1.3 million (US$1.3 million) EU Horizon 2020 project conducted by INSEAD along with seven other partners, is taking a bottom-up approach to promoting biogas as a viable and sustainable power supply across Europe.

The three-year project aims to promote closed-loop bio-economies, deploying regional platforms into targeted areas to encourage citizens and local stakeholders to take an active role in the planning and development of local, sustainable biogas supply chains. The project is bringing new thinking into the biogas industry, creating a local and community-based governance model motivating communities to participate in each step of the process from collecting waste to using the power generated. Community-led bioenergy production and use developments can create jobs and strengthen both social and environmental stability. By playing a direct role in profit generation and sharing, individuals gain access to biogas energy ownership, shared resources, new market connections, increased farmer engagement and direct income.

Despite the apparent advantages, a lack of awareness and negative public preconceptions (the idea that biogas pollutes the environment and is smelly) have threatened to thwart the process. To address these mistaken beliefs and encourage participation, ISABEL was forced to rethink the way it connected with potential stakeholders.

Changing perceptions

A comparison of alternative markets in Europe has shown that the biggest influence on growth in bottom-up developments is awareness raising, increasing trust and active engagement in projects that target a "common good" via communication. Remarkably, perhaps, separate **research** suggests public awareness of the benefits of the use of biogas is equally important to financial motives.

With this in mind, ISABEL is developing a social innovation framework aimed at motivating individuals to becoming stakeholders willing to co-create self-sustained, closed-loop economies focused on generating and consuming their own biogas power.

It has started by connecting actively with targeted communities in the United Kingdom, Germany and Greece, holding open dialogues with local citizens to educate them on the biogas power process. The educators demonstrate ways in which community members could engage with biogas energy projects and participate as stakeholders and potential shareholders.

The strategy includes regional consultation workshops, local press engagement, excursions to demonstrate examples of successful role models, and actively encouraging children to act as local ambassadors of their own community biogas projects (through programmes such ISABEL Power Kids, run in partnership with the **Lake Constance Foundation**).

After getting local communities on board, ISABEL then arms them with an arsenal of expert knowledge, collaboration tools, innovation opportunities, access to policy makers and local authorities and funding alternatives.

One year on, ISABEL is working with communities in the U.K., Germany and Greece to help them realise their initial biogas plans.

The future

Currently the bio-economy in Europe represents a **€2.4 billion market** with the gross inland consumption of biogas across Europe's renewable energy consumption nearly **doubling** from 6 percent in 2005 to 15 percent in 2014. Biogas communities with socially responsible partnerships and social innovation methods, models and tools can help the industry reach its full potential, but it's worth remembering that, as with all bottom-up developments, communication and community awareness are vital to getting the acceptance needed for individual project success.

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