BIO-ENERGY VILLAGES
IN GERMANY

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Living in a more sustainable place, where environmental impact is low and energy consumption is adequate to households needs, is a big challenge for many communities around the world.

An interesting experience on how to have an efficient and low-carbon energy production is Germany, which promotes the development of Bio-Energy Villages.

According to the Institute of the Institute of Bio-Energy Villages in Göttingen, a bio-energy village is a village that produces at least as much electricity from biomass as is used on site. The demand for heating is covered at least partially on the basis of biomass. To achieve high-energy efficiency, this should be done through combined heat and power. The bio-energy plants are more than 50% owned by the heat customers that join the project as a cooperative, and local farmers supply the biomass.

Starting in 2005, the village of Jundhe in Southern Lower Saxony (Germany) has substituted away from fossil fuels by collecting materials such as sunflower, rye, wheat and liquid manure obtained from farms around the region. A plant converts the biomass materials into bio-energy used for electricity and heating. The conversion process is made within a biogas facility that ferments the materials. The methane generated is thus transformed into energy via a small power plant, with a local heating grid transferring the energy to households.

The capacity of making this project possible stands on three components: community-based decision, locally sourced materials and cost-effective investment. The community of the village gathered together to discuss households' necessities and set targets to reach the aim of protecting the climate and their resources via being energy-efficient.

The opportunity to adapt energy production to the resources of the region has made the project a possible source of revenue for the communities participating to it. Individuals gathered into a locally run cooperative to manage this project. The municipality of Jündhe, with the participation of the German Ministry BMELV and Lower Saxony and other partners has then make it financially possible to make this environmentally-friendly dream possible.

In the State of Baden-Württemberg, the bio-energy village of Mauenheim provides domestic supply of energy for about 400 inhabitants and 150 buildings. Three different energy production systems are applied: a biogas facility, a solar-energy system and wood chip heating system. The biomass used for producing biogas is derived from primary products (silage maize, grass, slurry).

In the bioenergy villages sustainable jobs are created and the regional value chain is strengthened. The inhabitants' participation is essential for a smooth project management, as their collaboration creates a stronger sense of belonging and identification with their village.

These experiences are showing that is possible to develop a self-sufficient village alimented with low-impact energy production. The steps to be made are still some, such as developing lower-cost plants to allow access to a greater number of communities, and the feasibility of larger scale productions.

To know more

Best practice Catalogue Biogas Regions

http://www.bioenergiedorf.info

Article on bioenergy villages in bioenergiedorf

Article on Juhnde Bioenergy village

Article in Thunen Institut

Article in folkecenter

Article in OECD-Library

Bioenergy Farms – European Union

Article in PEPESEC website