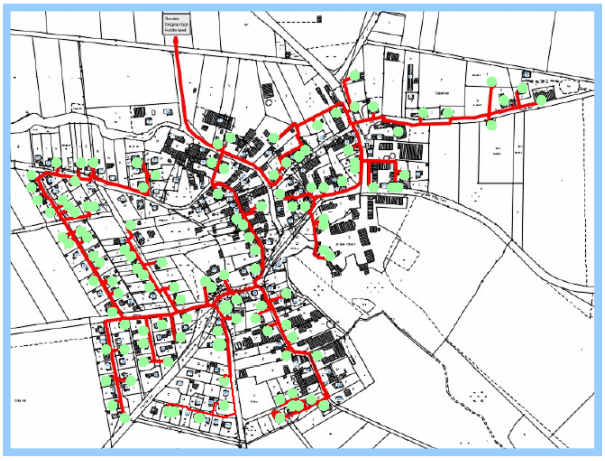
Germany: Jühnde lives on Bio-energy

The central idea of this model is a complete shift of energy sources for an entire village - away from conventional sources to the renewable and CO_2 neutral biomass. One such community is the bioenergy village in Jühnde, located in the southern part of Lower Saxony, Germany. It is the first of its kind in Germany, and aims to completely replace its fossil energy use for heating and electricity through bioenergy. The know-how attained in Jühnde is to be transferred to other suited neighbouring villages in an upcoming process to be started in autumn 2006.



The energy system in the Jühnde model is operated by a local cooperative company. Beforehand, all inhabitants were invited to participate in the planning process. Working groups dealt with concrete visions about the energy future of their community. The common decision-making and problem-solving in the process of reorientation and conversion to renewable energy sources generated a new sense of orientation and connectedness within the community. So this participatory business case guarantees a high compatibility with local needs and networks of actors, while local competence can be established. One of the formulated aims of the Jühnde model is to support the local cultural heritage, and to strengthen the community life and identity.

Furthermore, a new market for farmers focusing on biomass as a renewable energy source is generated in addition to the traditional demand for crops. Selling bioenergy crops and wood as biomass creates a new income base for local farmers, and leads to higher employment levels in this sector. Economic prosperity can thus be secured in the long-term, given the steady rise in fossil-fuel costs. Also, the overall effect on the region's and country's balance of trade is positive, as payments for oil and natural gas imports are reduced.

Demonstration project Germany

The energy production process itself works as follows: Under anaerobic conditions micro-organisms engage in enzymatic digestion of liquid manure and silaged plant material to create biogas in a central facility. The combustion of biogas in a combined heat and power generator (CHP) then generates enough electricity for the entire village, and the co-generated heat is mainly used to heat homes and other living space, replacing the conventional fossil fuels. A smaller portion of the generated heat is required as process energy for the digestion plant. The amount of heat generated cannot cover the high demand during winter months in Germany. During this period, an additional heating plant fuelled with regional wood chips is required.