

Bayreuth Bioenergy Region, Germany

Combining bioenergy and art projects, providing information, education and improving acceptance

Year of implementation:	2009
Location:	Nuremberg Metropolitan Region, Bavaria, Germany
Technology:	Wood chip combustion / anaerobic digestion
Principle feedstocks:	Residues/wastes from forestry and agriculture, Residential/industrial organic wastes, Cultivation of perennial plants
Products/markets:	Electricity and heat
Technology Readiness Level (TRL):	TRL 9 – actual system proven in operational environment

DESCRIPTION

Background

In 2008, the Regional Management Division of the city and administrative county Bayreuth invited energy experts and environmental organizations to a roundtable discussion to gather ideas for a regional development concept for bioenergy. The idea to combine bioenergy projects with art projects won a prize in the federal competition "Bioenergy Regions" and resulted in the elaboration of 7 bioenergy projects and the umbrella project 'Energy-in-art'. With this unusual combination, the Bioenergy Region aimed to contribute to the improvement of information, improve the bioenergy supply and increase the demand for bioenergy.

Implementation

The county of Bayreuth has initiated an art project that provides information, does educational activities and addresses conflicts in the context of renewable energy. There is a range of innovative bioenergy projects that benefit from the positive effects of the 'Energy-in-art' project. They all aim to improve the efficiency and environmental sustainability of the energy production. In 2009, projects to promote bioenergy (e.g. an environmental educational project and a project to increase the acceptance of energy plants) started. An open tender for an art competition followed in 2012. The jury has chosen three Energy-art large-scale sculptures to win the competition. These sculptures were set up in three different particular locations in the region, which have an individual connection to bioenergy and renewable energy topics. For example, the large-scale sculpture "Indicator" was set up on a pasture with a heat conduction for the transport of bioenergy beneath. Like an oversized pin, the sculpture that is up to eight meters in height marks the conduction. Its top follows the course of the sun. The spherical sculpture „Wooden Mantle“ is placed in front of a forest

information center and addresses the forestry and energy related use of wood. Next to one of the largest biogas plants in the region, the sculpture "Photosymbiosis" has been installed. This is an oversized leaf of a ribwort that transforms the energy of the sun into poetic texts. These texts can be read on the stem of the leaf that has a total height of nine meters. The texts can be proposed via the internet. The unveiling of the large-scale sculptures was accompanied by artistic performances. According the motto "Energy-art en route", a garbage truck became an energy truck with the ambiguous slogan: "It ferments in the country".

Additionally, hands-on-activities with the title „Art-Satellites“ were organised that allowed all participants to discuss bioenergy topics in a creative way. One workshop offered the possibility to produce a cartoon. Additionally, there were upcycling workshops and works on a collage under supervision of regional and supra-national artists. Seven of the nine workshops addressed pupils of different ages and types of schools. However, two workshops directly addressed the general public. In addition, Energy-in-art provided several further offers, such as competitions, geocaching or internet related activities.



Bioenergy projects and the umbrella project 'Energy-in-art' in the Bioenergy Region of Bayreuth

Effects

Approx. 200 people participated in the workshops, 8.000 people could be reached with the events and 3.000 people took part in the competitions. The environmental educational program reached 19.000 children. CO₂-savings of the bioenergy projects are approximately 1000 tons per year.

Financing

The project got funding from the city and county of Bayreuth. Additional funding was provided by the Federal Agricultural Ministry, diverse foundations and further regional partners. Furthermore, money from the LEADER-Fund and from the federal competition "Bioenergy-Regions" was used.

<p>Stakeholders involved:</p>	<p>District Manager Hermann Hübner (county of Bayreuth) Mayor Brigitte Merk-Erbe (city of Bayreuth) Regional manager Bernd Rothammel Researchers, e.g. Dr. P. Gerstberger, University of Bayreuth Artists, e.g. Maik Scheermann, David Mannstein, Maria Vill Farmers and operators of biogas facilities and wood chip plants</p> <p>Relevant organizations:</p> <p>Funding by: German Ministry of Agriculture, LEADER, foundations, local government (county of Bayreuth) Specialized authorities (Amt für Landwirtschaft, Ernährung und Forsten, Amt für Ländliche Entwicklung Oberfranken) Inter-local unions (integrated rural development), e.g. Wirtschaftsband A9-Fränkische Schweiz Schools (e.g. Gesamtschule Hollfeld) Cultural organisations (e.g. Kunstverein Bayreuth) NGOs (Bund für Naturschutz Bayern) Tourist offices (Tourismuszentrale Fichtelberg) Agricultural and forestal organisations (Maschinenring, Landwirtschaftliche Lehranstalten) Energy supply companies (Stadtwerke Bayreuth) Energy agencies (Energieagentur Nordbayern GmbH)</p>
<p>Contribution to Sustainable Development Goals:</p>	<ul style="list-style-type: none"> • SDG2: Promote sustainable agriculture and sustainable use of terrestrial ecosystems by research and field testing of perennial crops to mitigate negative effects of monocultures. • SDG7: Ensure access to affordable, reliable, sustainable and modern energy by promoting local heat networks and research work on improving energy efficiency of bioenergy plants. • SDG12: Ensure sustainable energy consumption by educational projects and information campaigns for various target groups. • SDG13: Reduction of CO₂ emissions estimated at 1000 t/year
<p>Employment:</p>	<p><i>No information available</i></p>
<p>Replicability and scale-up potential:</p>	<p>High replicability and scale-up potential on all levels.</p>
<p>Success factors:</p>	<p>Political support at regional level Financial and human resources (network management) Acceptance in the population Available land for agriculture and forestry Energy price development Funding</p>
<p>Constraints:</p>	<p>Lack of political support Missing financial and human resources (network management) Insufficient knowledge and acceptance in the population Limited land availability in agriculture and forestry Low cost of fossil energy</p>



Energy is art – Wooden Mantle (left) & Photosynthesis (right), Bayreuth region, Germany

Info provided by:

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More information:

<http://www.region-bayreuth.de/Bioenergieregion.aspx>

<http://energy-in-art.de/>

<https://www.klima.landkreis-bayreuth.de/unsere-projekte/bioenergie-fachprojekte/>