

Hot air turbine FERNWÄRME DÜDINGEN

**HEAT AND ELECTRICITY
SELF-GENERATED**

HOT-AIR TURBINE



FW DÜDINGEN

Hot air turbine flagship project

Energy Strategy 2050 points the way

In 2011, the Federal Council and Parliament decided that Switzerland will gradually phase out nuclear energy. As a result of this decision, as well as various other profound changes in the international energy arena over the years, the Swiss energy system will need to be restructured step by step. The Federal Council has developed Energy Strategy 2050 for this purpose.

As part of Energy Strategy 2050's initial package of measures, the Federal Council intends to support flagship projects with the aim of making the new strategy visible.

As „transparent workshops“, the SFOE flagship projects are intended to generate widespread awareness at national and, if possible, international level and allow people to experience the energy future of Switzerland directly. In addition to private companies and research institutions, public entities are also involved in the implementation.

The SFOE flagship projects demonstrate innovative energy solutions that point the way in a technological, ecological and social sense and help make Swiss energy innovations marketable. The spotlight is on key technologies that revolve around energy efficiency, renewable energy as well as networks and storage technology.

The Schmid hot air turbine uses the heat generated from the combustion of wood chips to produce electricity. The refinement of this innovative technology under real conditions was one of the first projects in Switzerland to be adopted in the flagship programme of the Swiss Federal Office of Energy.



www.hotairturbine.ch

FW Düringen

The energy provider Groupe E is conducting a district heating project in the community of Düringen. The new heating plant is a model facility in which innovative energy generation technology is used. The facility is used by Groupe E as a showroom for its activities in the area of renewable energy.

The architecture of the building has also been designed with this objective in mind: A glass wall along the bottom third of the building wall offers visitors a glimpse inside the plant.

The centrepieces of the Düringen district heating project are two Schmid wood firing systems, which generate 20,000 MWh of thermal energy per year. In addition to numerous private households, the community of Düringen will also connect its own buildings to the district heating network.

The aim is to produce electricity as well as heat. To this end, one of the wood firing systems will be combined with an externally fired turbine. This hot air turbine drives a generator with an electrical capacity of 100 kW. Through heat recovery and using the turbine's exhaust air as combustion air, the plant achieves an overall efficiency of 77%.

HLT-100 Compact hot air turbine

Schmid has developed the hot air turbine specifically for small, decentralised power stations. It thereby enables energy to be generated from wood in the smaller operating range from a thermal offtake of 300 kW.

Due to their complexity and maintenance requirements, other systems – such as ORC systems or steam turbines – only become worthwhile as large-scale systems with a thermal capacity above 2 MW. In many cases, heat offtake all year round cannot be ensured for such high capacities. The hot air turbine therefore fills the gap in the smaller operating range.

Hot air turbine project partners



The Schmid Group is a Swiss family business that has specialised in wood energy solutions since 1936. The headquarter is in Eschlikon. In addition to other offices in Switzerland, Schmid also has subsidiaries in Germany, Austria, France, Italy and Poland. The Schmid team is supported by worldwide distribution partners.

Project function: Supplier of hot air turbines

More information at: www.schmid-energy.ch



Groupe E is the leading energy supplier in Western Switzerland. The company employs around 1,300 employees and trains more than 140 apprentices. Groupe E supplies 460,000 residents, distributes 3 TWh per year and produces 1.5 TWh of electrical energy per year in its own plants: eleven hydroelectric plants, eight dams and three thermal power plants.

Project function: Contractor FW DÜDINGEN

More information at: www.groupe-e.ch



The community of Düdingen is situated in the German-speaking part of the canton of Freiburg, right on the language border. With around 7,700 residents, an area of 30 km², more than 3,000 jobs and a well-developed infrastructure in the areas of education, sport and culture, Düdingen is one of the largest and most attractive communities in the canton.

Project function: Connection to district heating

More information at: www.duedingen.ch



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Office fédéral de l'énergie OFEN

The Swiss Federal Office of Energy (SFOE) is the country's competence centre for issues relating to energy supply and energy use at the Federal Department of the Environment, Transport, Energy and Communications (DETEC). The SFOE is implementing the flagship programme launched by the Federal Council as part of Energy Strategy 2050's initial package of measures.

Project function: Promotion of innovation
Hot air turbine

More information at: www.bfe.admin.ch

HOT-AIR TURBINE

FW DÜDINGEN

www.hotairturbine.ch