Selected
Austrian
Renewable Energy Technologies
presented by FFG

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AUSTRIAN/EMIRATI TECHNOLOGY DAY

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Republic of Austria
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TECXPORT
Austrian Technology Competence

Sustainable Energy Production

- Sustainable heat supply for cities with BigSolar
- Carbon Flue Gas Cleaning - converting polluted flue gas into clean gas and valuable products.
- Greening rural and urban heating grids with solar district heating
- Water as a natural source of energy

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A pneumatic solar collector made of industrial plastic films

> The company**Heliovis AG** offers advanced CSP- and solar hybrid solutions (PV+CSP). Its key component, an **inflatable solar collector** with 220 m length and 1,600 m2 homogenous mirror surface, is made of plastic films and leads to 55% CAPEX and 20% OPEX savings. The company**Heliovis AG** is looking for a **Joint Venture-partner** to gradually introduce the technology in China.

A pneumatic solar collector made of industrial plastic films The product**HELIOtube** is a modular installation. It is an innovative solar concentrator built with **plastic films** that make it **easier** to produce, transport, build and recycle. The products **HELIOtubes** are produced roll-to-roll, **shortening production time**. They are transported to any destination in standard freight containers. Once on site they are simply inflated, forming tubes 220m long. The technology greatly **reduces** complexity and installation time. Inside the tube, a reflective film runs lengthwise, forming two air-tight chambers. The film concentrates sunlight onto a thermal receiver. The energy produced can be used in various industrial processes or converted to electricity by a turbine. Maintenance is less resource intensive. Its cylindrical shape is aerodynamic and withstands strong winds. While conventional CSP requires water to clean the mirrors, sand and dust can be removed from the product **HELIOtube** with compressed air. Thanks to a modular design, components are easily replaced. Once operational, the product **HELIOtubes** provide thermal heat and electricity for up to 16 hours a day at prices competitive to conventional energy. Over their entire lifecycle, the product **HELIOtubes** provide 55 percent CAPEX savings and significantly reduce the complexity of CSP projects.

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Architectural solar energy production

Individually manufactured photovoltaics made of laminated safety glass. With modules in various shapes, colors, transparency degrees and sizes up to 12.44m², the company **ertex solar** functions as a partner to all architects, builders and planners who want to integrate photovoltaics into their objects. The goal is the transformation of the building envelope into an active, energy-producing surface without aesthetic compromise.

The company **ertex solar** is convinced that the building, its envelope in particular, is at the forefront of energy transition. ertex solar is working alongside its customers to build the building of tomorrow, a building that produces its own energy. The proposed solutions give new functionalities to the various projects by integrating photovoltaic elements, producers of renewable technology. Whether it is a façade, a brise-soleil, a skylight of several thousand square meters, a parking canopy, a pedestrian area or a simple installation on the roof, ertex solar has the solution. With unique production capabilities and certifications in Europe, ertex solar can meet the most demanding expectations and produce panels up to 5 x 2,4 meters which are being **manufactured at Amstetten, Austria**.

In addition to the entirely **custom-made panel production services**, ertex solar offers semi-custom product lines, that meet the architectural expectations of many projects. The product lines offer a complete semi-transparent range, which is perfect for the use in curtain walls, double skin or canopies. Furthermore, ertex solar produces black panels which combine elegance and photovoltaic power as well as colourful photovoltaic panels, which leverage state-of-the-art glass colouring technologies.

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Sustainable heat supply for cities with BigSolar

BigSolar makes a significant contribution to the heat transition. High solar fractions up to 50 % for cities with a district heating grid. **BigSolar** is a smart combination of large-scale solar thermal collectors, a seasonal thermal energy storage and absorption heat pumps.

Efficient hot water storage

In Europe, demand for heat is usually around 10 times larger in winter than in summer, when solar irradiation reaches its peak. **BigSolar plants** from **SOLID Solar Energy Systems GmbH** integrate pit heat storages of an enormous size for storage of hot water up to around 90° C. The ratio storage/collector is totally different to systems with diurnal storage:

- systems with diurnal storage for domestic hot water and also solar district heating have around 50–100 liters of hot water storage per square meter of collector installed.
- **BigSolar** systems have 2000–5000 liters of storage per square meter collector.

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Carbon Flue Gas Cleaning - converting polluted flue gas into clean gas and valuable products.

> The **Carbon flue gas cleaning process** was developed for sintering and coke oven plants of steel works. It uses activated carbon for the cleaning of flue. In this unique process, the pollutant sulfur dioxide is being recovered and used as the feedstock for the production of fertilizers or sulfuric acid. The nitrogen dioxide is reduced to nitrogen and water, which are substances of clean air.

Highly efficent process to clean waste gas

The **Carbon Flue Gas Cleaning CFGC process** was developed by INTEGRAL Engineering und Umwelttechnik GmbH for sintering and coke oven plants of steel works. It uses activated carbon (AC) for the cleaning of flue gas and removes sulfur dioxide(SO2) by adsorption. Nitrogen dioxide (NOx) is reduced by the catalytic properties of the carbon with the additive Ammonia (NH3).

In this unique process, the pollutant sulfuric dioxide (SO2) is recovered and is used as the **feedstock for the production of fertilizers** or sulfuric acid. The nitrogen dioxide (NOx) is reduced to nitrogen and water, which are substances of clean air.

The cleaning process of polluted air provides clean gas and valuable products.

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Comprehensive waste management & waste-to-energy technologies

> A complete range of technologies, project development and execution services for the environmentally responsible **transformation of all types of waste into a productive resource**. The technologies comprise a patented combustion technology for waste-to-energy, material recovery facilities, refuse derived fuel plants or the anaerobic digestion of organic slurry, among many more.

Custom-made solutions for landfill mining, degassing or waste treatment

The company **IUT/DP** focuses on the efficient and environmentally responsible transformation of all types of waste into a productive resource. It has technical expertise and experience specifically in **landfill mining, landfill remediation and degassing, waste treatment, Refuse Derived Fuel production, composting and anaerobic digestion technology**. **IUT/DP** offers various custom-made solutions using state-of-the-art technologies:

Material recovery facilities (MRF): Those facilities are used for the recovery of valuable material out of different kinds of waste. They come in variable throughput sizes and sorting automation levels.

Refuse Derived Fuel (RDF) plants: RDF is an engineered alternative fuel mostly used by the cement industry to subsidise coal or gas. RDF is produced out of mixed solid wastes and has to meet strict quality criteria.

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