HUNGARIAN
INVESTMENT AND
TRADE AGENCY
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Renewable Energy

Why Hungary?

- Significant resources and unused capacity
- Made in EU label
- Logistics hub: excellent transport system
- Highly skilled, innovative and talented labor force
- Exceptional cost/quality ratio
- World-class quality of life
- Tailor-made incentive system
- Well-developed infrastructure
- Emerging renewable energy market
- Preferred sector supported by the government
- Extensive investment opportunities
- Over 200 industrial and technology parks of international quality

Facts about Hungarian renewable energy sector

- Hungary receives as much as 2,200 hours of sunshine a year;
- Regarding geothermal energy, the geothermal gradient in Hungary is almost one and a half times as high as the world average, and represents one of the country's natural treasures.
- Hungary's renewable energy potential is more than 2200 PJ/year;
- Hungary's photovoltaic potential is about 480 billion kWh (based on potentially installable solar modules);
- Hungary is among the top five high-tech exporters in Europe;
- The National Development Plan has earmarked EUR 280 M to support renewable energy and energy efficiency-related investments;

SOLAR ENERGY IN HUNGARY

- Notable solar potential in Hungary, but until now, very little solar capacity has been developed, therefore the solar market is poised for major growth in the coming years
- High potential of emerging CEE/SEE PV markets
- A new feed in tariff system (METÁR) is set to be implemented, which will entail the spread of solar energy (heat and PV) usage. Besides the support of public solar projects, the new system will encourage the building of solar power plants with bigger capacities (over 50 MW)
- Investors can benefit from government incentive packages which may exceed 50% of the total value of the investment

WIND ENERGY IN HUNGARY

According to preliminary data, in 2010 the share of electricity from renewable energy sources reached 7.56%. The participation of large-scale wind turbines from Hungarian installed power plant capacity was approximately 3.2%. The current wind energy capacity will double by 2020, which is important for the development of a green economy. 43% of country's area is suitable for the economical utilization of wind power. In areas that are 75 m above sea level, the annual average wind speed is above 5.5 m/s. The opportunities are even more promising at higher altitudes.

BIOMASS & BIOGAS IN HUNGARY

Hungary possesses excellent agro-ecological conditions for the competitive production of biomass. Hungarian agriculture is capable of sustainably producing biomass in excess of food and feed demands, and at the same time there is a significant biogas production potential. The theoretical potential of energy sources of biological origin (bioenergy) could exceed, by as much as 20%, the energy source demand estimated for 2020. In addition, bioenergy-based electricity production can be planned well in advance, and is also controllable.

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Biomass potential in Hungary

- Total feasible resource potential: 145-188 PJ/year,
- 20 million tons
- Only a small part is used
- Most important resource: agriculture

The biogas market is set to grow:

- Only 10% of potential is currently being used
- Feasible potential is 24-48 PJ
- Share of total electricity production 2%
- Will grow to 8% by 2020
- The strategy supports the channeling of clean biogas to the natural gas pipeline network and the development of decentralized biogas plants
- Biogas production is expected to double by 2020

Bioethanol/biodiesel in Hungary

- Still an emerging market, as evidenced by recent investments
- Large potential in biofuel production, supported by agricultural products
- In the past few years more than 30 new projects were announced, including SEKAB, Rossi Biofuel, United BioFuels
- New investments in biomass R&D: Monsanto, Pioneer HiBred and Agritrade SRL

Recent success story

Pannónia Ethanol in Dunaföldvár: the EUR 120 M bioethanol plant is creating 77 new jobs and will process 500,000 tons of maize per year to produce 240 million liters of ethanol, as well as 170,000 tons of protein for animal feed purposes.

Remarkable fuel cell R&D and production activity in Hungary

- Hydrogen Battery - production-storage of hydrogen by solar panels – developed by Accusealed Ltd. The equipment generates hydrogen through the decomposition of water, which will be stored in the same vessel and if necessary, can be expanded. The system operates in room without using pressure. The storage is completely fire- and explosion proof.
- 100W STACK - energy source for fuel cells – developed by Kontakt-Elektro Ltd.
- Biohydrogen R&D using solar energy in DEAK University of Szeged and the Biological Research Centre, Hungarian Academy of Sciences
- Fuel cell development, testing and manufacturing – Fuel Cell Hungary Ltd.
- An innovation: electric & fuel cell powered commuting vehicle – HY-GO™