



Source: www.peak-oil-crisis.com

ENERGETIC SECTOR AND CLUSTER INFORMATION



Source: company Prostor Ltd., Bjelovar

Koprivnica, May 2011

In general in Koprivnica Križevci County (KKC) are no operating clusters in energetic sector, but there are large possibilities of creating one in the future. As in the energetic sector are several possibilities for renewable energy resources development (geothermal energy, waste processing energy, solar energy, wind energy, biomass energy), there are **possibilities for clusters development**, depending on ways of energy exploitation.

One of the possible participants in such a cluster would be a biomass power plant, for which are plans for future location in business zone Koprivnički Ivanec, near Koprivnica. In the process of producing electricity, this power plant will be using wood pulp supplied from within the region and should have an output of 20MW.

There are also significant possibilities of building a geothermal power plant and related facilities on the location in Kutnjak in Koprivnica Križevci County, where geothermal potential has been proven and temperature of underground water is 140°C. This potential combined with extensive natural gas fields near Molve, could prove to be a healthy basis for an energy cluster in KKC.



Source: www.solarplaza.com



Source: energynewspaper.com

Table 1. Overview of planned projects in Geothermal program in KKC

| NO. | PROJECT | FIRST PHASE OF DEVELOPMENT | SECOND PHASE OF DEVELOPMENT |
|---|--|--|--|
| 1. Energy projects and business zone development | | | |
| 1.1 | Geothermal spring | 70 l/sec from a new production and existing injection well | 300 l/sec from three new production and three new injection wells |
| 1.2 | Geothermal power plant – heating plant | One 2.500 kW generator unit and 20 MW boiler | 2x 4.000 kW aggregates and 30 MW boilers |
| 1.3 | Thermal networks | Heat pipes for transporting thermal energy and de-gassed geothermal waters | Pipelines for transporting thermal energy |
| 1.4 | Business zone development | Internal zone infrastructure | Internal zone infrastructure |
| 2. User projects | | | |
| 2.1 | Vegetable drier | Vegetable drying 11.300 t/year | Vegetable drying 26.000 t/year |
| 2.2 | Flower cultivation greenhouses | 2,5 ha greenhouses with 0,5 ha climates | 5 ha greenhouses with 0,5 ha climates |
| 2.3 | Vegetable cultivation greenhouses | 5 ha greenhouses with 1 ha climates | 10 ha greenhouses with 1 ha climates |
| 2.4. | Fish farm and sports fishing pond | Fish breeding 100 t/year and a 5 ha fish pond | Fish breeding 100 t/year |
| 2.5 | Kutnjak spa | Outdoor pools and a hotel with indoor pools | Treatment center |
| 2.6 | Tourist settlements | Selnica Podravska settlement | Kutnjak settlement |
| 2.7 | Thermal energy transfer for Koprivnica | - | 10 km of heat pipelines and thermal stations |

Source: "Conception and feasibility program of the economical usage of geothermal energy at the location Lunjkovec-Kutnjak", Faculty of Economics and Business, Zagreb, May 2006



Source: PORA RDA of Podravina and Prigorje

Planned energy output from the existing and planned wells is estimated between 1.295.086 MWh_t/year and 1.554.104 MWh_t/year.