

Energy concept summary

Title of the energy concept: Analysis and optimization of energy efficiency of the heating system in the administrative building of the plant Vardar Dolomit - Implementation of heat pump

Topic area choice and topic marking in blue:

- () **Building** e.g. Insulation, change of windows, Low-energy-buildings
- () **Electrical energy** e.g. Light, Compressed air, Electrical drives, Cooling machines, Load management
- (x) **Heat** e.g. Heating, Process heat, Heat recovery, Air conditioning, Combined heat & power
- () **Renewable energy** e.g. Solar technology, Wood-fired plants, Biogas, Geothermal energy
- () **Management** e.g. Energy buying, Contracting, Emission trade, Energy data management systems



Company: Vardar Dolomit DOOEL
 Branch and NACE-Code(s): 23.32.0
 Products/Services: dolomite fireproof brick and masses of all kinds
 No of employees: 88
 Name of energy concept producer: Goran Spiroski
 Participant in EUREM No.:

Energy concept description:

In this factory there are a couple of furnaces in the production line that constantly need to be cooled down in order to maintain the temperature and avoid overheating. The cooling method is done with water. After the water has gone through the process it leaves the production line with a temperature of 33°C and this water goes to waste. The aim of this project is to use the heat potential from this water in order to heat the office building during the heating period in winter. The current heating source for the office building runs on heating oil and the cost is very high. With the instalment of 80kW heat pump and using this water as a heat source we can fulfill their needs and also reduce the heating cost for almost 57%. Cooling down the water before releasing it into the environment and cutting down the CO₂ emissions makes this project environment friendly.



Results:

Energy saving potential [kWh/a]: 85,349
 Energy source: water
 Cost reduction potential [Euro/year]: 8,336
 CO₂- saving potential [t/a]: 23,5
 (0.276 kg CO₂ per kWh)

Investment costs [Euro]: 39,460
 Pay-back time [Years]: 4,8
 Chance of implementation:
 () high (x) middle () low
 or date of implementation