

Energy concept summary

Title of the energy concept: Installation of a heat recovery system in oven and regulation of speed of oven's fan

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: Johnson Matthey
 Branch and NACE-Code(s): automotive industry,
 Products/Services: maintenance
 No of employees: 600
 Name of energy concept producer: Zoran Kocevski
 Participant in EUREM No.

Energy concept description: Project is combination of two related ideas .First of this project is to use exhaust process gasses on oven and put back into the process. Oven is used for heating of catalysts. Exhaust gasses are with volume flow of 5000m³/h and temperature of 300C. Natural gas is primary energy for burners and electricity is used for conveyor and fans. In cooling zone 2 *22kW fans are installed with purpose to cool down parts. Idea is to measure parts with noncontact infrared sensor and according temperature to regulate speed of the fans. Calculated energy savings for heat recovery (217 kW) on yearly basis is 1302MWh or 58590 Euros
 Calculated energy savings for regulation of fan's speed on yearly basis is 191MWh or 13370 Euros



Results:

Energy saving potential [MWh/a]: 1500
 Energy source: Natural gas/electricity
 Cost reduction potential [Euro/year]: 72000
 CO₂- saving potential [t/a]: 295
 (please fill in conversion factor: 0.227 kg CO₂ per kWh)

Investment costs [Euro]: 52400
 Pay-back time [Years]: 1
 Chance of implementation:
 (X) high () middle () low