Energy concept summary

Title of the energy concept: Dolomit refractories production – sintering optimisation

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

( ) **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: refractories

No of employees: 88

Name of energy concept producer: Zlatko Gjurchinoski

Participant in EUREM No.:

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Energy concept description:

- Compressed air needed for sintering of dolomite in Vertical (Shaft) kiln is supplied by 1 compressor and 1 blower each 30 years old. Air from compressor is directly entering to burners together with heavy fuel oil and air from blower is entering in the botom of kiln to cool down final product and to bring that heat back to process.
- In the begining, kiln was planned to work with 48 heavy fuel oil burners (16 burners radialy positioned on each of 3 different level of kiln), but due to good quality of row material it comes that 32 burners (16 burners radialy positioned on each of 2 different level of kiln) are sufficient for normal production. Number of burners was decreased by 33 procent but compressor and blower remain the same so they are overdimensioned from the begining of thear ussage.
- Made calculations indicate that production process needs can be obtained with 2 blowers with lower capacity. New blowers have better efficiency and will work closer to their nominal parameters witch is more economical so they wil have lower energy consuption and lower peak power demmand. They have also lower servicing costs and lower lubrikant oil ussage. Last but not least we get renewing the equipment and encreasing the reliability. Speaking with numbers we plan to decrease anual operation costs from 64400EUR to 43900EUR and to obtain anual energy savings of 196MWh electrical energy

Results:

Energy saving potential [kWh/a]: 195640	Investment costs [Euro]: 47.845
Energy source: electricity	Pay-back time [Years]: 2,17
Cost reduction potential [Euro/year]: 20497	Chance of implementation:
CO_2- saving potential [t/a]: 117	(X) high ( ) middle ( ) low
(0,6kg CO_2 per kWh)	or date of implementation