

Energy concept summary

Title of the energy concept: Improving Energy Efficiency through Lighting Refurbishment at FME & FEEIT Campus

Topic area choice and topic marking in blue:

- () **Building** e.g. Insulation, change of windows, Low-energy-buildings
- (X) **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: Campus of the Fac. Mech. Eng.(FME) & Fac. Elec. Eng. & Information Technologies (FEEIT), University of Ss. Cyril and Methodius (UKIM), Skopje, R. Macedonia

Branch & NACE-Code(s): mech. & elec. eng., 28.52, 73.1, 80.30

Products/Services: Education, R&D

No of employees/students: 95/~1500 (FME) + 86/~1800 (FEEIT)

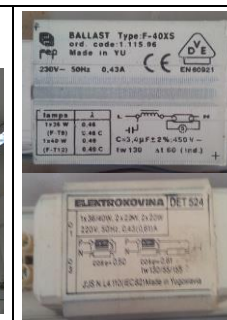
Name of energy concept producer: Ana M. Lazarevska

Participant in EUREM No.:

Energy concept description:

- **Aims:** energy savings through lighting refurbishment in four of the Campus premises.
- **Base situation:** The lighting system in the analyzed premises is older than 25 years and consists of luminaires with fluorescent lamps and conventional ballast. Analyzed are 1927 luminaires with 4641 fluorescent lamps in 380 rooms/spaces.
- **Optimization potentials:** substitution of the old lights + CB with EE LED lighting.
- **Proposals of solution / Optimization possibilities:** Simple substitution of the old fluorescent lights + CB with new LED lights.
- **Effects:** Energy (electricity) consumption reduction, economic benefits through lower electricity bills, environmental benefits CO₂ emission reductions.

Pictures, Base situation



Results:

Energy saving potential [MWh/a]: 169.5
 Energy source: electricity
 Cost reduction potential [€/year]: 18078 (1st year)
 CO₂- saving potential [t/a]: 169.5
 (EF of the national grid: ~1 kg CO₂ per 1kWh)

Investment costs [Euro]: 70,633
 Pay-back time [Years]: 3.95
 Chance of implementation:
 (X) high () middle () low
 or date of implementation