

Energy Reconstruction of Dormitory in Serbia

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Sponsor & Operator's experience

- Sponsors experience with the technology: 10 years of experience including promotion, energy calculations and measurements
- Operator's previous experience: 20 years use of existing technology only (gas operated boilers, supply of electricity, cold water supply, sanitary water tanks with electric heaters)

Brief project description

- The project will include a detailed energy audit and a study proposal of solar energy implementation for water heating, measures of overall energy efficiency of heating and water supply improvement and suggestions for implementation of energy efficiency measures (thermal insulation of the roofs, thermal insulation of the floors, change of the windows and doors, insulation of outer walls, temperature regulation, installation of balancing valves and thermoregulation valves).

Benefits

- Savings in money (because of savings in energy source)
- Environmental improvement
 - less greenhouse gases emission and also promotion of clean energy use, which eventually would lead to creation of new jobs in this field.
- An indirect benefit is also promotion of renewables to the pupils where they can see the direct application of renewables for every day use.
- Part of imported natural gas is substituted by solar energy.

GHG reductions

- 27683 kWh decrease of consumption of natural gas (with emission factor 0.22674 tCO₂/MWh) because of solar energy use will give annual emission reduction of 6.82 tCO₂,
- 371702 kWh decrease of consumption of natural gas due to application of energy efficiency measures will give annual emission reduction of 83.74 tCO₂.
- 18455 kWh decrease of electric energy consumption (using Serbian Energy Grid Emission factor 0.945 tCO₂/MWh) because of solar energy use will give annual emission reduction of 17.44 tCO₂.
- Overall annual emission reduction is 108 tCO₂.

The project's source of cash flow

- The owners' investments, bank loans and provincial authorities loans
- Total investments and revenues 235,923 EUR
- Estimated revenues per year 23473 EUR
- Owner's Equity 30%
- Bank Loans 70%