

Changing the water heating System to an economical energy system – Israel

SUMMARY

Project Description: Adding solar water heating system & replacing diesel heaters with heat pumps

Project Type: Energy Efficiency & Sun

National Association: IYHA

Project Location: Youth Hostel Ein-Gedi

Estimation of number of reduced tonnes of

CO2 per year: 60 tonnes per year

Total Funds Requested: £ 21,520

Total Project Cost: £ 87,630

Annual £ saves and ROI (return of investment):

£ 21,520; ROI – 24 months

Extra Benefits: The system will supply hot water for bathing and kitchens in the youth hostels all year round, while reducing the CO2 emission and using "Green standards".

Why should this project be funded ahead of others?

This is one of the projects in a long list of projects. Participation in financing this project will bring future and additional investment in energy saving projects.



We are planning to save by installing an advanced system that is also ecological at least 80% of expenses for heating "diesel for heating costs. The new system will save energy costs, diesel consumption and CO2 emission. It will use solar energy, in a region where the sun is an available resource.

DETAILED PROJECT INFORMATION

The IYHA is a pioneer in formulating "Green Standards", encouraging sustainability, preserving the environment and using renewable energy. Our new water heating system will supply hot water for bathing and kitchens in the youth hostels year round. The system will use solar energy, in a region where the sun is an available and economical resource and will lead to a significant reduction in CO2 emission.

A similar project has been already implemented successfully in "Karei-Deshe" youth hostel, North Israel. There we can already see proof of 80%-90% saving in diesel usage, and about 30% saving in energy costs.

This innovative project is a part from the multi-year plan of the IYHA a plan that will lead us to:

1. Reducing energy consumption and using renewable energy sources such as solar energy for heating water.
2. Reducing water consumption and water recycling where this is possible
3. Reducing the production of waste separation and recycling of water such as paper, plastic and metal.
4. Purchase of environmentally preferred products, such as recycled products or products with low energy rating.
5. Construction of Hostels in accordance with "Green Building"
6. Training and integrating conversation on the subject of preserving the environment among employees and guests

Hostels where project activities will occur if grant is awarded

The grant will be used for implementing the project of changing the Water heating System of diesel to a water heating system with pumps at "Ein-Gedi" Youth Hostel in the Dead Sea region in Israel, as part of the IYHA multi-year program for energy efficiency. A similar project in "Karei-Deshe" Youth Hostel in North Israel has already been implemented successfully.

Purpose:

Changing the Water heating System to an economical energy system

Methodology:

The old system in "Ein-Gedi" Youth Hostel warmed bathing water for 100 rooms which consumed large amounts of diesel and contaminated the environment.

The system is about to change to a new system that includes a combination of a solar system with heat pumps savers storage and monitoring that controls the system. The system will supply hot water for bathing in the youth hostels all year round and will supply hot water to the kitchens. The heat pumps warm water all night.

In this way there is a shifting of electricity using to heat the water from the peak hours during the day to the lowest hours in the night. The hot water is therefore contained in a storage tank and the heat is maintained all day long using solar panels that work as a solar system. This system provides 10 cubes of washing water per day.

The main heating system includes: Efficiency heat pumps to high temperatures, separate storage tanks for hot water, controllers, management and supervision, all computerized.

The right combination of the different systems and the running times inspections will allow higher savings. **All of the systems in use are "Green Systems" that don't reject poison gases into the atmosphere and "Green Machined" to prevent formation of stones.**

Monitoring Plan:

The system is controlled and monitored from long distance and gives Real-Time Data.

Environmental Impacts:

A significant reduction in poison gases being released into the atmosphere.

Estimation of emission reduction:

A transformation from the steam system that uses fuel to a green system that joins solar powered systems and heat pump saving systems. Reducing the annual consumption from 25,000 liters of diesel to 5,000 liters leads to a substantial reduction in emissions of CO₂ of about **60 tonnes per year**.

Saving Funds and Rio:

This is a system that is fully functional for two years in "Karei-Deshe". We can already see proof of between 80% to 90% savings in the usage of diesel in the youth hostel and a total of 30% in energy expenses. The return in investments in "Karei Deshe" is 19 months. We can estimate the ROI in "Ein Gedi" project is 24 months.

Why should this Hostel be funded?

This is one of the projects in a long list of projects. Participation in financing this project will bring future and additional investment in energy saving projects. We are planning to save by installing an advanced system that is also ecological at least 80% of expenses for heating "diesel for heating costs.

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