



## EE pilot project for corporation JNNURM building

Furthering the agenda of addressing efficient energy usage and consumption in the building sector in Coimbatore, specifically in corporation-owned buildings, an energy saver was installed in the CMC's new JNNURM building in order to demonstrate the effect of an energy saver or energy management system to further reduce real-time energy consumption within a building. The installation was completed in 2010 and has achieved savings of approximately 15% in the building's energy consumption.



### Background and purpose

Improvements in building efficiency can be affected by various cost effective means, and can vary from structural to electrical measures. Improving the efficiency of a building's 'energy consumption patterns' is a crucial step towards attaining sustainability in a building complex. An energy saver enables smart use of the building's energy, thereby allowing further savings and reduction in energy bills.

The project aims to cut energy consumption in buildings via an electrical power saving device known as the Power Saver 1030 System. The purpose of the project activity is:

- To cut down power consumption by the device's 'Load Optimizing Function'.
- To save on energy bills and obtain a corresponding emission reduction by reduced power usage.
- To showcase the importance of an energy management system or energy saver system as an additional tool for energy efficiency in buildings

### About the activity

A new building was constructed within the Coimbatore Corporation premises with JNNURM funds. With a view to effect energy savings and encourage efficient use of energy in this building, a Power Saver 1030 system was recommended. It is based on critical power factor management, coupled with constant load monitoring. The system will have the ability to regulate the electrical supply to precisely match with the required load, which results in substantial savings in power consumption.

Recommended to the CMC by ICLEI South Asia as a demonstration tool to showcase the benefits of such a system, the design and installation process was undertaken by a local business.



Individual/ Pilot application as per project				Potential for Citywide Application			
Annual energy reduction	Annual CO <sub>2</sub> emission reduction	Cost of electricity	Annual cost savings	Annual energy reduction	Annual CO <sub>2</sub> emission reduction	Cost of electricity	Annual cost savings
20709 kWh	18 Tonnes	₹3.50 / kWh	₹0.075 million	621270 kWh	540 Tonnes	₹3.50 / kWh	₹ 2.17 million

## Outcomes, lessons learnt and replication

The energy saver has been functional since the end of 2010, and has been registering substantial reductions in energy usage of the building. One of the main advantages of such a system is that it is independent of a location, and can be installed in buildings across the city. Thus the project has high viability for scaling up to a citywide level. An energy saver system is useful for existing buildings with systems already installed, as the system manages the load to reduce consumption.

The main benefits of the project were observed to be:

- Energy savings of around 15-35% to be achieved (21000kWh / year) and

- Estimated emission reductions of 18 Tonnes / Year.

Factors to be kept in mind if considering replication of this system include the relatively high maintenance costs, and the requirement of qualified installation staff and material locally. The EE project can function more smoothly and more effectively only if a long term “Master Building Plan” is constituted for buildings across the city. Operating on a Public-Private Partnership basis would not only cut project costs but would also increase process efficiency.

The EE Power Saver Project is highly viable financially due to its low capital costs and quick return on investment. The project also has high technical viability which leads to substantial saving of energy bills for the users.