23-12-14 Deccan Chronicle

Metro rail to chug on energy efficiency track

JACKSON JOSE | DC
CHENNAI, DEC. 22

Chennai Metro Rail Limited (CMRL) is keen to use solar energy at its stations and implement more energy saving measures.

Its 42 trains will be equipped with regenerative braking whereby the energy created by the braking process will be funnelled back into the system.

The regenerated electrical energy will then be used by other accelerating trains on the same service line.

Energy costs comprise 5 to 15 per cent of operational costs on the metro and traction power accounts for 60 to 80 per cent of this.

"Regenerative braking saves energy by about 30 per cent. There is also less maintenance and replacement of parts and reduced heat load generation in underground corridors," officials say.

Metro rail also has plans to include solar energy in stations on the elevated corridor, but this calls for higher investment and maintenance costs.

The stations have been designed in such a manner that dependence on electrical lighting is minimal, natural sunlight doing the job.

Lighting within the trains works with in-built light sensors that detect outside lighting and brighten or dim accordingly. The air conditioners too are sensor-based, maintaining the temperature based on the number of passengers.

There are three substations coming up for the metro in the city which will receive power from TNEB and supply it to the trains and stations.

The 110 KV substation in Koyambedu has started its operations; two others are yet to take off. The three unmanned substations allow an uninterrupted power supply to the trains.

Delhi Metro Rail, on whose blueprints CMR is being built, has set a high benchmark: it was awarded 6.3 lakh carbon credits by the UN three months ago for its energy efficient methods.

GREEN MEASURES BY CHENNAI METRO RAIL PROJECT

- 42 trains built with regenerative braking system which uses the energy created by the braking process
- The regenerated electrical energy is supplied back and used by other accelerating trains in the same service line
- Energy costs comprises 5 to 15 per cent of operational cost in the metro and traction power accounts for 60 to 80 per cent of this energy cost
- A solar pilot project planned in one of the metro stations on the elevated stretch
- All the stations have been designed in an open manner such that it uses the sunlight for lighting and dependence in electrical lighting is minimal
- Trains fit with light sensors which light according to the lighting outside
- Air-conditioners fixed in the train too are automatic and sensor based maintaining the temperature based on the number of people inside the train