Striving to make DMRC green and efficient

To combat increasing electricity bills in a sustainable manner, the Delhi Metro Rail Corporation (DMRC) is laying a lot of emphasis on harnessing renewable sources of energy and increased focus on energy efficiency. The corporation has already installed some solar projects within its premises and is working on harnessing more power from renewables. In an interaction with ***Energy Next***, the Managing Director of Delhi Metro, ***Dr Mangu Singh***, talks about various clean energy initiatives that are underway and his plans for the future.

Q Amid increasing concerns of climate change and depleting fossil fuel reserves, a lot of emphasis is being given to clean energy technologies. How do you rate the works undertaken by DMRC in that regard?

The Delhi Metro Rail Corporation (DMRC) has put its best efforts in energy conservation system by using the latest technologies from the design stage to the execution stage. DMRC is using the maximum energy efficient equipments in air-conditioning and LED in lightings. As a result, there are plans to get green (IGBC) certifications for upcoming stations in Phase 3. Moreover, to ensure that energy conservation and monitoring is a continuous process during Operation and Maintenance of the system also, we are going in for ISO 50001 certification, which sets the benchmark for energy consumption levels.

DMRC is registered with Gold standard for clean energy technology. The efforts are being made to utilise vacant roofs of Delhi Metro to install solar panels for generating clean electricity. The efforts being made by DMRC are significant, conscious steps, which can be rated as one of the best in the industry.

What are the opportunities and challenges that you see in tapping renewable energy sources, especially solar power, for powering the Metro stations?

The depots and stations as well as parking areas of DMRC have the optimum potential of generating solar power, which is a renewable energy source. Providing solar panels in operational stations and train depots is a challenge for the DMRC team to ensure safe execution and without creating any disturbance to already operating system carrying lakhs of passengers daily at a high punctuality rate.

What steps are being taken by the DMRC to accomplish its target of generating 20 MW of solar photovoltaic (PV) rooftop plants within the next three years?

We have so far installed approximately 1.5 MW of solar PV power plants on the roof tops and work on another 8.5 MW is in progress for which orders have been placed. Tenders for 10 MW are likely to be floated shortly based on the progress of already awarded works.

The metro station at Dwarka Sector 21 is already being powered by solar energy? Tell us something about the amount of saving that is taking place? How do you plan to replicate the model to other metro stations?

The present rate of tariff for solar power plant at Dwarka Sector 21 is one rupee cheaper than the average grid rate of electricity purchased by DMRC. The power plant has so far generated approximately 5 lakh units in the last 11 months. With the increase in tariff from grid, gap would increase and consequently result in further savings. The power purchase agreement (PPA) has been signed for a period of 25 years.

What kind of support are you receiving from the GiZ, a federal enterprise of the Government of Germany, with regard to extending DMRC's solar initiative under its COMSOLAR programme?

GIZ helped us in assessing the potential of solar power on three of DMRC's sites of different patterns – one was a depot, one a flat roof and another one was an inclined station roof. They surveyed the sites of DMRC including Dwarka Sector 21 and prepared the detailed project report (DPR) for solar power works.

DMRC has also inked an MoU with the Solar Energy Corporation of India (SECI). Please tell us something about it? Which other organisations are you planning to collaborate with, as far as harnessing of renewables is concerned?

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DMRC entered into a memorandum of understanding (MoU) with GIZ and another MoU with SECI for development of solar PV projects in DMRC. Under their support and guidance, DMRC understood the issues involved in the system and decided to go for Renewable Energy Service Company (RESCO) model.

The Government of India is laying a lot of emphasis on energy efficiency. What initiatives are being taken by DMRC in terms of conserving power by adopting energy efficient measures?

Energy efficient equipments such as Chiller, Variable Frequency Drive in Chiller & AHU, Variable primary in Air-conditioning, large scale use of LED lighting in underground stations, regeneration feature in lifts, variable voltage and variable frequency drive in lifts and escalators, deployment of constructed wetland for sewage treatment, etc are some of the new initiatives taken by the DMRC to conserve energy. We are also in process of setting up an energy monitoring system of all major equipments for their deliverance of designed output and taking precaution to ensure efficiency during operations also.

What kind of support are you getting from the Ministry of New and Renewable Energy in your endeavour to push green initiatives in DMRC?

The Ministry of New and Renewable Energy (MNRE) has so far sanctioned central financial assistance (CFA) of approximately ₹25.5 crore for provision of solar power of 20 MW in DMRC premises. This has helped us in taking up solar power projects vigorously.