

# **One Day Seminar** **on** **Solar Energy-opportunities in Rail Sector**

Tuesday, 4<sup>th</sup> August, 2015  
Vigyan Bhawan, New Delhi



*Organised by :*

**Institution of Railway Electrical Engineers,  
Delhi Metro Rail Corporation (DMRC)**

**&**

**The Institution of Engineering and Technology**

*Under the Aegis of :*



**United Nations Development Programme - GEF**

## The Organizers

### *United Nations Development Programme - GEF*

UNDP partners with governments and people to help build nations and drive and sustain the kind of growth that improves the quality of life for everyone. On the ground in more than 170 countries, UNDP offers global perspective and local insight and provides technical assistance, policy advice and development support services using flexible implementation modalities. UNDP has worked in India since 1951 in virtually all areas of human development from democratic governance to poverty eradication to sustainable energy and environmental management. UNDP's programmes are aligned directly with national priorities and are reviewed and adjusted annually.

UNDP in India is committed to promoting low carbon, climate resilient and inclusive development. We support the Government of India in meeting national development objectives along with commitments under important multilateral environment agreements. Key areas of intervention are climate change (mitigation and adaptation), sustainable natural resource management (conserving biodiversity and addressing land degradation) and integrated chemical management (phasing out of ozone depleting substances and reducing persistent organic pollutants).

UNDP's partnership with the Ministry of Railways is promoting energy efficiency in the Indian railways, one of the world's largest railway networks. Since 2009, UNDP has been privileged to support a project with the Ministry aimed at removing key with the barriers that prevent wider adoption of energy efficiency technologies and measures in the railway system.

### *The Institution of Railway Electrical Engineers*

The Institution of Railway Electrical Engineers is a professional body of Railway Electrical Engineers. It is a technical body under the auspices of Ministry of Railways sharing knowledge and experience of various Railway engineers and others connected with Electrical Engineering. The Institution, registered at Nasik in 1995, has been recognized by Railway Board in the year 1998. The Institution aims to disseminate and share the technical knowledge among the Railwaymen and industry regarding the available and new technology related to design, construction and maintenance of electrical assets including energy management portfolio. It is the plaza for adopting new emerging technology to serve the need of Railway Electrical Engineering.

### *Delhi Metro Rail Corporation (DMRC)*

The Delhi Metro Corporation Ltd. (DMRC) is a joint venture of the Government of the National Capital Territory of Delhi (GNCTD) and Government of India. The Organization is implementing the construction and operation of a world-class Mass Rapid Transport System (MRTS) since its inception.

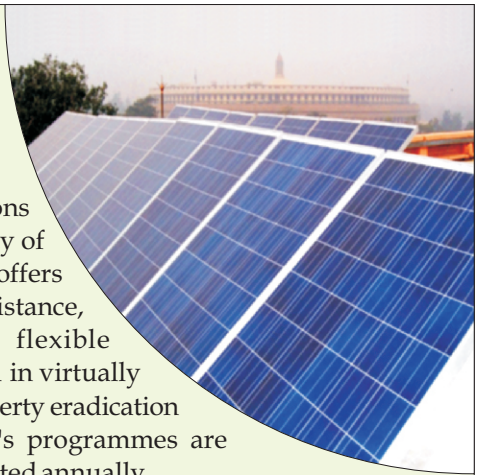
The Delhi Metro has been instrumental in ushering in a new era in the sphere of mass urban transportation in India. The swanky and modern Metro System introduced comfortable, air conditioned and eco-friendly service for the first time in India and completely revolutionized the mass transportation scenario not only in the National Capital Region but the entire country.

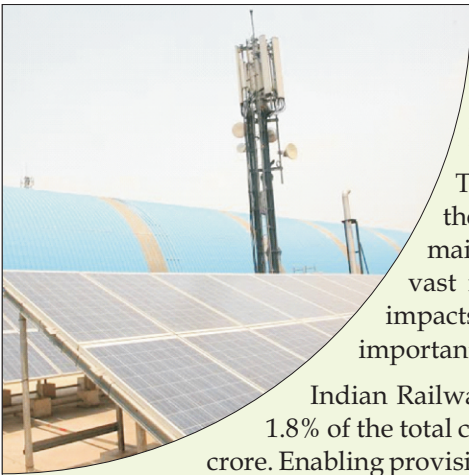
The Delhi Metro has also contributed tremendously on the environment front by becoming the first ever railway project in the world to claim carbon credits for regenerative braking. DMRC has set an ambitious target of setting up roof top Solar Plants of 20 MWp capacity in 3 Years, on Depots, Stations, residential buildings, etc. Out of which 2.5 MWp has been installed and Power Purchase Agreements for 10 MWp have already been signed.

### *The Institution of Engineering and Technology*

The IET (UK) founded in 1870's as Institution of Electrical Engineers (UK), is a professional body of Engineers, Technologists and Scientists, with a Global network of over 153,000 members, spanning the fields of power, electronics & Communication, controls & Software, manufacturing, Management & Inter Related Disciplines.

Delhi Local Network, as a part of IET (UK) regional networks, besides holding technical talks, events, seminars etc. also is running student chapters at IIT's DTU, BITS, IT-BHU, NIT's & leading technological colleges in Northern Region, NCR & Seven states, to mentor students for transition to the profession.





### **Preamble**

The National Action Plan on Climate Change (NAPCC), released by the Prime Minister on 30th June, 2008, recognizes the need to maintain a high growth rate for increasing the living standards of the vast majority of people and reducing their vulnerability to adverse impacts of climate change. The National solar Mission is one of the most important of 8 National missions.

Indian Railway consumes about 17.5 billion unit of electricity, which is about 1.8% of the total country's generation with an annual expenditure of over Rs. 11,000 crore. Enabling provisions in Electricity Act 2003 and subsequent Regulatory frameworks now provide ample opportunity to obtain power at competitive rates. 'Vision 2020' document of Indian Railways envisages sourcing at least 10% of energy used from renewable sources such as solar power and wind power.

The efforts of the Railways in setting up renewable energy projects would contribute to Government of India's 100 GW of solar target under the National Solar Mission. Given the large scale of operations and coverage of the Indian Railways, even sourcing a small percentage of its power requirements from renewable energy sources would have a substantial impact. The Union Rail Budget 2015-16 stressed the need for harnessing solar energy and identified railway stations as one of the largest potentials for the same.

This proposed seminar is being organized keeping in view the above objective.

### **Objective**

The seminar will provide opportunities to electricity generators, developers, power exchanges, policy makers, various Govt. Agencies, technical experts, stake holders in formulating a road map in managing the energy portfolio of Rail sector as well as the opportunity that exists in the landscape of power sectors, Concepts discussed & exhibited at this seminar will help to achieve synergy in thought and action across user, suppliers and utilities. It will also help evolve appropriate policies to make different technologies competitive Solar Energy.

### **Coverage**

The seminar will provide a complete spectrum of Rail Sector Electric Energy system challenges being faced by them to avail the electricity from solar system at the minimum tariff.

### **Participation**

Agencies having experience in development of solar systems, renewable energy systems, research and development institution, power sector, solution providers, industries, project developers and individual experts are expected to participate and sharing their knowledge and experience through papers and presentations, Delegates from IR, DMRC, PSUs, industries & different institutions like IET, IEL, IREE etc and abroad will get immense benefits out of the deliberations of conference.

### **Guidelines for Preparing the Paper**

- The paper should typed in A4 size with 25 mm margin on all side in MS-word document with single line spacing and font : Times New Roman, size12.
- The author's name, designation and organization are to be mentioned below the title.
- An Abstract of the paper may be provided, Times New Roman, size 10, italics.
- All figures, annexes, exhibits etc are to be properly indexed and references are to be clearly indicated in the body of the text.
- The maximum length of the paper is to be limited to 6 pages.
- One hard copy of the paper is to be submitted along with a soft copy on a CD. The soft copy may also be submitted through e-mail in advance.
- A brief resume of the author (s) not exceeding 200 words and a Passport size photograph should be enclosed along with the paper.

*Papers may be submitted to:*

**Mr. R. S. Grover**  
*Executive Director, IREE*  
R-749, 1st Floor, New Rajinder Nagar, New Delhi-110060  
Mob. : + 91-9811420246 E-mail : groverrs@gmail.com

### **Participation fee for Delegates**

#### *Registration:*

Intending participants in the Seminar are requested to fill and return the enclosed registration form along with requisite fee by 21st July, 2015.

#### *Fee:*

Delegate	₹ 3,000
Members of IREE, IRSTE, IE(I), IEEE, IET (UK), Ministry of Railways, Zonal Railways, PSUs under Ministry of Railways	₹ 2,000

The fee includes Seminar kit, tea and lunch.

### **Sponsorship**

Sponsor	₹ 2 lacs
Co-Sponsor	₹ 1 lac
Assistant Sponsor	₹ 0.5 lac

Logo of all the Sponsors will be displayed at the Backdrop and other suitable places.

### **Venue**

Hall No. 5, Vigyan Bhawan, Maulana Azad Road, New Delhi

### **Payments**

All payments towards Participation and Sponsorship Fee may be sent by Bank Draft/Cheque at par drawn in favour of "Institution of Railway Electrical Engineers" payable at New Delhi or through ECS, A/c No. 20373872161, Allahabad Bank, Northern Railway Headquarters, Baroda House, New Delhi, MICR Code : 110010005, IFSC Code : ALLA0210619, PAN No. : AAATI1279H and sent to :

**Mr. R K Atoliya**  
*Honorary Treasurer, IREE*  
CEDE, Northern Railway, Baroda House, New Delhi-110001  
Telefax : 91-11-23384474, Mobile : +91-9717630303, E-mail : treasureriree@gmail.com

### **Important Dates**

Date of Seminar	August 4, 2015
Last date of receiving Nominations Form alongwith Fee	July 31, 2015
Sponsorship matter with Fee	July 31, 2015
Last date of receiving papers	July 20, 2015

### **For any queries, Please Contact**

**Shri R.N. Rajput**  
*Organising Secretary, IREE*  
Chief Electrical General Engineer  
Northern Railway Hd. Qrs. Office, Baroda House, New Delhi,  
Phone : +91-11-23383380 Mobile : +91-9717630308 E-mail : orgsecyiree@gmail.com



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***Solar Energy-opportunities in Rail Sector***

4<sup>th</sup> August, 2015 • Vigyan Bhawan, New Delhi

**REGISTRATION FORM**

**Please type or write in Block letters :**

Name Prof./Dr./Mrs./Ms./Mr. ....

Designation .....

Company/Organization .....

Mailing Address .....

.....

Phone/Cell ..... Fax .....

E-mail .....

Details of Additional Participants (Name & Designation) etc.

i) .....

ii) .....

iii) .....

My interest is in (Tick as applicable)

Participation    Submission of Paper    Sponsorship    Co-Sponsorship

Bank Draft/Cheque at par drawn in favour of "Institution of Railway Electrical Engineers" payable at New Delhi or through ECS, A/c No. 20373872161, Allahabad Bank, Northern Railway Headquarters, Baroda House, New Delhi, MIRC Code : 110010005, IFS Code : ALLA0210619, PAN No : AAATI1279H.

Bank Draft/Pay Order No. .... Dated .....

Bank Name .....

Amount .....

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*(Please use photocopies for multiple registrations.)*