



renewable
energy
& energy
efficiency
partnership

REEEP Norway Special event on

Mainstreaming Solar Energy Development in India

Venue: Silver Oaks Hall, India Habitat Center, Lodhi Road, New Delhi

Date: 3rd Feb 2010

In 2009 India launched a plan to become the world leader in solar energy by unveiling the Jawaharlal Nehru National Solar Mission. The country has an ambitious plan to increase installed, grid-connected solar capacity from the current three megawatts (MW) to one gigawatt (GW) by 2013, and 3 GW by 2017. Also proposed in the mission are targets for one GW in off-grid solar power by 2017, 2 GW by 2022, in rural areas and 10 GW by 2017. By 2022, the country aims to have 20 GW of solar power with an initial investment of 946.9 million USD.

The following table shows the summarized targets for solar thermal collector area to be installed during each of the 3 implementation phases, creating the secure conditions needed for possible investments.

S. No.	Application segment	Target for Phase I (2010-13)	Target for Phase 2 (2013-17)	Target for Phase 3 (2017-22)
1.	Solar collectors	7 million sq meters	15 million sq meters	20 million sq meters
2.	Off grid solar applications	200 MW	1000 MW	2000 MW
3.	Utility grid power, including roof top	1,000-2000 MW	4000-10,000 MW	20000 MW

Source: Jawaharlal Nehru National Solar Mission

Though the mission anticipates some issues regarding the off grid generation and grid parity but all and all the mission is an ambitious yet realistic plan lauded by the industry and the government is keen on ensuring that the implementation of the plan is transparent, time-bound, and effective.

Policies formulated and developed in the first phase of mission will create the necessary environment to attract industry and project developers to invest in research, domestic manufacturing and development of solar power generation. A solar research council is proposed to be set up to oversee the implementation of the mission. The role of the research council will be to keep a tab on the number of ongoing projects, ensure availability of research capacities and resources and explore the possibilities of international collaboration.

As far as utility – scale solar power is concerned, it is proposed to appoint NTPC Vidyut Vyapar Nigam Ltd. (NTPCVVN) as the designated nodal agency to enter into power purchase agreements (PPA) with solar power developers and buy electricity from these developers. The Central Energy Regulatory Commission (CERC) will set the tariffs for the same. Initially the PPAs will be signed with all the developers, setting up the projects within the next three years. NTPC VVN will sell the power to the various state – owned distribution companies at the prices fixed by CERC

REEEP (Renewable energy and energy efficiency partnership) in association with RCN (Research Council of Norway) and IFE (Institute of Energy Technology) plans to have a DSOS special event on “Mainstreaming Solar energy Development” in India. The one day event will have Experts from government, regulatory commissions, public and private sector, financial institutions, academia, and R&D institutions.

The participant profile will include officials from the public sector, academia, R&D institutes and industry

Potential International Participants Include

Univ of Oslo, NTNU Trondheim, SINTEF og IFE,
Industry partners like Elkem Solar, Umoe Solar, Scatec og Predikto

Potential Indian Participants Include

State and central government bodies: MNRE (Ministry of new and renewable energy), IREDA (Renewable Energy Development Agency Limited), CERC (Central Electricity Regularity Commission)

Industry: Titan Energy, Tata BP, Maharishi, MoserBaer, Indosolar, REIL, Milman Thin Film Systems

R&D: TERI, IIT Madras, Anna University, National Physics Laboratory (NPL), Mother Teresa Women’s University

And

Multilateral and bilateral: Asian Development Bank, World Bank

The Renewable Energy and Efficiency Partnership (REEEP) is a global public-private partnership formed in 2002 during the World Summit on Sustainable Development in Johannesburg and has the status of an international NGO. The partnership structures policy initiatives for clean energy markets and facilitates financing mechanisms for sustainable energy projects with a clear aim of accelerating and expanding the global market for renewable energy and energy efficiency technologies. REEEP partners include governments, businesses, NGOs, financiers and other representatives of civil society. By providing opportunities for concerted collaboration among its partners, REEEP aims to accelerate the marketplace for renewable energy and energy efficiency. The South Asia Secretariat, hosted by Asian Energy Institute, was launched on 30th November 2005.

The Research Council is Norway's official body for the development and implementation of national research strategy. The Council is responsible for enhancing Norway's knowledge base and for promoting basic and applied research and innovation in order to help meet research needs within society. The Research Council also works actively to encourage international research cooperation.

- The Research Council serves as an advisory body on research policy issues, identifies research needs and recommends national priorities.
- Through the establishment and implementation of targeted funding schemes the Research Council facilitates the translation of national research policy objectives into action.
- The Research Council serves as a meeting place for researchers, funders and users of research findings, as well as for the different sectors and subject fields that are affiliated with the world of research.

Institute of Energy Technology (IFE) is the research institute for energy and nuclear technology in Norway. IFE's mandate is to undertake research and development on an ideal bases and for the benefit of the society, within the energy and petroleum sector and to carry out assignment in the field of nuclear technology for the nation. The institute strives for a more climate friendly energy system based on renewables and CO₂ free energy sources. IFE's nuclear technology comprises of all activities that are related to the Institute's two reactors, in Halden and Kjeller.

Key focus of the workshop

This workshop will focus on how the private sector can complement the government in attaining the targets set under the National Solar Mission. The discussions would be centered around (a) the kind of enabling environment that would be required to be created encompassing key elements of policy, regulations, financing, and research. & technology development; and (b) the role of international linkages and knowledge-sharing in accelerating the process, especially concerning access to technologies.

Objective of the Workshop

1. To highlight the business opportunities arising from the National Solar Mission
2. To provide a platform for exchange of ideas and sharing experience between the international and national solar fraternity
3. To encourage technology partnerships

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TENTATIVE AGENDA

- 09:45–10:00** : **Registration**
- 10:00–10: 45** : **Inaugural session**
- : Welcome and opening remarks
 - Marianne Osterkorn, Director General, REEEP International Secretariat
 - : Special Address
 - HE Ms Ann Ollestad, Ambassador, Royal Norwegian Embassy
 - : Inaugural Address
 - Gauri Singh, Joint Secretary, Ministry of New and Renewable Energy, Govt. of India, New Delhi
 - : Vote of Thanks
 - Amit Kumar, Regional Strategic Advisor, REEEP SA
- 10:45 – 11:00** : **Tea break**
- 11:00 – 11: 15** : Overview of Jawaharlal Nehru National Solar Mission
 - Shirish Garud, REEEP SA Secretariat
- 11 :15–12.00** : **Panel Discussion 1: Role of Regulation in Solar Energy growth**
Chair: K Ramanathan, Distinguished Fellow, TERI
Panelists:
Alok Kumar, Secretary, CERC
Shyam Wadhera, Member, DERC
P K Mishra, Chairman, GERC
D C Samant, Chairman, RERC
Mahesh Vipradas, GM, Suzlon Energy
A K Lakhina, Forum for Advancement of Solar Thermal (FAST)
- 12:00–12:45** : **Panel Discussion 2: Markets – Opportunities and Financing**
Chair: Marianne Osterkorn, Director, REEEP International Secretariat
Panelists:
D Majumdar, CMD, Indian Renewable Energy Development Agency Limited
Chandan Roy, Director, Operations, NTPC

Sujata Gupta, Head, Private Sector, India Resident Mission, ADB
Arup Ghosh, COO, NDPL Ltd
Anita George, Director – Infrastructure, IFC
Busso von Alvensleben, Deputy Director, KfW Bankengruppe
Rajesh Srivastava, CMD, Rabo Equity Advisors
Rajat Mishra, SBI Capital Market Lmt

12:45–13: 15 : **Overview of the Solar Cell Research and Industry in Norway**
– Erik Stensrud Marstein, Centre Manager, The Norwegian Research
Centre for Solar Cell Technology, Norway

13:15–14:00 : **Lunch**

14:00 – 15.45 : **Technology session 1: Solar cell research in India and Norway**

Hans M. Borchgrevinck, Research Council of Norway
A.Subrahmanyam, Professor, IIT Madras
S Moorthy Babu, Professor, Anna University, Chennai
S Sundar Manoharan, Professor, IIT Kanpur
Anders Elverhøi, Professor, University of Oslo
Vebjørn Bakken, University of Oslo
Eivind Øverlid, Senior Scientist, SINTEF
Sean Erik Foss, Senior Scientist, IFE
Tanja Pettersen, Research Manager, SINTEF

15:45 – 16:15 : **Tea Break**

16:15 – 18:00 : **Technology session 2: Solar cell companies in India and Norway**

Torgeir Ulset, VP Supply Chain & Sales, Elkem Solar
Amitabh Verma, VP Technology, Scatec Solar
Ivan Saha, Head R&D, Moser Baer Photovoltaic Ltd.
Birgit Ryningen, Scientist, Umoe Solar
Tommy Fernandes, co-founder Insite Solar
Dr. P.K. Singh, Head, PV Group, National Physical Laboratory
Mr.Y.Harshavardhana Rao, CTO, Titan Energy