

Jawaharlal Nehru
National Solar Mission
Building Solar India

Ministry of New and Renewable Energy
Government of India

1st Concentrated Solar Thermal Power Summit
New Delhi, September 2010

- **Under the National Action Plan on Climate Change eight Missions have been proposed.**
 - **Solar Mission is its centerpiece**
- **National Solar Mission is one of the major global initiatives in promotion of solar energy technologies.**
- **The Mission aims to achieve volume production, rapid diffusion and deployment of solar technologies across the country at a scale which leads to cost reduction and aiming to achieve grid parity by 2022.**

National Solar Mission has three key components

- **large grid connected plants**
- **smaller grid connected plants**
- **off-grid component**

Road Map

Application segment	Target for Phase I (2010-13)	Cumulative Target for Phase 2 (2013-17)	Cumulative Target for Phase 3 (2017-22)
Grid solar power incl. roof top	1,000 MW 100 MW	4,000 MW	20,000 MW
Off-grid solar applications (incl. rural solar lights)	200 MW 2 million	1,000 MW 10 million	2,000 MW 20 million
Solar collectors	7 million sq meters	15 million sq meters	20 million sq meters

Strategy

Graduated deployment to nucleate critical mass till costs come down and thereafter rapid scale up

- Enabling policy and regulatory frame work**
- Supporting utility scale power generation**
- Expanding off-grid applications**
- Accelerating research and development**
- Enhancing domestic manufacturing base**

Policy and Regulatory Framework

- **Tariff fixed by CERC for purchase of solar power by NVVN**
- **Tariff for 2010-11:**
 - PV Rs. 17.91 per unit**
 - CSP Rs. 15.31 per unit**
 - Annual tariff review by CERC for new projects**
- **Solar specific RPO: 0.25% proposed in 1st phase**
- **Policy for tradable RE Certificate finalized. Available on CERC website – pilot to start**
- **Policy to encourage setting up of manufacturing units in India**

Fiscal Incentives

- **100% Foreign Direct Investment**
- **Zero Customs & Excise Duties on solar cells, modules and many raw materials**
- **5% Customs and Excise duty on many other raw materials, components and grid power projects**
- **Tax - holiday for (i) setting up units in backward and specified areas; and (ii) grid power projects**
- **80% accelerated depreciation in the first year for certain capital investments**
- **Grant for carrying out research and development and technology validation projects**

Solar Power Purchase Policy

In the first phase of the Mission 1,000 MW solar power (connected to 33 kV or more grid) to be purchased by NVVN under the 'bundling scheme'

- 500 MW each for solar thermal and PV
(portfolio to be reviewed after one year)

Permitted plant capacity for a project:

- 5 MW for PV
- 5 to 100 MW for solar thermal

NVVN to purchase solar power from developers, bundle equivalent MW capacity of thermal power and sell bundled power to utilities at the bundled price (Rs. 5.50 per kWh)

Developers to sign PPA with NVVN for 25 years

Utilities can meet their RPO by purchase of solar power

- **Guidelines for selection of new grid connected solar power projects announced on 25 July 2010**
- **Addresses twin objectives of Solar Mission**
 - **facilitating large grid-connected solar power generation**
 - **encouraging domestic manufacturing over time**

Phase I

Phasing allocation of capacity

Solar thermal power projects

500 MW* in FY 2010-11

PV projects

150 MW in FY 2010-11

350 MW* in FY 2011-12

** less capacity of migrated projects*

Within the two broad technology groups, the selection of projects would be technology agnostic

Criteria under Phase I

Solar thermal projects

- Technologies that have plants which have been in operation for a period of one year or a technology for which financial closure of a commercial plant has already been obtained.
- Mandatory to ensure 30% of local content in all plants/ installations (land excluded)

PV projects

- Only commercially established and operational technologies
- Procure project components from domestic manufacturers as much as possible
- First batch during FY 2010-11: mandatory for projects based on crystalline silicon technology to use the modules manufactured in India
- Second batch during 2011-12: mandatory for all the projects to use cells and modules manufactured in India

Criteria under Phase I

Solar thermal projects

Projects shall be commissioned within 28 months of the date of signing PPA

PV projects

Projects shall be commissioned within 12 months of the date of signing PPA

R&D Strategy

- **Research on materials and devices with long-term perspective**
- **Applied Research on existing processes and developing new technologies**
- **Technology Validation aimed at field evaluation of materials, components and systems**
- **Development of Centers of Excellence on different aspects of Solar Energy**
- **Support for Incubation and Innovation**
- **International collaborations – institutional/industrial**

Government funding

- **Government has approved a budget of Rs. 4,337 crores (US\$ 943 million) for the first phase of the Mission till March, 2013 to meet the requirement of funds for GBI, capital grants and refinancing of loans.**
- **1,000 MW grid connected projects are supported through bundling with thermal power, which would otherwise require about Rs. 75,000 crores (US\$ 16.3 billion) to purchase solar power**
- **For further expansion of programme, additional funds will be required.**
- **Government had decided to set up Clean Energy Fund, which will partly support additional projects under the Mission**

Conclusion

- **Jawaharlal Nehru National Solar Mission offers opportunities to invest in:**
 - **Grid power projects**
 - **Off-grid projects**
 - **Manufacturing**
 - **R&D**
- **Enabling policy and regulatory frame work in place**
- **Aggressive R&D and local manufacturing necessary to reduce the cost to achieve grid parity**
- **Partnerships necessary with global stakeholders**
- **New and innovative financing arrangements required**

We solicit your cooperation in achieving the goal and making India a hub of solar technology manufacturing and utilization

Thank you



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