

Jawaharlal Nehru National Solar Mission

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Government of India**

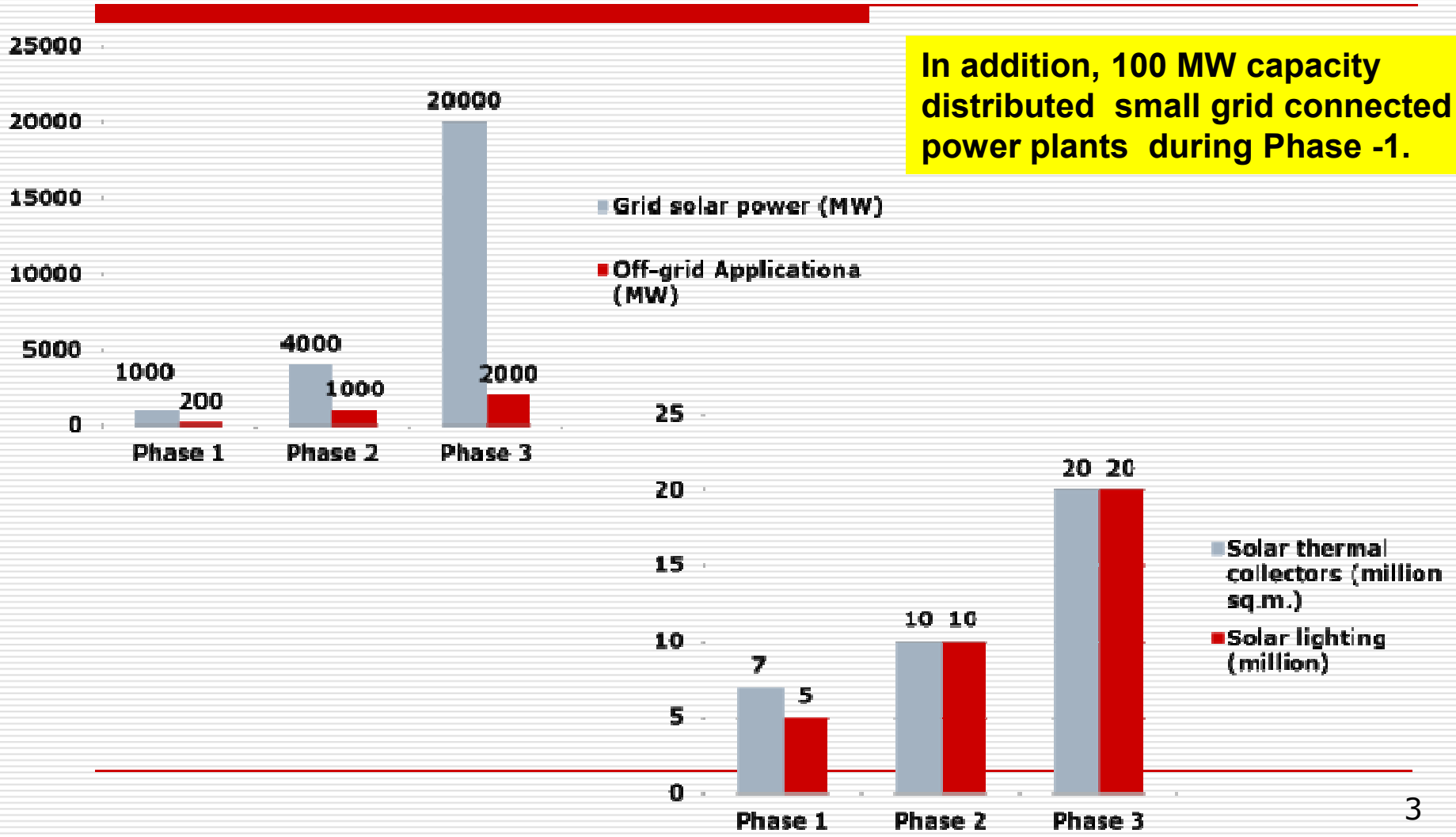
8th June, 2011

Jawaharlal Nehru National Solar Mission (JNNSM)

- India has set up 8 Missions under National Action Plan on Climate Change, National Solar Mission was the first Mission to be launched by the P.M. in January, 2010.
- This Mission is one of the major global initiatives in solar energy.
- 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 grid tariff parity by 2022.

JNNSM Road Map

In addition, 100 MW capacity distributed small grid connected power plants during Phase -1.



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 in market mode
- Accelerating Research and Development
- Enhancing Domestic manufacturing base

Policy and Regulatory Framework

- ❑ Tariff for purchase of Solar Power fixed by Regulators
- ❑ Bundling solar with unallocated thermal power through Central Agency – NTPC Vidyut Vyapar Nigam (NVVN)
- ❑ Competitive Bidding to select utility scale power projects
- ❑ Solar specific RPO 0.25% in 1st phase increase to 3% by 2022. Solar RE Certificates.
- ❑ Refinancing to lower interest rates (5%) for off-grid applications, involvement of NABARD
- ❑ Capital Subsidies (30% to 90%)
- ❑ Grant support for R&D and technology demonstration

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 solar power projects](#) (New)
 - 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 for off-grid applications.
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Targets & Achievements

Application segment	Target for Phase I (2010-13)	Status March, 2011	Target March, 2012
Grid solar power incl. roof top & distributed small grid connected plants	1,000 MW 100 MW	704 MW allotted 98 MW allotted	Remaining capacity by December, 2011
Off-grid solar applications	200 MW	45 MW sanctioned	Total 100 MW sanctioned by March, 2012
Solar collectors	7 million sq meters	4.5 million sq meters	5.7 million sq meters total by March, 2012

Grid Solar Power (Large Plants)

- PV projects to be completed in 12 months & solar thermal in 28 months after signing PPA

- Selection of new PV projects :
 - First Batch in 2010-11 and limited to 150 MWp
 - Second Batch in 2011 of approx 300 MWp (consultations started)

- Selection of all Solar Thermal projects in 2010-11 due to higher lead time

Grid Solar Power (Tariff)

- ❑ Solar Thermal : 7 new projects for 470 MW selected in December, 2010. Average Tariff Rs. 11.48 (US \$ 0.25)
- ❑ Solar PV : 30 new projects for 150 MW selected in December, 2010. Average Tariff Rs. 12.16 (US \$ 0.27)
- ❑ Tariff discounting has helped in reducing the tariff by 30%

Grid Solar Power (Smaller Plants)

- ❑ 100 KW to 2 MW capacity projects, each connected to 11 KV grid being supported through Generation Based Incentive (GBI) to utilities on reimbursement basis
- ❑ Tail-end plants help in improving the grid voltage and provide additional power specially for irrigation pumps and other loads in rural areas during day time
- ❑ GBI rate Rs. 12.41 (US \$ 0.275) per unit which is difference of CERC tariff of Rs. 17.91 (US \$ 0.4) per unit and notional Rs. 5.5 per unit
- ❑ 78 projects for 98 MW selected



**2.5 MW
Solar Thermal
Tower
Grid Power Plant
at Bikaner,
Rajasthan**



5 MWp PV (Crystalline) Grid Power Plant at Khimsar Village, Jodhpur, Rajasthan (Pilot Scheme)



**1 MW PV (Crystalline Silicon) Grid Power Plant at New Delhi
(Solar RPO arrangement)**

Grid Solar Power

Present Status/Likely Commissioning

- 56 projects reported arrangement of funds (130 projects)
 - Most of the other projects expect financial closure by end June, 2011
 - 50 MW already commissioned
 - 200 MW PV projects expected to be commissioned during September – December, 2011 under Mission
 - 200 MW PV projects from Gujarat by 2011.
 - Another 400 MW expected in 2012 (Mission, Gujarat, Maharashtra)
 - Solar thermal projects are to be commissioned by 2013.
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Off-Grid Solar Applications

- 200 MW capacity in the first phase
But, a huge developing market of several thousand MW if diesel price rise and solar prices decline

- Demand driven expansion
 - 30% subsidy & loan @ 5% for individuals & non-commercial
 - 30% subsidy OR loan @ 5% for commercial
 - 60% - 90% subsidy for Government projects in special category States and in other remote and difficult areas

Off-Grid Solar Applications

- Additional channels for supply and maintenance (RESCO, Financial Integrators, System Integrators, Corporates, Government Agencies and Banks etc.) through accreditation by rating agencies

- Can save substantial quantities of kerosene and diesel and improve access

Focus on

- solar lights, specially in rural areas
- rural power supply(Pilot projects done)
- Solar power to replace diesel – Telecom/ industry/pumps
- Solar water heaters
- Process Heat

Next steps

- Allocate 300 MW solar PV projects by December, 2011
- Large capacity (> 5 MW) may be considered
- Start process for Phase-II of the Mission; specially solar thermal projects
- *Quantities and process to be decided after consultations in next few months*
- *Try out demonstration projects in solar thermal; process to start soon*

Thank You

<http://mnre.gov.in>