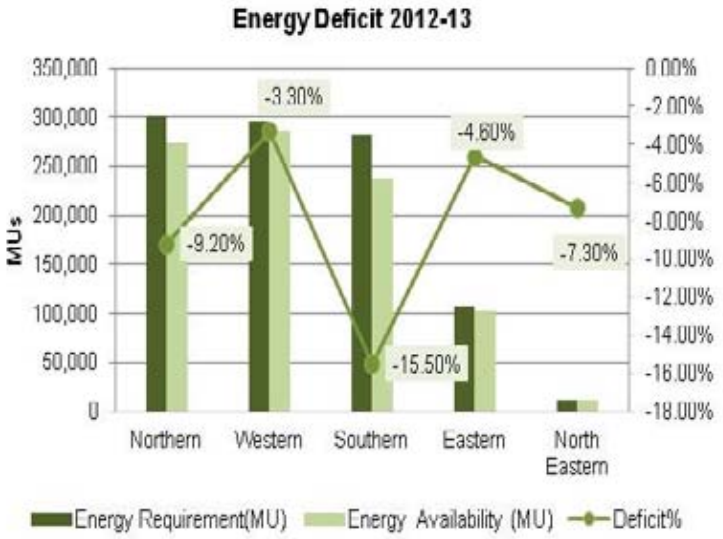
# Jawaharlal Nehru National Solar Mission

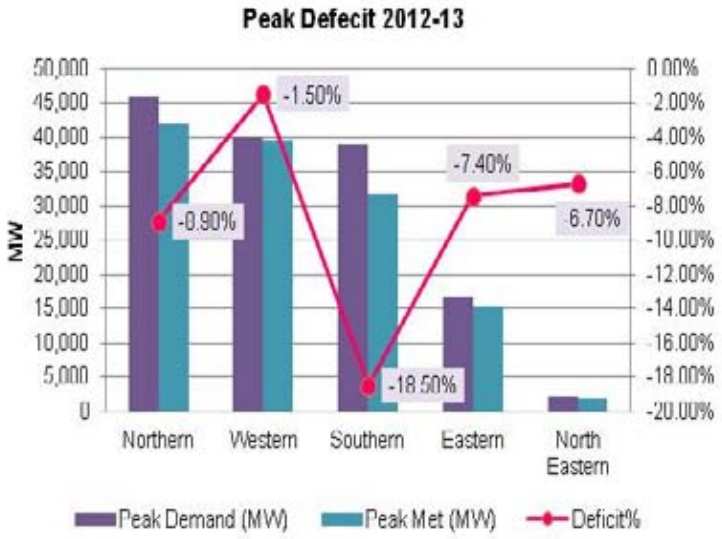
Ministry of New and Renewable Energy
Government of India

**Dr. Arun K Tripathi**
**Director**

# Introduction

## Overall Energy Deficit and Peak Energy Deficit in 2012-13*

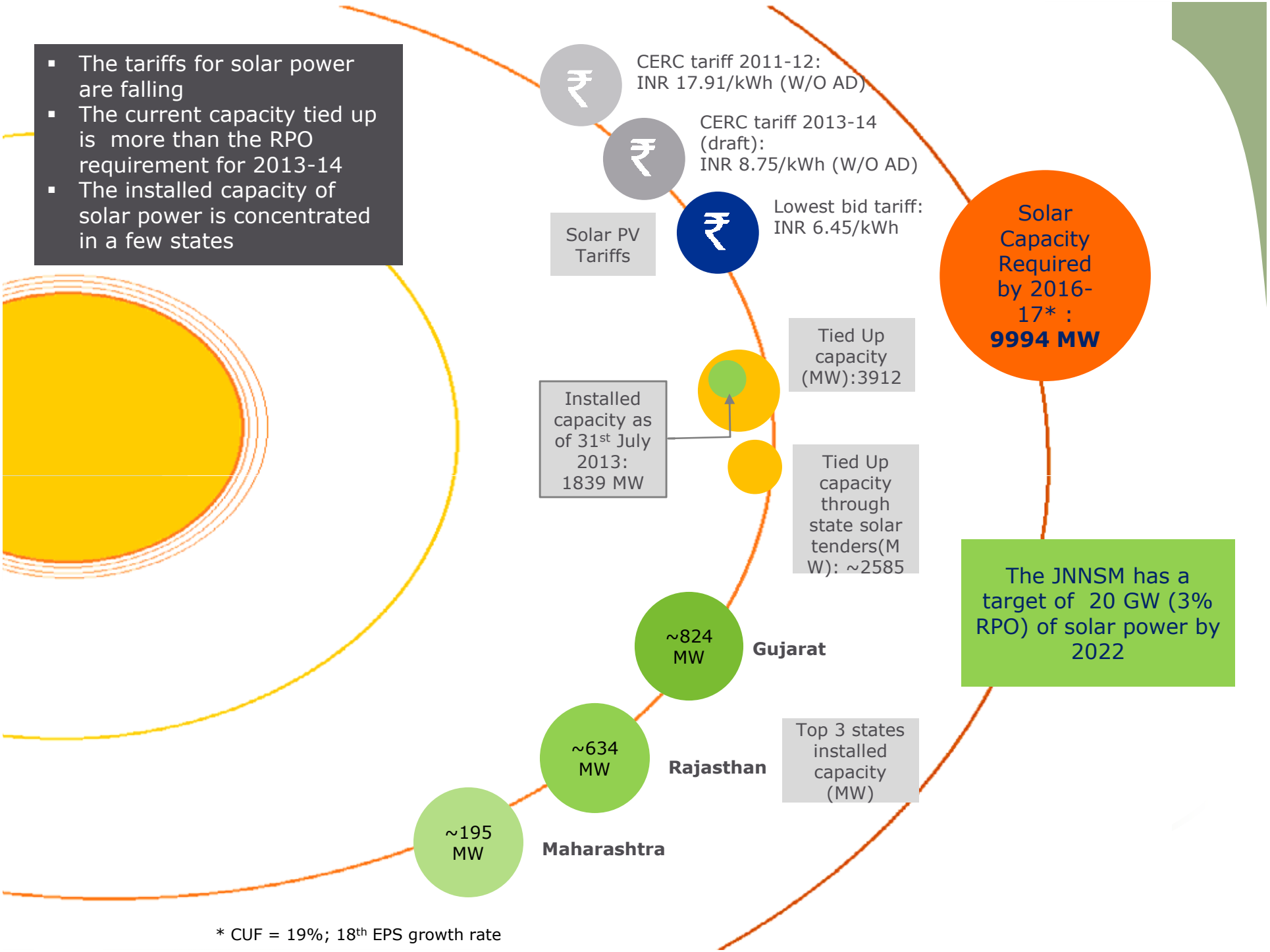



## The case for Solar Power in India**

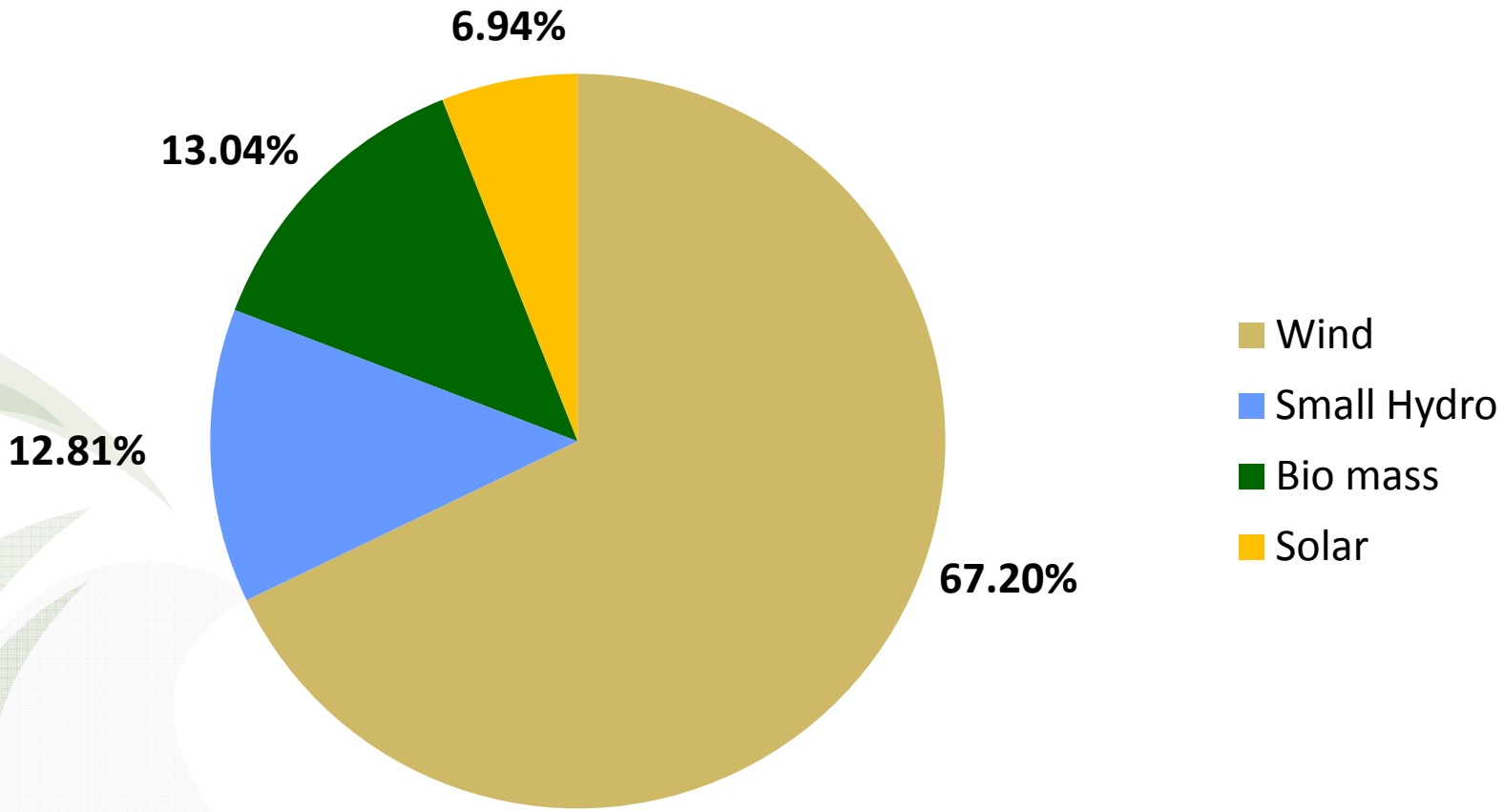
- The country is in an overall deficit.
- North Eastern, Western, and Southern region experience larger regional imbalances.
- The targeted capacity addition of 75,785 MW in the XII Plan Period (2012-2017), of which 62,695 MW is to be contributed by coal alone, appears to be an impossible target to meet.
- In this case Renewable Energy perfectly poised to fill this gap
- Among the various renewable energy resources, **solar energy potential is the highest in the country**
- The **equivalent energy potential is about 6,000 million GWh of energy per year.**

- The tariffs for solar power are falling
- The current capacity tied up is more than the RPO requirement for 2013-14
- The installed capacity of solar power is concentrated in a few states




* CUF = 19%; 18th EPS growth rate

# Renewable Power Capacity




| Wind | Small Hydro | Solar | Biomass | Total |
|---|---|---|---|---|
| 19,051 MW | 3,632 MW | 1968 MW | 3,698 MW | 28,349 MW |

# Jawaharlal Nehru National Solar Mission (JNNSM)

- One of the eight Missions under National Action Plan on Climate Change
- Launched by the Government of India in January 2010.
- JNNSM is one of the major global initiatives in promotion of solar energy technologies.
- Mission aims to achieve grid tariff parity by 2022 through
  - Large-scale utilization, rapid diffusion and deployment at a scale which leads to cost reduction
  - R&D, Pilot Projects and Technology Demonstration
  - Local manufacturing and support infrastructure

# Mission 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 (large plants, roof top & distribution grid plants) | 1,100 MW | 10,000 MW | 20,000 MW |
| Off-grid solar applications | 200 MW | 1,000 MW | 2,000 MW |
| Solar Thermal Collectors (SWHs, solar cooking/cooling, Industrial process heat applications etc.) | 7 million sq. meters | 15 million sq. meters | 20 million sq meters |
| Solar Lighting System | 5 million | 10 million | 20 million |

# Targets & Achievements of Phase-I

| **Application Segment** | **Target for Phase I (2010-13)** | **Achievement for Phase-I** |
|---|---|---|
| Grid solar power (large plants, roof top & distribution grid plants) | 1,100 MW | 1,684.4355 MW (including those under state initiative) |
| Off-grid solar applications allotment | 200 MW | 252.5 MW |
| Solar Thermal Collectors (SWHs, solar cooking, solar cooling, Industrial process heat applications, etc.) | 7 million sq. meters | 7.001 million sq. meters |

# Policy and Regulatory Support

- **Regulatory measures- RPO/REC**
- **Supporting grid connected projects to bring volumes and reduce prices**
- **Financial support for off-grid**
- **Support R&D in India**
- **Encourage manufacturing**
- **HR development**

# JNNSM: Phase-I, Batch-I

| Scheme | | Projects allotted | Projects Commissioned | Weighted Avg. bid tariff |
|---|---|---|---|---|
| | | MW | MW | |
| Large PV projects through NVVN | | 150 | 140<br>2 Projects of 5 MW each Cancelled | **12.16**<br>**Rs. / Unit** |
| Migration Scheme | SPV | 54 | 48 | |
| | ST | 30 | 2.5 | |
| RPSSGP Scheme (PV) | | 98.05 | 88.80 | CERC linked tariff |
| Solar Thermal projects through NVVN | | 470 | 50 MW commissioned | **11.48**<br>**Rs. / Unit** |
| Total | | 772.05 | 316.8 | - |

# JNNSM : Phase-I, Batch-II

| Scheme | Projects allotted | | Projects Commissioned | | Minimum bid tariff | Maximum bid tariff | Weighted Average bid tariff | % Reduction in tariff |
|---|---|---|---|---|---|---|---|---|
| | No. | MW | No. | MW | | | | |
| Large PV projects through NVVN | 28 | 350 | 25 | 310 | 7.49 Rs. / Unit | 9.44 Rs. / Unit | 8.77 Rs. / Unit | 43 % |

# State-wise Installed Capacity

| State/UT | MW | State/UT | MW |
|---|---|---|---|
| **Andhra Pradesh** | 66.90 | Punjab | 9.325 |
| **Arunachal Pradesh** | 0.025 | Kerala | 0.025 |
| **Chhattisgarh** | 7.0 | Rajasthan | 606.65 |
| **Gujarat** | 857.9 | Tamil Nadu | 17.05 |
| **Haryana** | 7.8 | Uttar Pradesh | 17.375 |
| **Jharkhand** | 16.0 | Uttarakhand | 5.05 |
| **Karnataka** | 24.0 | West Bengal | 7.05 |
| **Madhya Pradesh** | 122.315 | Andaman & Nicobar | 5.1 |
| **Maharashtra** | 179.65 | Delhi | 2.5555 |
| **Odisha** | 15.5 | Lakshadweep | 0.75 |
| **Puducherry** | 0.025 | Others | 0.79 |
| **TOTAL** | **Total Capacity till date** | | **1968.8355** |

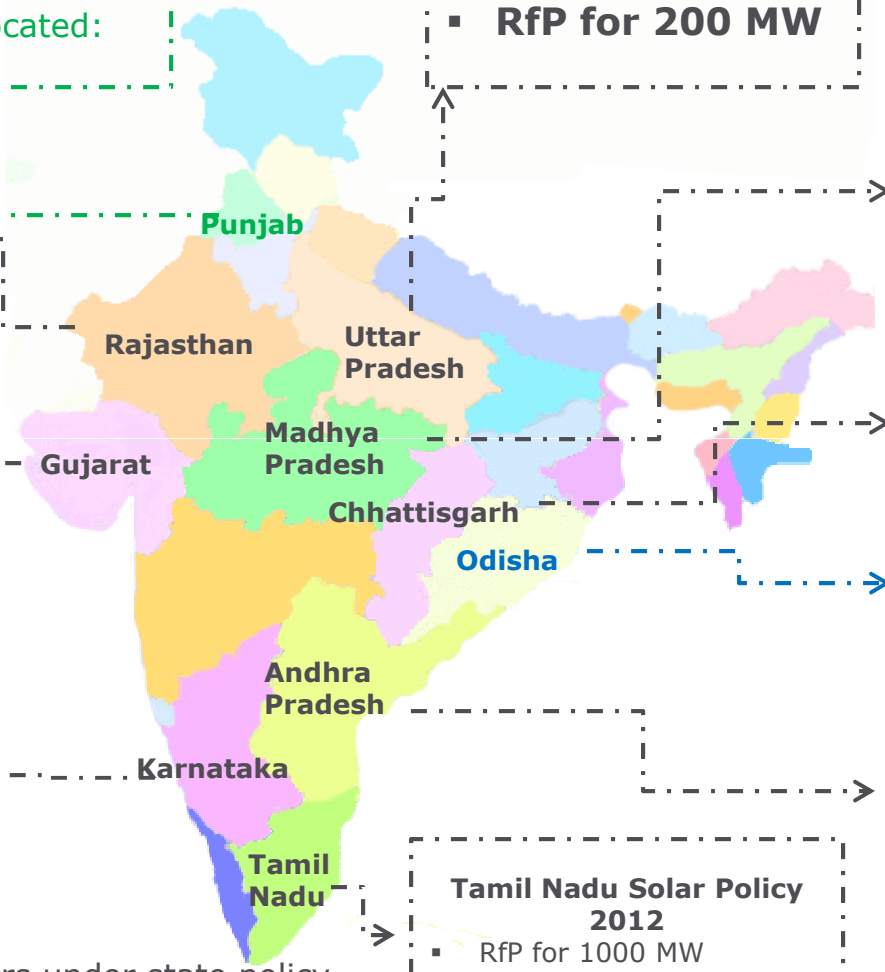
# Initiatives taken by states to promote Solar Power

**Punjab NRSE Policy 2012**
- RfP for 300 MW PV and 100 MW CSP
- Projects allocated: 130 MW

**Uttar Pradesh Solar Policy 2013**
- **RfP for 200 MW**

**Rajasthan Solar Policy 2011**
- RfP for 100 MW PV and 100 MW CSP
- Projects Allocated : 75 MW solar PV projects

**Madhya Pradesh Solar Policy 2012**
- RfP for 200 MW
- Projects allocated: 200 MW




**Gujarat Solar Power Policy 2009**
- Solar Power projects allocated: 968.5 MW
- Solar Power Projects Commissioned: 824.09

**Chhattisgarh Solar Policy 2012**

- 3 Solar RfP for 25 MW each
- Allocated 25 MW

**Karnataka Solar Policy 2011-16**
- RfP for 80 MW: 30 MW CSP and 50 MW PV
  - Projects Allocated: 20 MW CSP and 60 MW PV
- RfP for 130 MW

**Andhra Pradesh Solar Policy 2012**
- RfP for 1000 MW
- Projects allocated: 350 MW

**Tamil Nadu Solar Policy 2012**
- RfP for 1000 MW
- Projects allocated: 690 MW

- State Solar Policy; Solar Tenders under state policy framework
- Solar tender; No state solar policy
- State Renewable Energy Policy; Solar tender under state policy

# Initiatives taken by states to promote Solar Rooftops

**Gujarat Rooftop Solar Replication Programme**

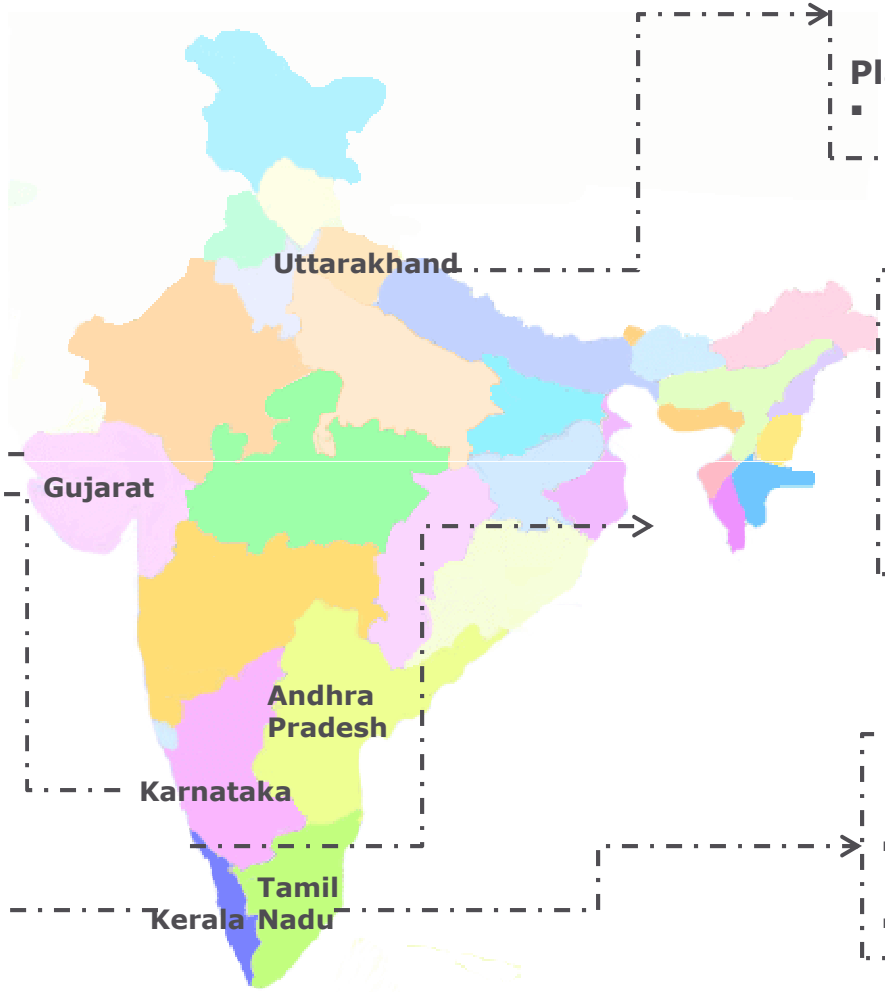
- 2.5 MW to be set up in Gandhinagar

**Tender for Supply, Installation, Commissioning and Maintenance of 1kWp (Maximum) Capacity Grid Connected Solar Power Plants**

- At ~1943 households across 5 selected cities in Karnataka

**10000 Rooftop Solar Power Plants Programme**

- **10000 rooftops already registered**
- **Not grid connected**
- **Each rooftop system can be only 1 kW in size**




**Schemes for Grid Interacted Rooftop and Small SPV Power Plants in Uttarakhand**

- Net metering allowed

**Policy on net metering for solar grid interactive roof-top and small SPV power plants in the State**

- Net metering allowed

**Tamil Nadu Solar Policy 2012**

- Target for 350 MW rooftop solar power
- Net metering allowed

# Upcoming Projects from States

## List of States which have announced Solar Policy and have encouraged setting up of solar projects.

| S. No | State | Solar Specific Programme |
|---|---|---|
| 1 | Gujarat | • Announced – 968.5 MW, Commissioned – 857.9 MW |
| 2 | Andhra Pradesh | • Tendered - 1000 MW , Bid received for 400 MW for tariff Rs. 6.49/-, PPA signing is under process |
| 3 | Tamil Nadu | • Announced – 3000 MW, Tendered 1000 MW out of which LOI for 701 MW issued, Commissioned – 17.105 MW |
| 4 | Odisha | • Allocated 50 MW in two phases of 25 MW each<br>• Awarded – 25 MW, Minimum Tariff – Rs. 7/Unit |
| 5 | Rajasthan | • Tendered – 200 MW (100 MW PV + 100 MW ST), 75 MW PV allotted |
| 6 | Karnataka | • Commissioned – 24 MW, Approved Plan for 200 MW<br>• Project allotted – 70 MW, Min. tariff – Rs. 7.94/Unit 10 MW Commissioned on 05 Jun 13<br>• LOI Issued-130 MW |

| S. No | State | Solar Specific Programme |
|---|---|---|
| 7 | Chhattisgarh | • Aims at capacity of 500 to 1000 MW till March 2017<br>• As per the policy SPDs are registering and till now the response of total capacity of 500 MW received. 7 MW commissioned, 50 MW in pipeline. |
| 8 | Uttar Pradesh | • Aims at capacity of 500 MW till March 2017<br>• 130 MW allotted.<br>• A JVC is proposed between UPNEDA and NHPC Ltd. initially for 50 MW and total target is 100 MW. |
| 9 | Madhya Pradesh | • Awarded 200 MW<br>• Minimum Tariff – Rs. 7.90/Unit<br>• Commissioned – 122.315 MW |
| 10 | Maharashtra | • Commissioned– 125 MW under State initiative and 35 MW under REC scheme. |
| 11 | Bihar | • 50 MW allotted and 100 MW tendered. |
| 12 | Punjab | • Tendered for 300 MW out of which capacity of 250 MW under allotment |

**Some States have not taken action to meet Renewable Purchase obligation (RPO)**

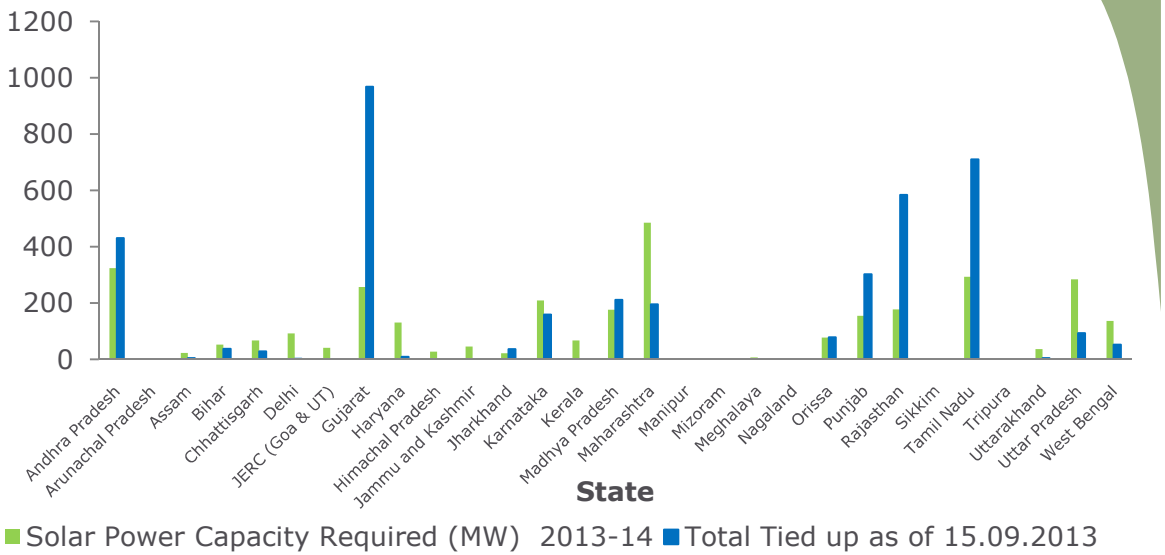
# Assessment of Solar Capacity needed to meet 3% Solar RPO by 2022

## Key Observations

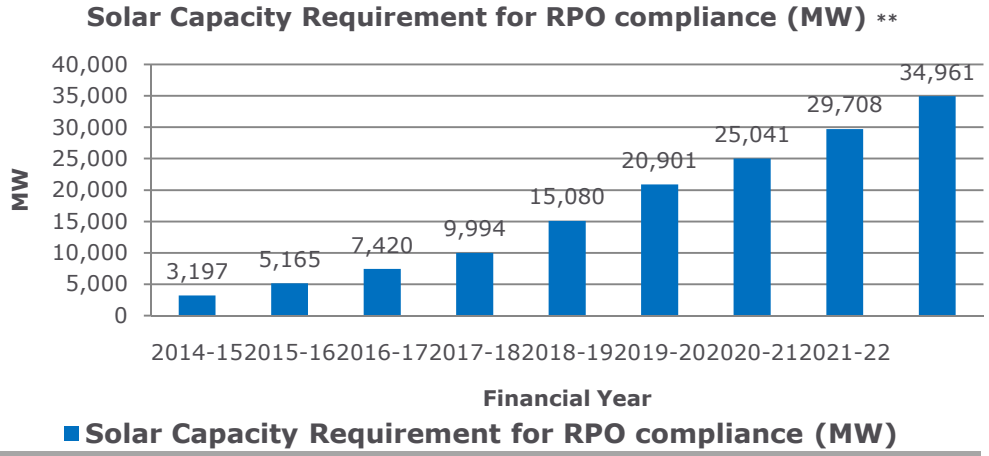
- **In order to achieve 3% solar RPO by 2022, a capacity addition of about 35,000 MW of solar projects are required to be set up in the country**
- **To be able to realize this target, the States are required to come up with yearly Renewable Purchase Obligation and SPO targets, based on the Model Regulations published by the Forum of Regulators (FOR)**
- **The current Tied up capacity is about 3712 MW while the RPO requirement for 2013-14 is about 3179 MW**

State wise RPO requirement by 2013-14 and State tied up capacities (MW)*

* Detailed numbers

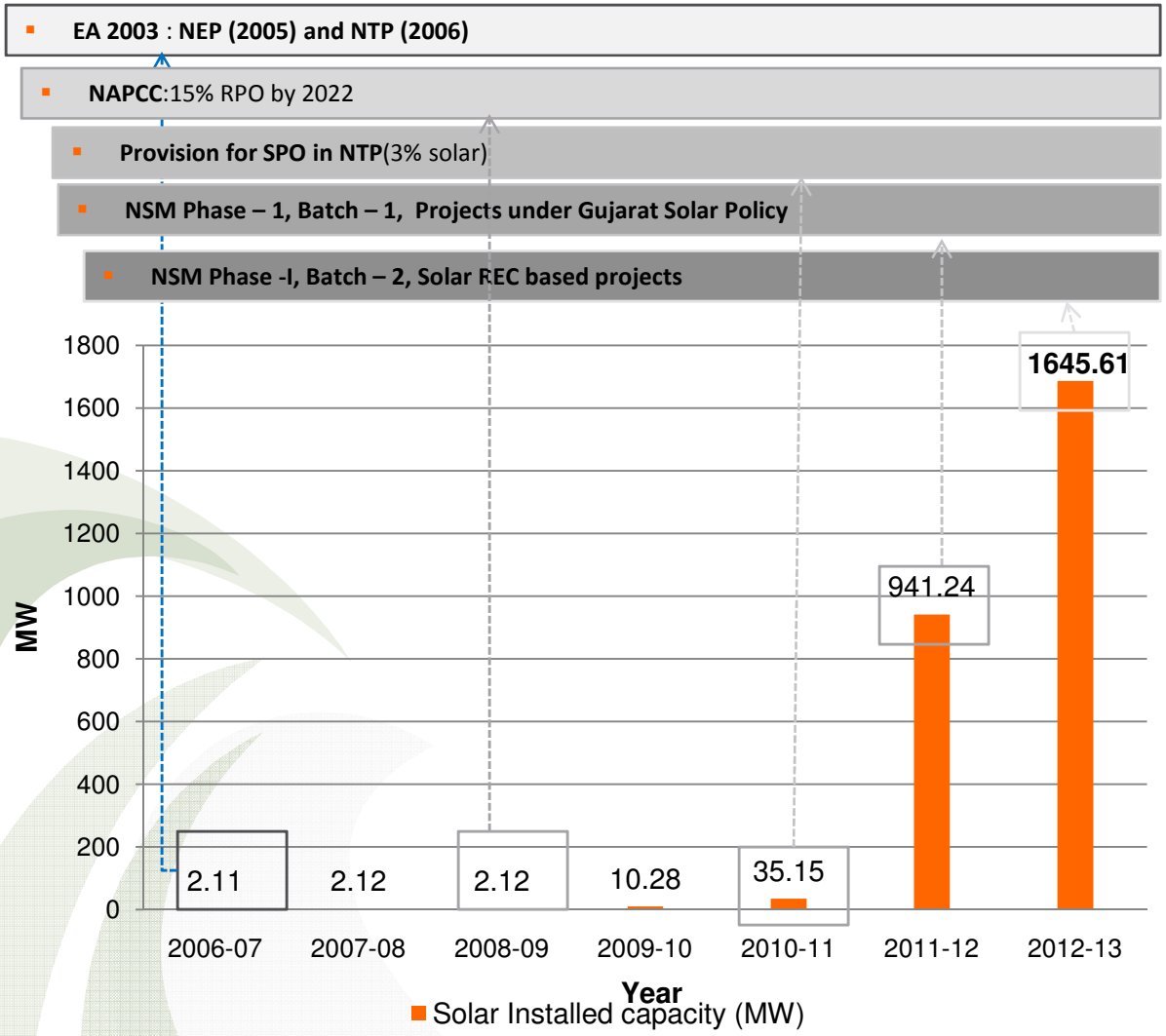



**Year wise solar RPO requirement**




** The Growth Rates as per the 18th EPS have been taken to project energy requirement up to 2021-22. However, our analysis show that growth rates in the 18th EPS have been over estimated, to the extent of **15% for 2021-22.**

# Cumulative Capacity Addition of Solar Power



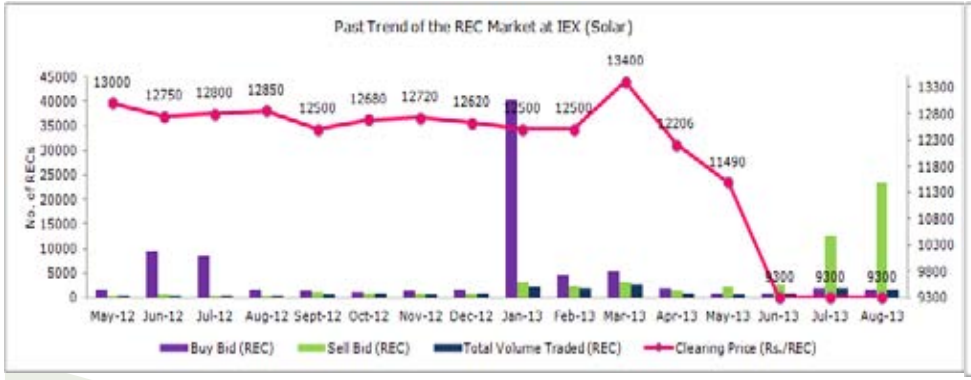

| Sr. No. | States | Installed Capacity * (MW) |
|---|---|---|
| 1 | Andhra Pradesh | 52.5 |
| 2 | Arunachal Pradesh | 0.025 |
| 3 | Chhattisgarh | 6 |
| 4 | Delhi | 2.525 |
| 5 | Goa & UT | 1.685 |
| 6 | Gujarat | 824.09 |
| 7 | Haryana | 7.8 |
| 8 | Jharkhand | 16 |
| 9 | Karnataka | 14 |
| 10 | Kerala | 0.025 |
| 11 | Madhya Pradesh | 41.475 |
| 12 | Maharashtra | 180.15 |
| 13 | Odisha | 15.5 |
| 14 | Punjab | 9.325 |
| 15 | Rajasthan | 609.15 |
| 16 | Tamil Nadu | 18.055 |
| 17 | Uttarakhand | 5.05 |
| 18 | Uttar Pradesh | 17.375 |
| 19 | West Bengal | 7 |
| Total | | 1827.73 |

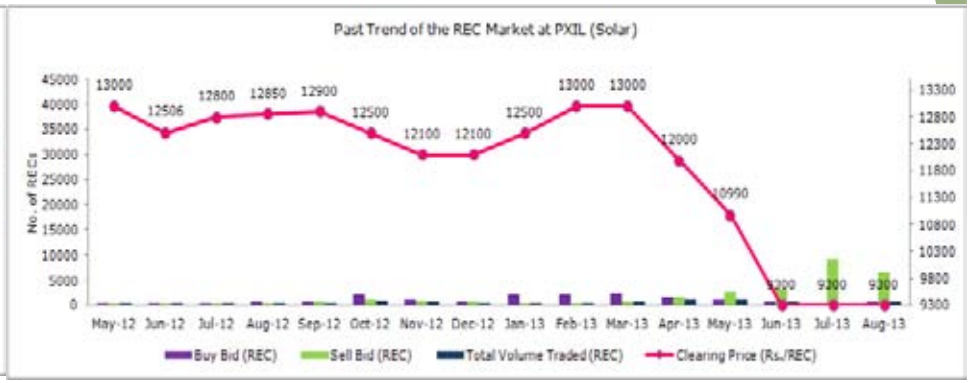
*Note : The data is compiled on the basis of information obtained from IREDA, NVVN, State Agencies and Project Developers*

* As on 31st May 2013

**Several states such as Gujarat, Rajasthan, Tamil Nadu, Chhattisgarh, Andhra Pradesh, Orissa, Uttar Pradesh, Madhya Pradesh, Kerala, Punjab have come up with solar policies to promote solar power in respective states**

# REC framework has the ability to facilitate compliance by resource deficit states but faces implementation challenges…..




| REC INVENTORY | | | | |
|---|---|---|---|---|
| Month | Opening Balance | REC Issued | REC Redeemed | Closing Balance |
| 13-Jan | 253 | 3306 | 2308 | 1251 |
| 13-Feb | 1251 | 1882 | 2234 | 899 |
| 13-Mar | 899 | 2917 | 3183 | 633 |
| 13-Apr | 633 | 2444 | 2217 | 860 |
| 13-May | 860 | 3973 | 1703 | 3130 |
| 13-Jun | 3130 | 2802 | 1479 | 4453 |
| 13-Jul | 4453 | 17227 | 2029 | 19651 |
| 13-Aug | 19651 | 12890 | 2359 | 30182 |
| 13-Sep | 30182 | 5465 | - | 35647 |

**Prices have come down to floor price - possible reasons :**

- ✓ **Non-compliance of RPO/Lack of interest in REC**
- ✓ **Further, unsold REC stocks have brought prices under pressure**

# Ground Measurement of Solar Radiation

| | |
|---|---|
| Andhra Pradesh | 6 |
| Gujarat | 11 |
| Haryana | 1 |
| Madhya Pradesh | 3 |
| Karnataka | 5 |
| Rajasthan | 12 |
| Chhattisgarh | 1 |
| Ladakh | 1 |
| Maharashtra | 3 |
| Pudducherry | 1 |
| Tamil Nadu | 6 |

- C-WET is implementing the project for setting up 51 ground monitoring stations
- Centralized data collection, analysis and calibration of measuring sensors

# Grid-connected :Target & Thrust Areas

**Cumulative target:**

- **10,000 MW *(by March 2017)***

  ***-4,000 MW under Central schemes***

  ***-6,000 MW under States initiatives***

**Thrust areas:**

- ***Development of T&D network***
- ***Developing cluster of Solar Parks to reduce costs***
- ***Grid-connected Roof-top***
- ***Achieving grid parity at the earliest***

# Grid-connected : Plan for Central Schemes

- **Bundling - 500 MW**
- **VGF - 1500 MW**

- **Thermal - 500 MW**
- **Ladakh & Other special projects - 500 MW**

**3000 MW**

# Off-Grid: Targets/Thrust Areas

Target : **800 MW**

Thrust areas:

**ENERGY ACCESS**

**DIESEL REPLACEMENT**

**TELECOM TOWERS**

**NEW INNOVATIVE PRODUCTS**

**COOLING**

**COLD STORAGE**

**WATER PURIFICATION**

**SPACE HEATING**

**WATER PUMPING**

# Off-Grid: Strategy

- Modification of existing scheme for simpler administration
  - New Schemes - Energy Access, Roof-top
  - Solar Cities

# Learning from JNNSM Phase-I

- **Reduction in tariff is possible if capacity to be allotted is high.**
- **Experienced companies are interested in large size projects.**
- **Transmission and Evacuation System is still a major issue.**
- **Assurance of continuous and timely payment is very important from lenders' point of view.**
- **Resource Assessment was another major Issue but now with experience, developers are more confident about it across various parts of the country.**
- **Equipments import is still very high despite domestic content requirements i.e. Domestic manufacturing needs more support.**
- **Financial health of State Discoms is hampering the growth and Increasing risks for Investors.**
- **RPO enforcement and monitoring from SERCs and Nodal agencies are not very efficient, which is a major hurdle.**

# Thrust areas for Phase-II

- Scaling Up of Grid Connected Projects
- Grid Connected & Off-Grid Rooftop Projects
- Off-Grid projects
- Hybrid Systems
- Solar Air-conditioning and cooling
- Expanding existing Manufacturing Capacity
- Focused Research & Development
- Solar Resource Monitoring & Assessment
- Financing
- Human Resource Development
- Development of Solar Parks

# Salient Features of Draft Policy (Ph-II)

- **10 GW utility scale solar power capacity (cumulative) by end of Phase-II (March 2017): 4 GW under central scheme and 6 GW under various State specific schemes.**
- **Continuation of scheme to support off-grid solar applications to reach 1000 MW aggregate capacity by 2017.**
- **Target of 15 million sq. m. solar collectors area (cumulative) by 2017.**
- **Other key areas are manufacturing, R&D, Developing Human Resource, supporting Infrastructure etc.**

# Grid Connected Capacity Addition

- *4,000 MW under Central schemes*
- *6,000 MW under States initiatives*

**Break-up of the capacity addition under Central schemes:**

| | |
|---|---|
| • Bundling | - 500 MW |
| • VGF | - 1500 MW |
| • Thermal | - 500 MW |
| • Ladakh & other special project | - 500 MW |
| Total | 3000 MW |

# Plans for Off-Grid Projects

**JNNSM Phase-II envisages development of cumulative capacity of 1000 MW for Off-Grid Solar power and target of 15 Million Sq.M collector area**

- **Improved Energy Access in remote areas**
- **Heating/Cooling applications that would encourage income generation opportunities (such as Cooling, Cold Storage, water purification, Space Heating)**
- **Replacement of Diesel and Kerosene : Telecom towers (25000 systems)**
- **Distributed Generation : (e.g. rooftop PV applications – 1000 MW)**
- **Use in industry : (Space Heating, water pumping)**
- **Solar Cities**
- **Solar Cookers & Steam Generating Systems**

# Separate Targets for other applications

- **Rooftop PV Programme(grid connected) – 1000 MW**
- **Energy Access – 20,000 (Villages/hamlets/basti/padas)**
- **Off-Grid Lighting Systems – 10 lakhs**
- **Solar Cities – 15 (In addition to existing target of 60 cities)**
- **Solar Water pumps – 25,000 Systems**
- **Telecom Towers – 25,000 Systems**
- **Solar Water Heating Systems – 8 Million Sq.m of Collector area**
- **Manufacturing – 4/5 GW Capacity**
- **Solar Monitoring & Assessment – 60 Monitoring Stations**
- **Human Resource Development – 1 Lakh trained & Specialized personnel**
- **Solar Parks (250 MW capacity and Land area of 600 hectare) – 5 Nos.**

# Separate Targets for other applications

- **Pilot Projects based on hybrid systems- 20 Nos.**
- **To develop special scheme for promotion of solar telecom towers and target 25000 telecom towers**
- **Target at least 20 cities where solar water heaters will be main source and will replace geysers**
- **To cover 20,000 villages/hamlets through energy excess scheme for solar electricity supply**
- **Solar Cooker & Steam Generating Systems – 50,000 Systems**
- **Industrial Process heat application – 400 , 250 Sq.m each on an average**

# VIABILITY GAP FUNDING (VGF) SCHEME

**Total capacity considered under Batch-I** :

750 MW in 2 categories:

- With Domestic Content Requirement
- Open; no restriction.

**Implementing Agency**:

Solar Energy Corporation of India (SECI)

# VGF Mechanism

- **Tariff** to be paid to the developer :
  - Rs.5.45/kWh, fixed for 25 years
  - 10% less viz., Rs. 4.95/kWh for projects availing benefit of Accelerated Depreciation

- **VGF** to be paid:
  - up to Rs. 2.5 cr./MW, based on bid

- **Developer's equity**
  - minimum Rs.1.5 cr./MW

- Balance can be raised as Loan.

# Release of VGF amount

- **VGF to be released in six tranches-**
  - **50% on successful commissioning of the project**
  - **10% after every year upto five years**
- **If during PPA duration of 25 years:**
  - ***the project fails to function at any time, or***
  - ***its assets are sold, or***
  - ***the project is dismantled,***

***SECI*** **will have right to claim assets equal to discounted VGF paid. Legal documentation to be prepared by SECI.**

# Min. & Max. Capacity

- **Min. Capacity of each project – 10 MW**
- **Max. capacity – 50 MW**
- **Max. 3 projects at different locations by one developer, subject to a max. of 100 MW.**

***Capacity will be the AC output at the project bus bar located within project premises.***

# Grid connectivity

- **Inter-connection with Transmission network of STU/CTU/any other Utility at level of 33 KV or above.**
- **Developer to submit along with Bid a letter from STU / CTU/ Transmission Utility confirming technical feasibility of connectivity of plant to substation.**
- **Transmission of power up to interconnection point where metering is done for energy accounting, to be responsibility of Developer at own cost.**

# Grid connectivity (contd.)

- **Option of Pooling Point where more than one SPV projects may connect**
- **Common Transmission Line (CTL) to further connect Pooling Point to the Interconnection/Metering point.**
  - ***CTL to be built and operated by the developer/any third party/by STU on behalf of developer.***
- **Metering to be done at the Interconnection Point along with subsidiary meters at the Pooling Point to determine the generation by each project.**

# Development of SOLAR PARKS

- Solar Park is concentrated zone of solar with minimun 250 MW generation capacity, 600 hact. Land, avg. global horizontal irradiance of 5 kWh/sq. m.
- Will have manufacturing, generating, testing & characterization, R&D, demonstration, solar radiation monitoring facilities
- Will have adequate infrastructure i.e., evacuation and transmission infrastrure, water avalibility, roads, telecommunication fire station, green belt etc.
- 5 solar parks to be set up in States in phase II

# Manufacturing Development

- Aim is to establish country as solar manufacturing hub to feed domestic as well as global market.
- To develop 4-5 GW manufacturing capacity of high efficiency and good quality Solar PV in the country
- Enhancing manufacturing capacities for advanced solar collectors for low temp. and concentrating solar collectors and their components for medium and high temp. applications.
- Manufacturing solar grade mirrors and glasses
- Develop components and materials like:
  - Heat Transfer Fluids
  - Thermal storage system
  - Solar Concentrated glasses
  - Invertors
  - Permanent magnet and other motor for solar pumps

# Focused Research and Development

- Solar Energy Research Advisory Council Constituted

Key areas of R&D are

- **Development of materials for solar thermal applications**
- **Development of hybrid and storage technology**
- **Development of Centers of Excellence for solar technologies**
- **Identification of new areas of solar applications**
- **Development of high temperature PV/concentrated PV**
- **Heat cycles for solar thermal with air as heat sink**
- **R&D in receivers for parabolic technology, advanced power convertor modules, self cleaning reflector surfaces, organic solar cells,**
- **Develop R&D infrastructure, with involvement of Institutions, industry,**

# Financial Implication of JNNSM, Phase-II

| Scheme/Programme | Scheme wise 12th plan Proposal | Scheme wise financial outlay for 12th Plan |
|---|---|---|
| **Grid interactive**<br>• Grid connected solar Programmes (SPV & ST) | 7,142 | 2,000 |
| **Off-Grid Programme**<br>• Solar applications<br>• Grid interactive rooftop and small solar system<br>• RVE Programme/Energy Access | 7,000 | 5,000 |
| **Solar cookers** | 990 | 130 |
| **Renewable energy for Urban, Industrial and Commercial**<br>• Solar thermal systems<br>• Green Buildings<br>• Solar Cities/Pilot/related activities | 1,219 | 710 |
| **Research, design & development in solar energy** | 625 | 330 |
| **Solar Energy Centre** | 100 | 125 |
| **Solar Energy Corporation Of India** | 2,000 | 500 |

# Institutional Arrangements

- **Solar Energy Corporation of India (SECI) has been set up as a Section 25 of Company with its office at NBCC Plaza, Saket, New Delhi.**

  - **Dr. Anil Kakodkar is functioning as Chairman, Solar Energy Corporation of India, for a period of two years w.e.f 24-11-2011.**

  - **All four whole time Directors, Director (Solar), Director (Power Systems), Director (Finance) and Director (HR) have joined**

  - **MD/CEO of SECI has been appointed and is likely to join by October, 2013.**

  - **The Corporation has started its normal functioning as per mandate.**

- National Institute of Solar Energy (NISE):
  - **Setting up of an autonomous institution named "National Institute of Solar Energy" (NISE) under the Societies Registration Act, 1860 and under the administrative control of Ministry of New & Renewable Energy (MNRE) as Centre of Excellence.**
  - Envisaged Role:

    **Effective R&D program with an objective to improve efficiencies in the existing materials, devices and systems. The R&D program will also address the issues of hybrid – co-generation, convenient and cost effective storage and address the constraints of variability and space intensity.**
  - **Cabinet has approved the proposal for constitution of NISE.**
- **Solar Energy Research Advisory Council, Chaired by Dr. Anil Kakodkar was set up to advise on research policy with a view to achieve Mission targets. The term of the Research Advisory Council which was till 31-03-2013 has been extended till further orders without altering the composition of the council.**
- **Solar Energy Industry Advisory Council, Chaired by Shri Anand Mahindra was set up. The term of the Industry Advisory Council has expired on 31-03-2013. Constitution of New Council is under process.**

# 1 MW PV Plant at Osamabad

# 1 MW SPV Plant at Hissar in Haryana

# 1 MW SPV (Crystalline Silicon) Power Plant at New Delhi (Solar RPO arrangement)

# 5 MWp SPV Plant at Khimsar, Rajasthan

# SPV Power Plant at Goshen Drass  Kargil (40 kWp)

# Sun Edison -5 MW Plant at Bikaner, Kolayat, Rajasthan

# Greentech Power -5 MW Plant at Jodhpur, Phalodi, Rajasthan

# Amrit Energy -5 MW Plant at Jaiselmer, Pokaran, Rajasthan

# Thank You !