



**CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC)**

**NEW DELHI**

# **Renewable Energy Certificate Mechanism in India**



# Structure of the presentation

- Overview of the Legal Framework
- New Policy Initiatives
- Renewable Energy Certificate Mechanism



# Overview of the Legal Framework



# Electricity Act, 2003 : Enabling Provisions

- Tariff regulations of the Regulatory Commissions to be guided by promotion of generation of electricity from renewable energy sources
- State Electricity Regulatory Commissions (SERCs) required to specify Renewable Purchase Obligations (RPOs)



# Renewable Purchase Obligations

- SERCs in all major States have specified RPO
- RPOs vary from 1% to 10% in different States
- Presently the share of renewable energy is about 4% in total electricity generation
- Share of solar energy presently is negligible.

# Present Regulatory Framework



- CERC has issued comprehensive tariff guidelines for renewable energy.
- Tariff design to ensure assured return with full cost recovery during the debt repayment period.



# New Policy Initiatives



# National Action Plan on Climate Change (NAPCC)

- Published by the Government in year 2008
- 8 key areas chosen for National Missions
- National Solar Mission is one of these 8 Missions.
- Suggests RPO at 5% in year 2010, increasing 1% every year for 10 years.





# Renewable Energy Certificate Mechanism



# The Context

- Present installed capacity based on renewables is about 15 GW
- This requires to be increased to 65 GW in next five years if RPO level is to go up to 10% nationally, as suggested in NAPCC.
- But a large part of untapped potential is located in the States which have already achieved high levels of RPO.
- REC mechanism is expected to overcome geographical constraints and provide flexibility to achieve RPO compliance

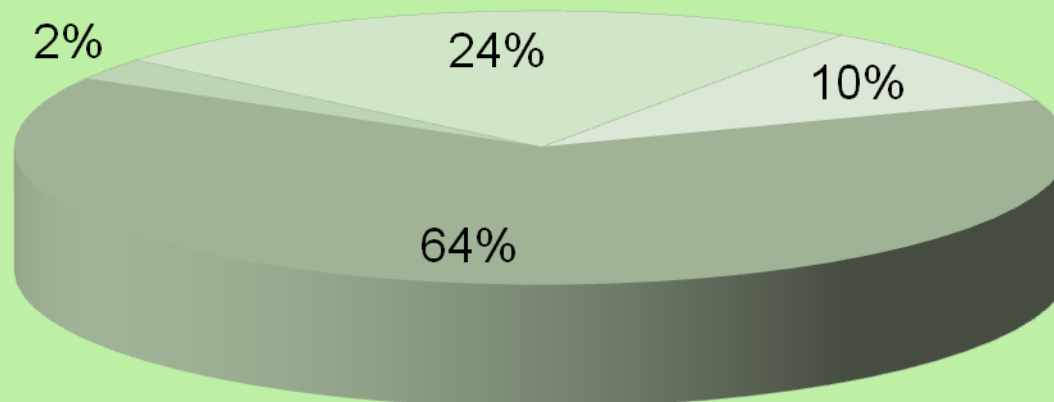


# Installed Generation Capacity in India (end Nov.'09)

**TOTAL GENERATION  
CAPACITY**

**155859.23  
MW**

- Total Thermal
- Nuclear
- Hydro (Renewable)
- RES\*\* (MNRE)



Source: CEA

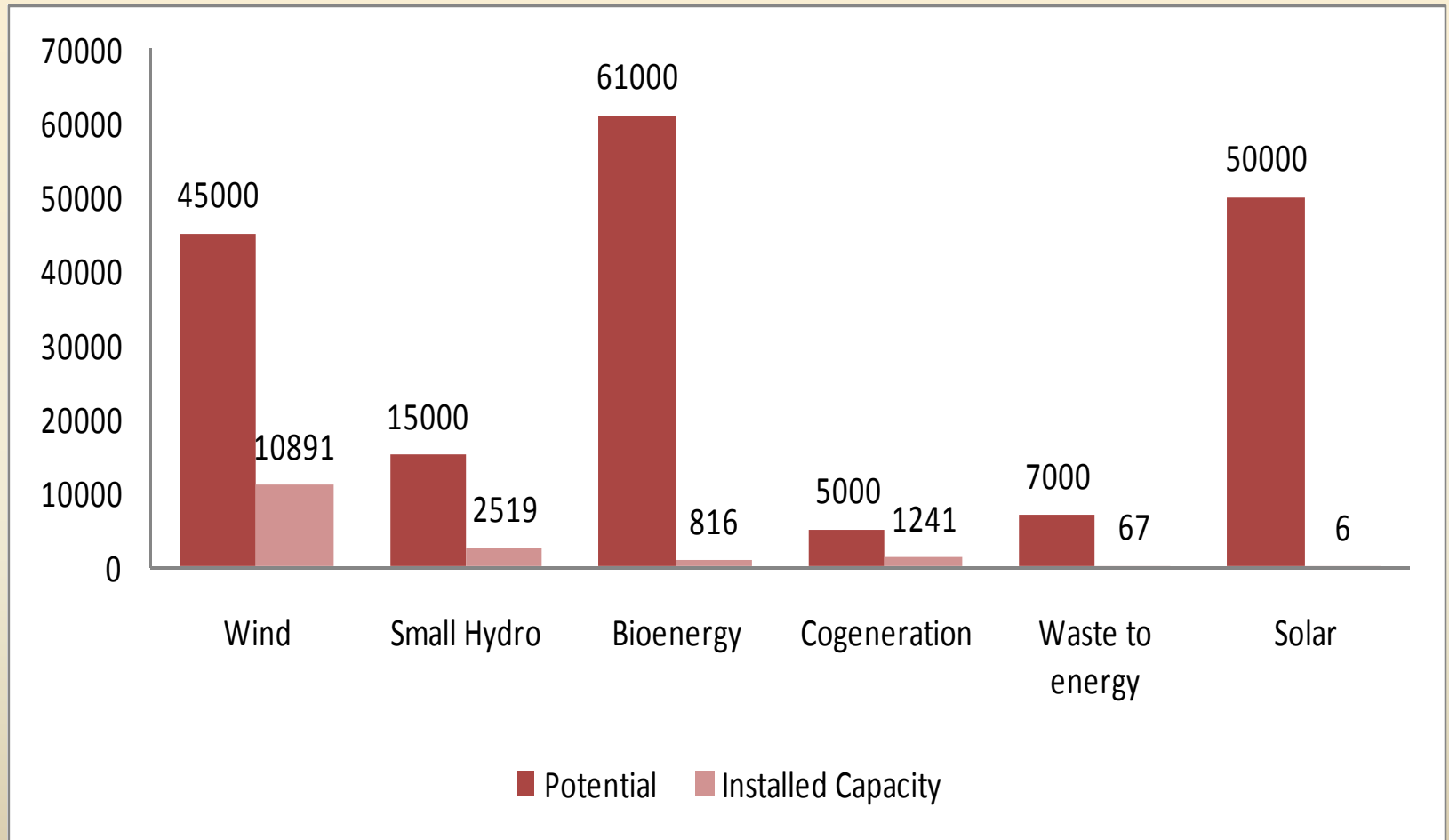
**Fuel Mix**

**(As on 31-11-09)**



# RE Potential and Installed Capacity in India (MW)

(October 2009)



Source : MNRE as on Oct'09



## RPO Status :- FY 2007-08

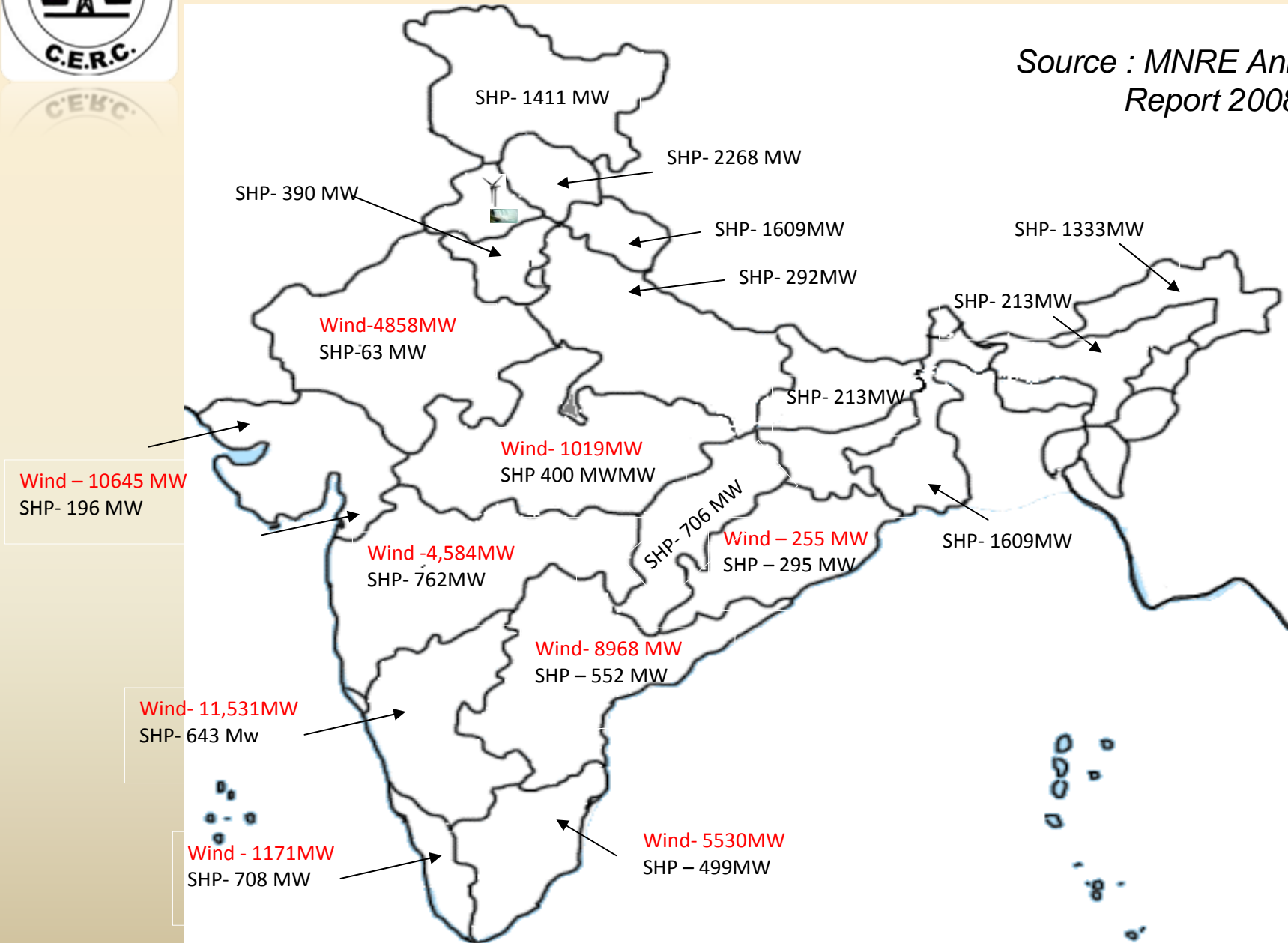
State	RPO Target	RPO Met
Maharashtra	4%	3%
Gujarat	2%	2%
Karnataka	10%	11.5%
Tamil Nadu	10%	11%
Punjab	1%	0.74%
Haryana	4%	0%
Madhya Pradesh	10%	0.07%

Source : SERCs Orders



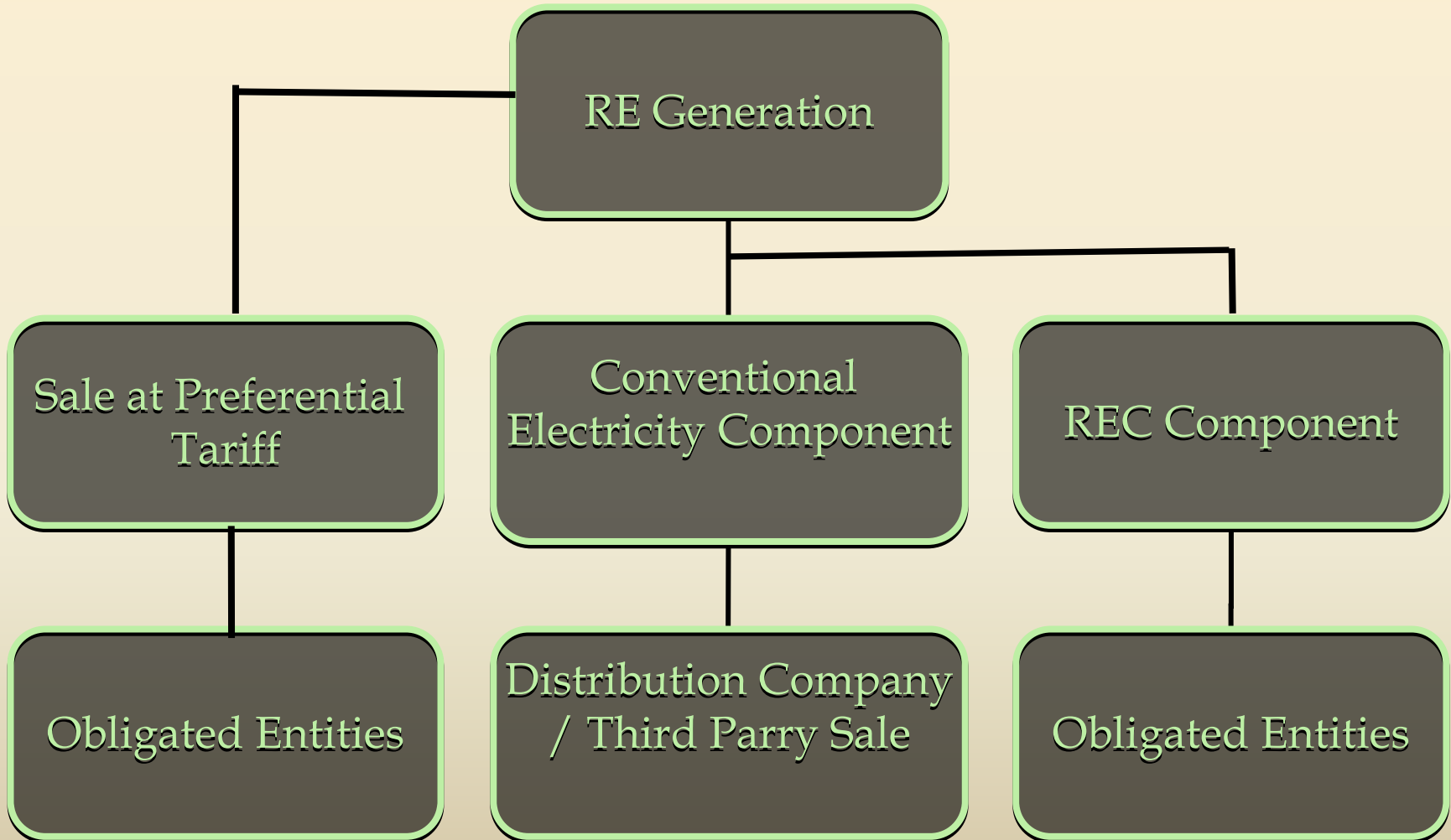
# Wind and SHP Potential

Source : MNRE Annual Report 2008-09





# Conceptual Framework





# Salient features

- RE generators with capacity untied in PPA will have an option to sell electricity and REC separately
- REC will be issued to RE Generators only
- 1 MWhr → 1 REC
- Purchase of REC would be considered as purchase of RE for purpose of RPO compliance.





## Salient features contd...

- All Grid Connected RE technologies would be eligible for REC mechanism
- Separate category of Solar REC
- Provision of regulatory charge to enforce compliance of RPO.
- RECs are intra-country tradable certificates and are distinct from carbon credits.
- It is proposed to make RECs eligible for compliance with energy saving obligations.



# Operational Framework

- Accreditation would be done at State level by State Agency (SA) to be designated by SERC.
- Registration by Central Agency
- Issuance of REC by Central Agency based on injection certificate.



# Operational Framework contd..

- REC exchange through power exchanges approved by CERC.
- Certificates will be exchanged within floor (minimum) price and forbearance (ceiling) price decided by CERC time to time.
- Monitoring Mechanisms : Appointment of Compliance Auditors by CERC for post monitoring of the REC Transactions.



# Steps Taken So Far

- The framework of REC settled by Forum of Regulators (FOR)
- Model SERC Regulations finalized
- CERC Regulations notified



# Major Implementation Aspects

- Capacity building and skillsets for Central Agency & State Agencies.
- Adoption of REC mechanism in SERC regulations
- Setting of RPOs in line with NAPCC
- Framework for absorption of infirm power within the home state



# Major Implementation Aspects contd....

- Notification of forbearance price and floor price
  - CERC has completed consultation with stakeholders and final order is expected shortly.
- Preparedness of Power Exchanges



**THANK YOU**

**Website : [www.cercind.gov.in](http://www.cercind.gov.in)**



# Financial Support from Federal Government to the States

- The Constitutional Commission dealing with devolution of funds has recommended a support of US 1 billion dollars over the next five years for rewarding the States which facilitate addition of renewable based generation and support access to markets for renewables.





# National Solar Mission : Objectives and Targets

## ➤ Objectives

- To establish India as global leader in solar energy and achieve a scale to drive down costs to levels required to achieve grid parity as soon as possible.

## ➤ Mission Targets

- To create enabling policy framework for deployment of 20,000 MW of solar power by 2022.
- To ramp up capacity of grid connected solar power to 1000 MW by 2013 and additional capacity of 3000 MW by 2017.



# National Solar Mission : Objectives and Targets

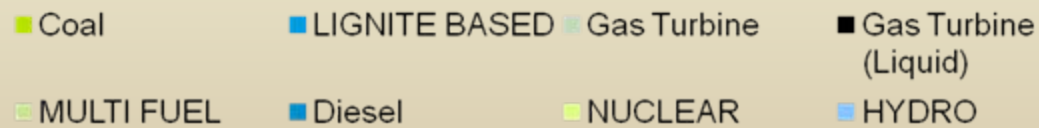
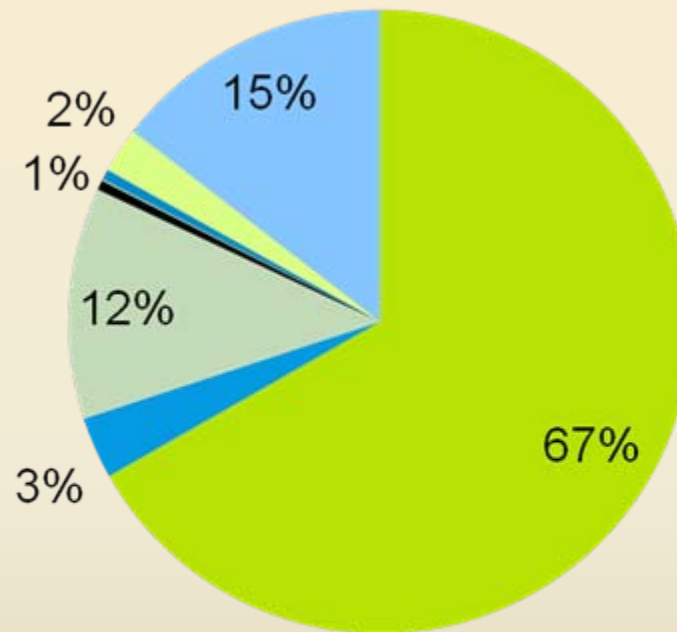
- Mission Targets contd.....
  - To create favourable conditions for developing solar manufacturing capability in the country.
  - To promote programme of off-grid applications, reaching 1000 MW by 2017 and 2000 MW by 2022.
  - To promote deployment of 20 Million solar lights by 2022.
  - To achieve solar thermal collector area of 15 Mn sqm by 2017 & 20 Mn sqm by 2022.



# Tariff Policy notified under the Electricity Act

- SERCs should specify RPOs immediately
- Procurement of energy from renewables to be at preferential tariffs
- Central Electricity Regulatory Commission to publish guidelines for pricing non-firm power from renewable sources
- Procurement through competitive route to be adopted to the extent possible.

# Generation Mix in Year 2009-10 (upto Jan'10)



Source: CEA



# Major Implementation Aspects contd....

Detailed procedure of Central Agency to include

- Requirements for registration of eligible generator
- Issue of REC
- Interface with power exchanges
- Depository functions
- Monitoring through reports of compliance auditors.
- Revocation of registration
- Draft detailed procedure being prepared.