



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)
- The National Electricity Policy to aim for optimal utilisation of resources including renewable sources
- Regulatory Commissions required to promote the development of power markets.



Renewable Purchase Obligations

- SERCs in all major States have specified RPOs
- 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.
- As a special dispensation, this full cost tariff has been allowed for 25 years for solar energy.



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.



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.



Renewable Energy Certificate Mechanism

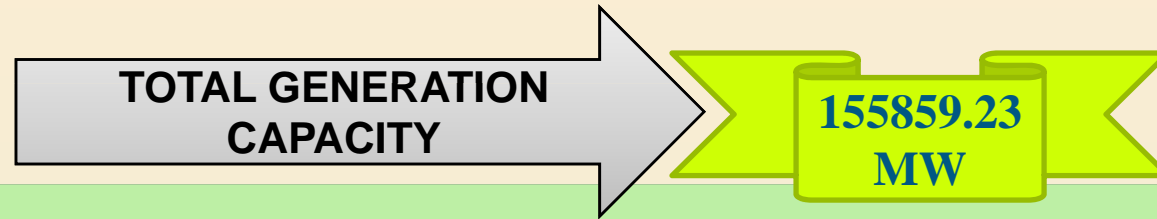


The Context

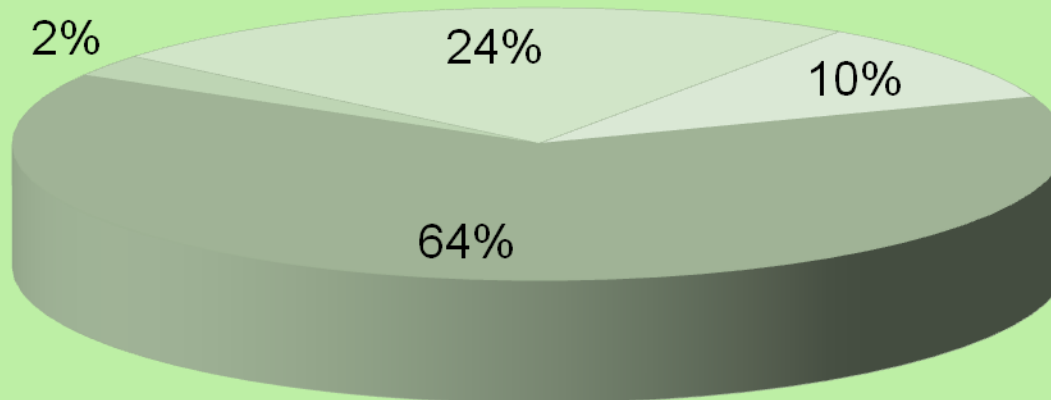
- Present installed capacity based on renewables is about 15 GW
- This requires to be increased to 65 GW in next five years if RPO level is to go up to 10% nationally, as suggested in NAPCC.
- But a large part of untapped potential is located in the States which have already achieved high levels of RPO.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



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



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



Source: CEA

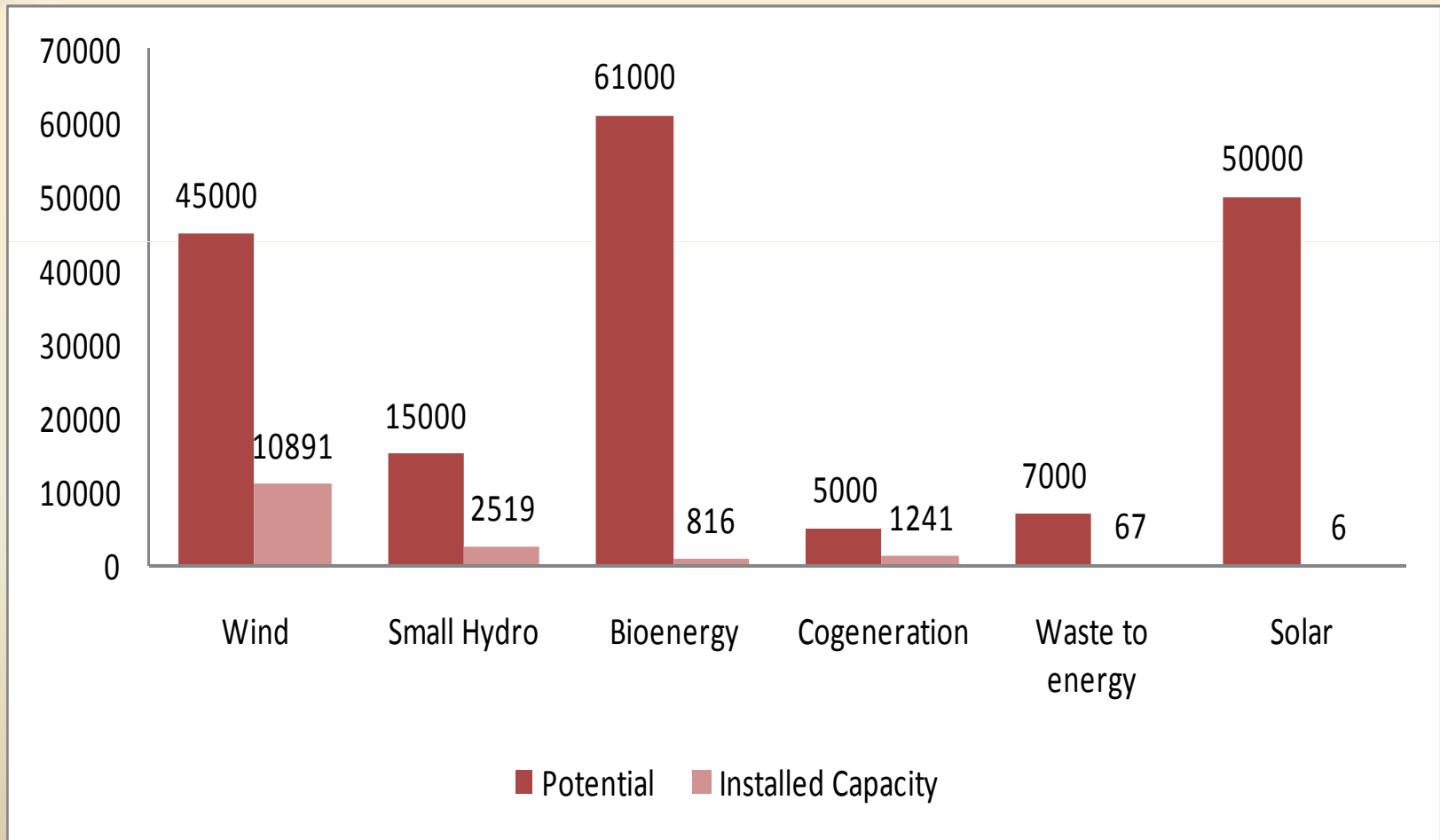
Fuel Mix

(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

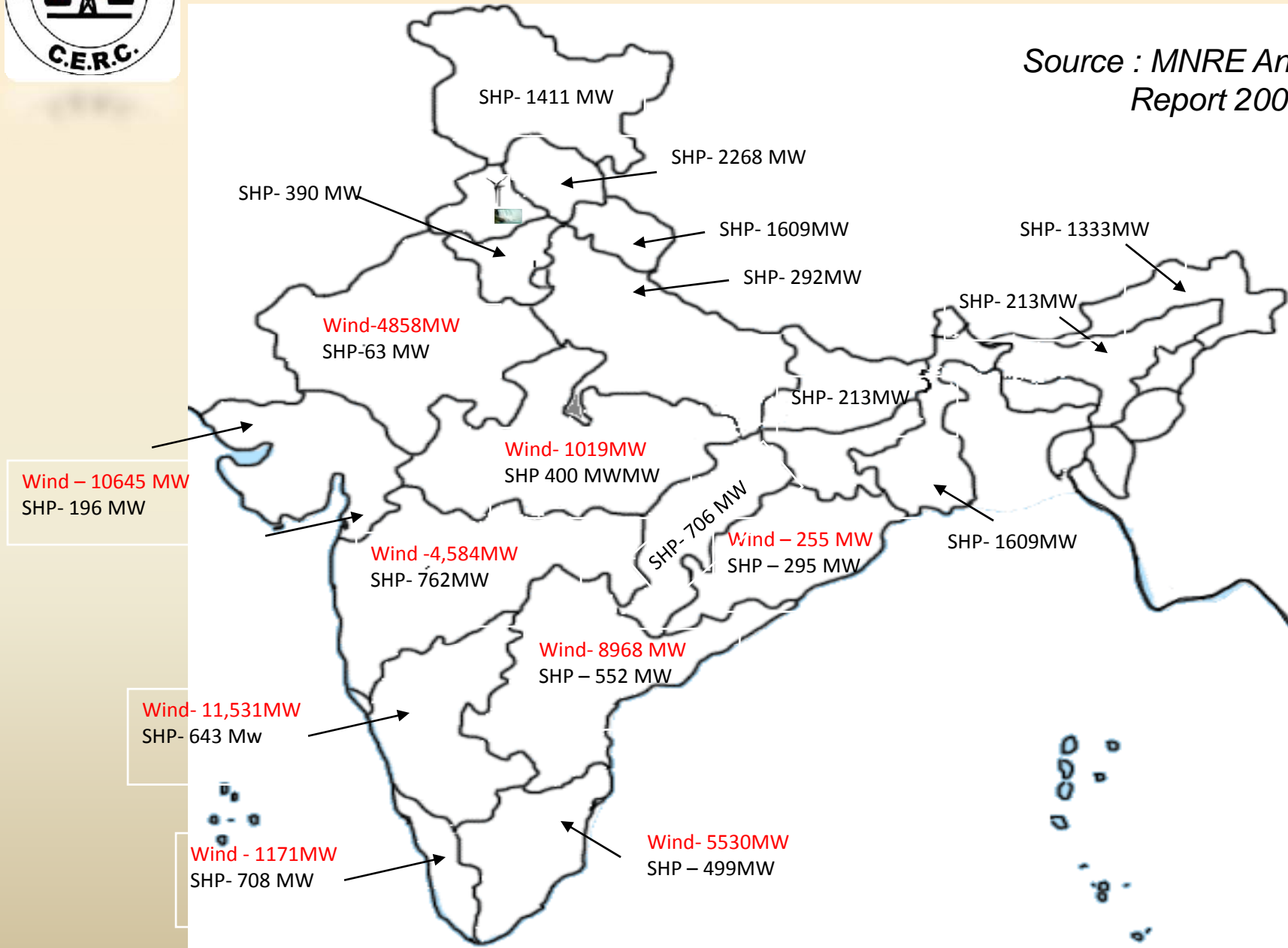
State	RPO Target	RPO Met
Maharashtra	4%	3%
Gujarat	2%	2%
Karnataka	10%	11.5%
Tamil Nadu	10%	11%
Punjab	1%	0.74%
Haryana	4%	0%
Madhya Pradesh	10%	0.07%

Source : SERCs Orders



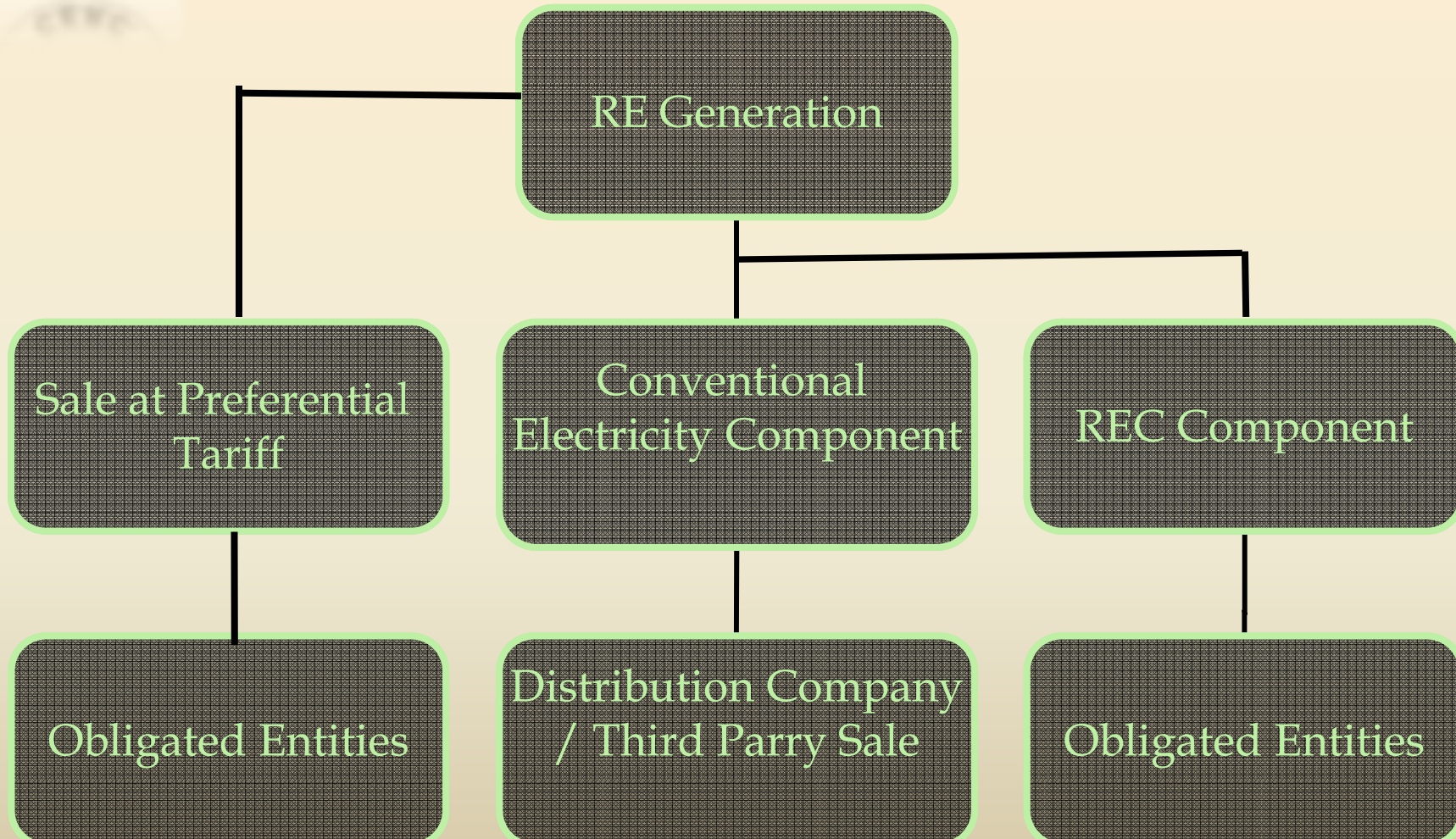
Wind and SHP Potential

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...

- Grid Connected RE technology approved by MNRE 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

- Designation of Central Agency
 - National Load Despatch Centre has been notified as Central Agency.
- Capacity building and skillsets for Central Agency & State Agencies.



Major Implementation Aspects contd....

- Adoption of REC mechanism in SERC regulations
- Setting of RPOs in line with NAPCC
 - We are doing a comprehensive study for impact analysis of different scenarios.
- Framework for absorption of infirm power within the home state



Major Implementation Aspects contd....

- Notification of forbearance price and floor price
 - CERC is preparing a consultation paper on the basis of criteria specified in the regulations.
- Preparedness of Power Exchanges



THANK YOU

Website : www.cercind.gov.in

Email : alokkumar@nic.in



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.

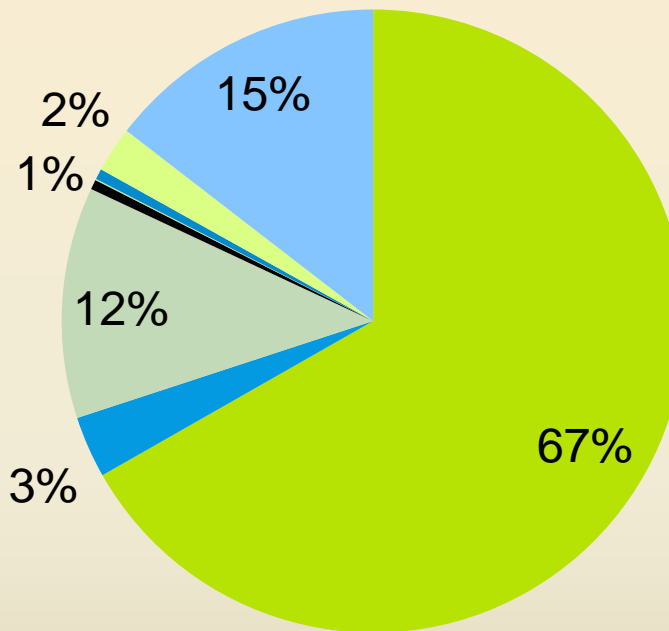


Tariff Policy notified under the Electricity Act

- 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)



■ Coal ■ LIGNITE BASED ■ Gas Turbine ■ Gas Turbine (Liquid)
■ MULTI FUEL ■ Diesel ■ NUCLEAR ■ HYDRO

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.