

Regulatory aspects & issues faced in implementation of Solar RPO

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Solar RPO

Tariff Policy Amendment : 2011

Para 6.4 (1) of the Tariff Policy amended on dated 20/1/2011

- ❑ SERC shall fix a minimum percentage of the total consumption of electricity in the area of a distribution licensee
- ❑ Such purchase should take place more or less in the same proportion in different States
- ❑ SERCs shall also reserve a minimum percentage for purchase of solar energy
 - ❑ Up to 0.25% by the end of 2012-2013
 - ❑ Further up to 3% by 2022
- ❑ Renewable Energy Certificate (REC) would need to be evolved with separate solar specific REC

State wise Solar RPOs – Status

State	2012-13	2013-14	2014-15	2015-16
AP	0.25%	0.25%	0.25%	0.25%
Assam	0.15%	0.20%	0.25%	
Arunachal Pradesh	0.00%	0.0%		
Bihar	0.75%	1.00%	1.25%	
Chhattisgarh	0.50%			
Delhi	0.20%	0.25%	0.30%	0.35%
Gujarat	1.00%			
Haryana	0.75%	1%	1.25%	
Himachal Pradesh	0.25%	0.25%	0.25%	0.25%
J & K	0.25%			
Jharkhand	1.00%			
Karnataka	0.25%	0.25%	0.25%	0.25%
Kerala	0.25%	0.25%	0.25%	0.25%
MP	0.6%	0.8%	1.0%	

State wise Solar RPOs – Status

State	2012-13	2013-14	2014-15	2015-16
Maharashtra	0.25%	0.50%	0.50%	0.50%
Rajasthan	0.50%	0.75%		
Manipur	0.25%			
Meghalaya	0.4%			
Mizoram	0.25%			
Nagaland	0.25%			
Orissa	0.15%	0.20%	0.25%	0.30%
Punjab	0.13%	0.19%		
Tripura	0.10%			
Tamil Nadu	0.05%			
UP	1.0%			
Uttarakhand	0.05%			
UTs & Goa	0.40%			

Total installed solar capacity: July 2012

	<u>Installed</u>	<u>Tied-up</u>
■ NSM	125 MW	610 MW
■ Migration scheme	48 MW (PV); 2.5 MW (Thermal)	048 MW 030 MW
■ RPSSGP & GBI	81 MW	098 MW
■ State policy	690 MW	1049MW
■ Other projects	92MW	092 MW
■ REC Mechanism	4.5MW	029 MW
	Total = 1,042 MW	1956 MW

968.5 Guj. 80 MW Karnataka

Source: CEA base data for 2011-12 and escalated for 2012-13 based on 18th EPS escalation rates for the same period

State	Projected Demand (MU)	Solar RPO Target (2012-13)	Solar RPO Target (2012-13)	Capacity required for meeting Solar RPO	Total Capacity Tied Up as on 20.07.2012	Gap to be fulfilled in 2012-13
	2012-13	%	(MU)	(MW)	(MW)	(MW)
Andhra Pradesh	98,956	0.25%	247.39	148.6	75.5	73.14
Arunachal Pradesh	631	0.00%	-	-	0.025	-0.03
Assam	6,810	0.15%	10.21	6.1	5	1.14
Bihar	15,272	0.75%	114.54	68.8	0	68.82
Chhattisgarh	15,889	0.50%	79.45	47.7	29	18.73
Delhi	28,598	0.15%	42.90	25.8	2,552	23.22
JERC (Goa & UT)	12,860	0.40%	51.44	30.9	1.7	29.21
Gujarat	79,919	1.00%	799.19	480.2	968.5	-488.33
Haryana	40,167	0.05%	20.08	12.1	8.8	3.27
Himachal Pradesh	8,647	0.25%	21.62	13.0	0	12.99
Jammu and Kashmir	14,573	0.25%	36.43	21.9	0	21.89
Jharkhand	6,696	1.00%	66.96	40.2	36	4.23
Karnataka	65,152	0.25%	162.88	97.9	164	-66.14
Kerala	21,060	0.25%	52.65	31.6	0.025	31.61
Madhya Pradesh	53,358	0.60%	320.15	192.3	13,205	179.14
Maharashtra	150,987	0.25%	377.47	226.8	75.5	151.29
Manipur	608	0.25%	1.52	0.9	0	0.91
Mizoram	418	0.25%	1.04	0.6	0	0.63
Meghalaya	2,154	0.40%	8.62	5.2	0	5.18
Nagaland	596	0.25%	1.49	0.9	0	0.90
Orissa	24,284	0.15%	36.43	21.9	29	-7.11
Punjab	48,089	0.07%	33.66	20.2	46,825	-26.60
Rajasthan	55,057	0.75%	412.93	248.1	329.9	-81.80
Sikkim	436	0.00%	-	-	0	0.00
Tamil Nadu	91,441	0.05%	45.72	27.5	18,055	9.41
Tripura	1,010	0.10%	1.01	0.6	0	0.61
Uttarakhand	11,541	0.05%	5.77	3.5	5.05	-1.58
Uttar Pradesh	85,902	1.00%	859.02	516.1	95,375	420.74
West Bengal	41,896	0.25%	104.74	62.9	52.05	10.88
			Total	2,352.4	1,956.06	396.32

Solar RPO : Issues

- ❑ Need for setting RPO keeping in mind availability of RE resources as a whole (not limited to resources in the State) : Same level across the country
- ❑ Need for specifying RPO as a percentage of “total consumption” of electricity in the area of a distribution licensee
- ❑ Need for specifying separate Solar RPO as per the Tariff Policy
- ❑ Long Term RPO Trajectory: For next 5 to 10 years
- ❑ Need to recognise REC as valid instrument for compliance of RPO
- ❑ Strong Enforcement Mechanism: Very few SERCs took initiatives

Solar REC : Issues

- ❑ Floor/Forbearance Price
 - ❑ Longer visibility more than 5 years
- ❑ Vintage based floor price for solar REC
 - ❑ Multiplier linked to reduction in floor price
 - ❑ Legal interpretation
- ❑ Trading of REC
 - ❑ Secondary Market, Multiple Trading
 - ❑ Liquidity
 - ❑ Major Issue of Tracking and Monitoring of RECs
- ❑ Issue Solar RECs to Obligated entity: Only for RE purchase beyond RPO

RPO Setting and Enforcement: issues

RPO Level/
Obligations

Setting of minimum RPO level
Obligations for large customers (direct or through Utility)

Compliance
Monitoring

Monthly compliance monitoring by SNA / SERC

Compliance
requirement

Quarterly or bi-annual compliance requirements

Enforcement

Adequate enforcement on all obligated entities for being eligible for incentivisation

RPO Monitoring

Monitoring and Enforcement Framework for RPO

State Electricity Regulatory Commission (SERC)

- Shall direct SNA to prepare a detailed list of obligated entities.
- To mandate quarterly/bi-annual enforcement of RPO mechanism.
- Based on the quarterly compliance report, it shall direct the SNA

State Nodal Agency (SNA)

- Shall obtain information regarding RPO compliance from obligated entities. *Incase of CPP and OA Consumers, SNA to gather information from Discoms/ Electrical Inspectorate.*
- Shall prepare a summary statement of RE procurement and publish in their website on quarterly basis.
- Shall collect data of yearly estimated RE procurement and purchase of RECs from OE.
- Shall reconcile the information of REC procurement from the registry and submit a report on RPO compliance by 30th April of each year to SERC.
- Shall prepare a list of OE and furnish the same on bi-annual basis to the SERC.

Distribution Licensees

- Discoms shall submit the report of Quarterly RPO Compliance to the State Agency
- Discoms shall submit the information, for reporting of the Yearly Estimated RE requirement to SNA

Open Access Consumers

Captive Users

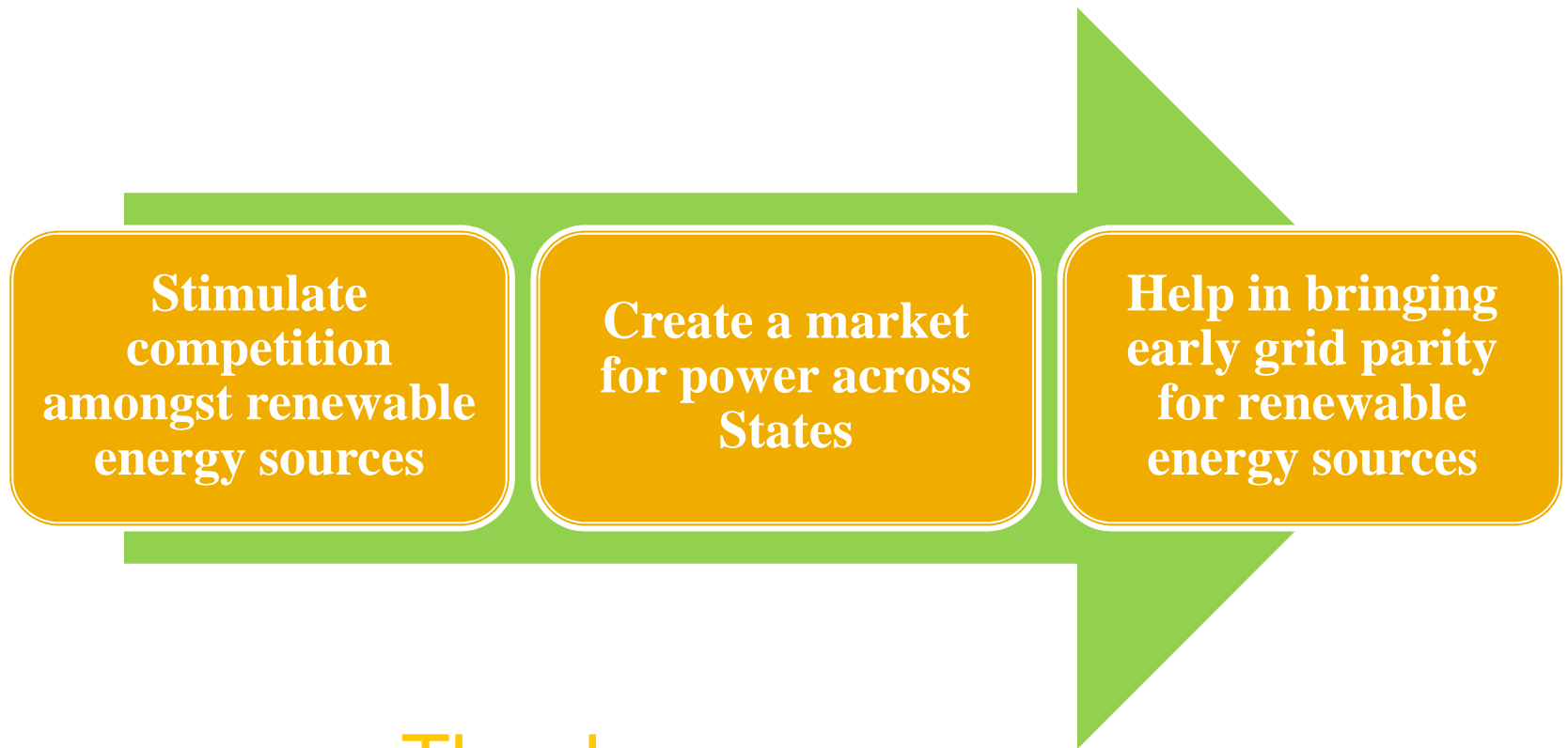
Standard formats for submitting compliance related information to be agreed upon.

Cost of RPO to high end consumers

- Instead of the utilities being required to bear the entire costs of meeting the RPO obligations, large industrial and commercial customers can be required to meet their obligations directly.
- Such direct compliance would substantially reduce the costs incident on the licensees and would also create a sustainable market.
- Issues emanating from the poor state of utility finances and the impact of the same on the RE industry would also be partially addressed in the process.
- This mechanism is supported by legal opinion received from the Attorney General of India.

Direct obligation for large customers will obviate many issues related to RPO compliance, financial condition of utilities, compliance capabilities and enforcement of penalties.

Way Forward



Thank you