MAHAVITARAN
Maharashtra State Electricity Distribution Co. Ltd.

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Collaboration | Innovation | Excellence

SESSION 5:
Renewable Consumption Obligations for DISCOMs

Presentation By

Maharashtra State Electricity Distribution Company Limited

Renewable Consumption Obligations (RCOs):

Statutory obligation under Energy Conservation (Amendment) Act, 2022 reshaping DISCOM's strategy and performance

RCOs have emerged as a key policy instrument to ensure that DISCOMs progressively increase the share of renewable energy in their power procurement and supply mix

Not merely a compliance requirement as they are central to:

- Achieving national renewable energy targets
- Reducing carbon intensity of the power sector
- Enhancing long-term cost stability through diversification of supply
- Aligning DISCOM operations with climate commitments and market reforms

Implications of effective compliance on DISCOMs:

Portfolio Rebalancing

Focus shifts from mere compliance to actual consumption impact

Compliance Architecture

Regulatory oversight is being operationalized through monitoring

Operational & Financial Impact

Shall influence long term decisions potentially impacting cross-subsidy balances & operational efficiency

Renewable Consumption Obligations (RCOs):

Present RCO trajectory vide **MoP Gazette Notification** dated **October 20, 2023**

Sl. No.	Year	Wind RE	Hydro RE	Distributed RE	Other RE	Total RE
1	2024-25	0.67%	0.38%	1.50%	27.35%	29.91%
2	2025-26	1.45%	1.22%	2.10%	28.24%	33.01%
3	2026-27	1.97%	1.34%	2.70%	29.94%	35.95%
4	2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
5	2028-29	2.95%	1.42%	3.90%	33.10%	41.36%
6	2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

As per the new MoP notification dated 27.09.2025 following provisions are introduced

a) **Fungibility:** Shortfalls and surpluses across Wind, Hydro, and Other RE are mutually adjustable; Distributed RE is non-fungible—its shortfall cannot be offset, though its surplus is adjustable against other categories.

b) **Nuclear Exclusion:** Nuclear generation is excluded from all RCO calculations.

c) **Rooftop Solar Accounting:** Energy generated by rooftop solar consumers is included in total Gross Energy Consumption (GEC).

d) **Certification Requirement:** For distribution licensees, compliance reports must be certified by the State Load Dispatch Centre (SLDC).

e) **RPO Subsumption:** No separate RPO applies under the Electricity Act, 2003; all state-level RPOs are subsumed within RCO targets under this notification.

MSEDCL Compliance

MSEDCL has contracted sufficient RE capacity for RCO fulfilment and from FY 2026-27, available surplus RE power can be utilized for the fulfilment of earlier shortfalls; The RA Plan below provides the snapshot:

Demand Projections for MSEDCL

Financial Year	2025	2026	2027	2028	2029	2030
Energy Projections (MU)	170073	178792	187653	196113	204715	214281
Peak Demand Projections(MW)	23609	25412	27943	30743	31767	32994
RE Contracted Capacity (MW)	17317	27877	44878	51142	57651	61445
RPO Target %	29.91	33.01	35.95	38.81	41.36	43.33
RE MU required	50869	59019	67461	76111	84870	92848
RE MU Contracted @Std CUF	32247	54710	97720	110128	123012	129754
Shortfall / (-) Surplus	18622	4309	(-) 30259	(-) 34016	(-) 38342	(-) 36906
RPO Achievement %	**18.96**	**30.6**	**52.07**	**56.16**	**60.09**	**60.55**

Resource Adequacy Plan : Source-wise cumulative capacity

FY 2025+	Thermal +Gas	Nuclear	Large Hydro	PSP-BSES Storage	Wind	Solar	Hybrid	FDRE	Bagasse + Biomass	Small Hydro	DRE	Total
25-26	22551	1191	2819	250	2855	16012	300	0	2911	317	2675	51881
26-27	22551	1191	2928	1000	2855	28377	1080	1468	3256	317	3234	68257
27-28	22551	1191	3241	1000	2855	29377	4344	1468	3601	317	4016	73961
28-29	22551	1191	3345	2750	2855	32377	4344	1468	3601	317	5111	79910
29-30	24379	1191	3345	4824	2855	32377	4344	1468	3601	317	6644	85345

Challenges & Suggestions (1/2)

- **State-specific RCO targets** to be determined by SERCs, considering:
  - Existing thermal contracted capacity
  - State-wise RE resource availability
  - Grid stability and system reliability
- **RCO targets to be linked to contracted RE capacity (MW terms)**, not actual Generation; MU to be considered as per Normative factors
- **Flexibility in RCO compliance period**:
  - Compliance to be assessed over the **entire control period**, instead of annually
- **Rationalization of penalty structure**:
  - Review and align RCO penalty rates with existing RPO framework
  - DISCOMs not to be penalized for delays beyond their control

Challenges & Suggestions (2/2)

- **Promote storage for flexibility and grid stability:**
  - Support Energy Storage Systems through Viability Gap Funding (VGF)
  - Enable higher RE absorption and manage intermittency
- **Infrastructure-related safeguards:**
  - Waive RPO obligations for RE project delays not attributable to DISCOMs
  - Presently concessional ISTS charges:
    - For delayed projects applicable higher charges to be borne by developers where delays are not caused by DISCOMs
    - ISTS charges to be waved for delay at DISCOM end in case where delay is beyond DISCOM control

Good Practices

Agriculture Feeder Solarization : MSKVY 2.0 (KUSUM-C)

Mahavitaran, Energy Department, GoM

Maharashtra is home to more than 1 Crore farmers, who contribute to 30% of the state's electricity consumption

1 Crore
Farmers

45 Lakh
Agri. Electricity Connections

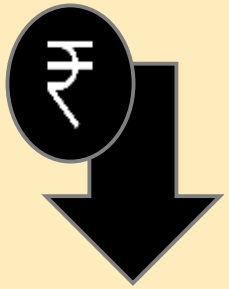
12 %
Contribution GSDP

16,000 MW
Connected load

Maharashtra has the highest Agriculture demand in India (39,000 Mus)

Agriculture sector highly subsidized & the Major cause of Revenue losses to Discom

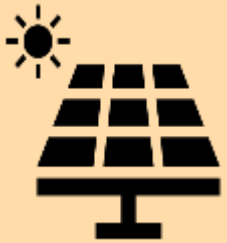
Mission 2026 for Solarisation of 30% Ag. Feeders and commissioning of 16,000 MW Solar Capacity



Reduction in cost of supply to agricultural and **cross-subsidy burden** on Industries

Investment of **~ Rs. 65,000** Crore across various districts in Maharashtra

Daytime Electricity supply to farmers and agriculture



Over **70,000** rural jobs and development of solar ecosystem and skills

Contribution to national and state solar targets, **CO2 emission** saving

5 Major Challenges addressed through Design Re-engineering

Small Project Size	Land Availability	Delay in Permissions / NoCs	No Data Availability to Developers	Delay in Payments to SPDs
Cluster based approach (200-250 MW - 50 MW)	Identification of Govt. land within 5-10 km radius from of 33/11 KV Sub-Station.	• Advance Clearance • Advance Grid Connectivity	Data Room With GIS Layered details of each land parcel	• Creation of revolving fund mechanism • Provision for Deemed Generation • Nodal Agency to extend payment security
Economics of Scale for Solar Power Developer	**40,000 Acres Govt. Land identified in 3** **Extensive use of PM GATI SHAKTI & other IT Portals.**	**More than 6,000 NoCs and Grid Connectivity Permissions issued.**	**Geo Tagged Substations & land parcel details**	**Provision of Rs.100 Cr / 1000MW from Green Cess Fund**

New Transactional Structure

- Formation of Maha Agro Solar Company
- 22 SPVs Created

Ease of Doing Business

- Exclusive single window portal & access to data room to SPDs
- From award of work to real time monitoring of Generation through SCADA will be from single window portal.

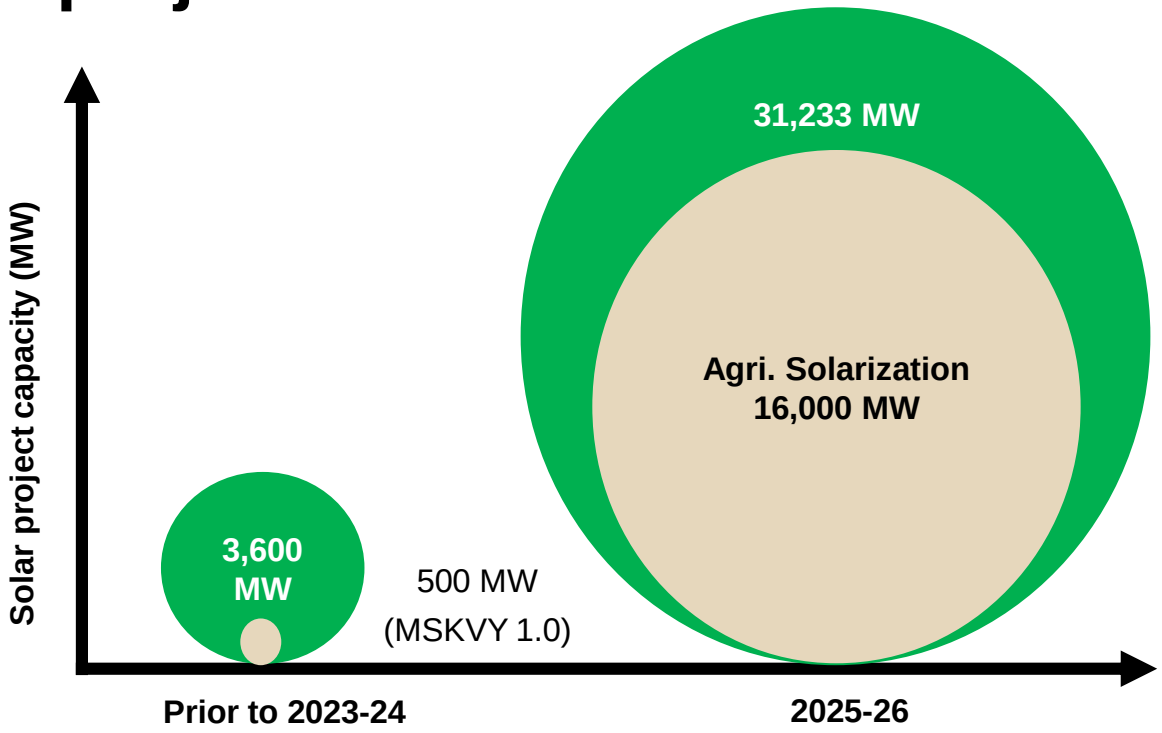
Tagging of Projects with PM – KUSUM C

- In order to avail (30%) CFA (Central Finance Assistance)
- Rs. 1713 Cr CFA approved till date by MNRE

State Incentives

- Land Lease rent fixed @ Rs. 1.25 Lakh per Hectare with 3% increase per year (For Private Land)
- Social Development Grant to Gram Panchayat @Rs.5Lakh per year for 3 years
- System Strengthening Grant @ Rs. 25 Lakhs per Substation (One Time)
- Production Incentive for early commissioning @ 25 Paisa/ Unit at 11 KV and @ 15 paisa per unit at 33 KV (for 3 years)

16,000 MW Solar Capacity awarded in 10 months and over 13% projects commissioned

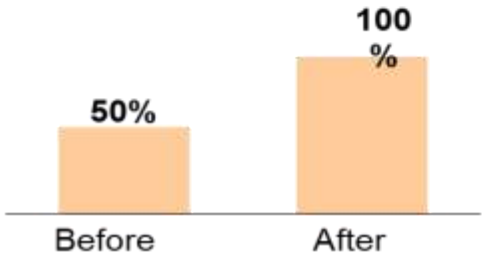


- Transparent e-bidding process
- Cater to 100% of agriculture demand across 30 districts in the state
- Average tariff discovered Rs. 3.07/kWh
- All regulatory approvals in place along with tariff adoption
- Till date Capacity commissioned 3355 MW (Sub-stations 612)

Solar energy capacity of Maharashtra will be >8 times of the present solar capacity within next 12 Months

PM-KUSUM C / MSKVY 2.0 : Game Changer for all stakeholders (Farmers)

Daytime Power



Additional income

1.25L per Ha per annum from leasing of non-fertile land

Lower electricity tariff

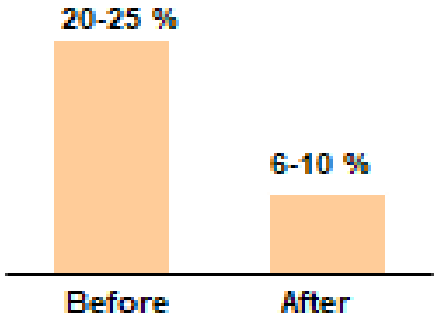
Increased Participation of women workforce

Due to day-time availability of power

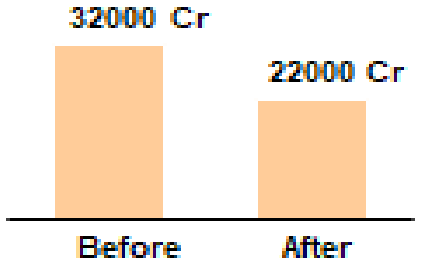
>20 Lakhs women benefitted

PM-KUSUM C / MSKVY 2.0 : Game Changer for all stakeholders (Utility)

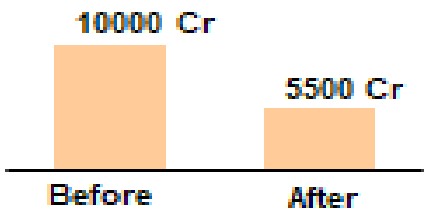
Reduction in AT&C losses



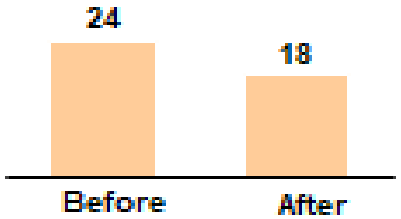
Savings of Rs.10,000 Cr. In Power Purchase Cost



Reduction in annual Govt. subsidy to the tune of Rs.4500 Cr.



25% reduction in Green House Gas emissions *(MtCO2e)*



Cross-subsidy reduction on account of Rs. 1-1.5/kWh tariff reduction for commercial and Industrial consumers

Thank you...