



Renewable Consumption Obligations (RCO)

AIDA Annual Conference



**Bureau of Energy Efficiency,
Ministry of Power**



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Background



Chronology of RPO events till MoP Notification Oct 23'



Chronology of the key events

Electricity Act 2003 brings the provision for RPO under section 86(1)(e)

June 2003

Gujarat becomes first state to formally launch the RPO trajectory

October 2005

Tariff Policy empowers SERCs to specify RPO targets and determine tariffs for non-conventional energy sources

January 2006

A key amendment in tariff policy calls for SERCs to reserve minimum share of Solar Energy reaching 8% by 2022

January 2016

MoP issued the RPO and energy storage obligation trajectory till FY30. Following this trajectory, SERCs have issued regulations specifying RPO targets for their respective states.

During COP26, India committed to achieving 500 GW of non-fossil-based generation capacity by 2030.

Long-term trajectory for RPOs from FY20 to FY22, aiming at 21% of RPO by 2022, including 10.5% for solar, was notified

India notified a RPO growth trajectory, initially spanning three years from FY17 to FY19, targeting 17% of RPO by FY19, with 6.75% for solar.

July 2022

November 2021

June 2018

July 2016

RPO is brought under EC Act after Parliament passed amendments to the Energy Conservation (EC) Act

MoP issues the RPO trajectory till FY30 targeting 43.33% by 2030.

MoP issues draft Amendment to the October 2023 Notification on RCO

MoP issues revised draft Amendment to the October 2023 Notification on RCO

December 2022

October 2023

March 2025

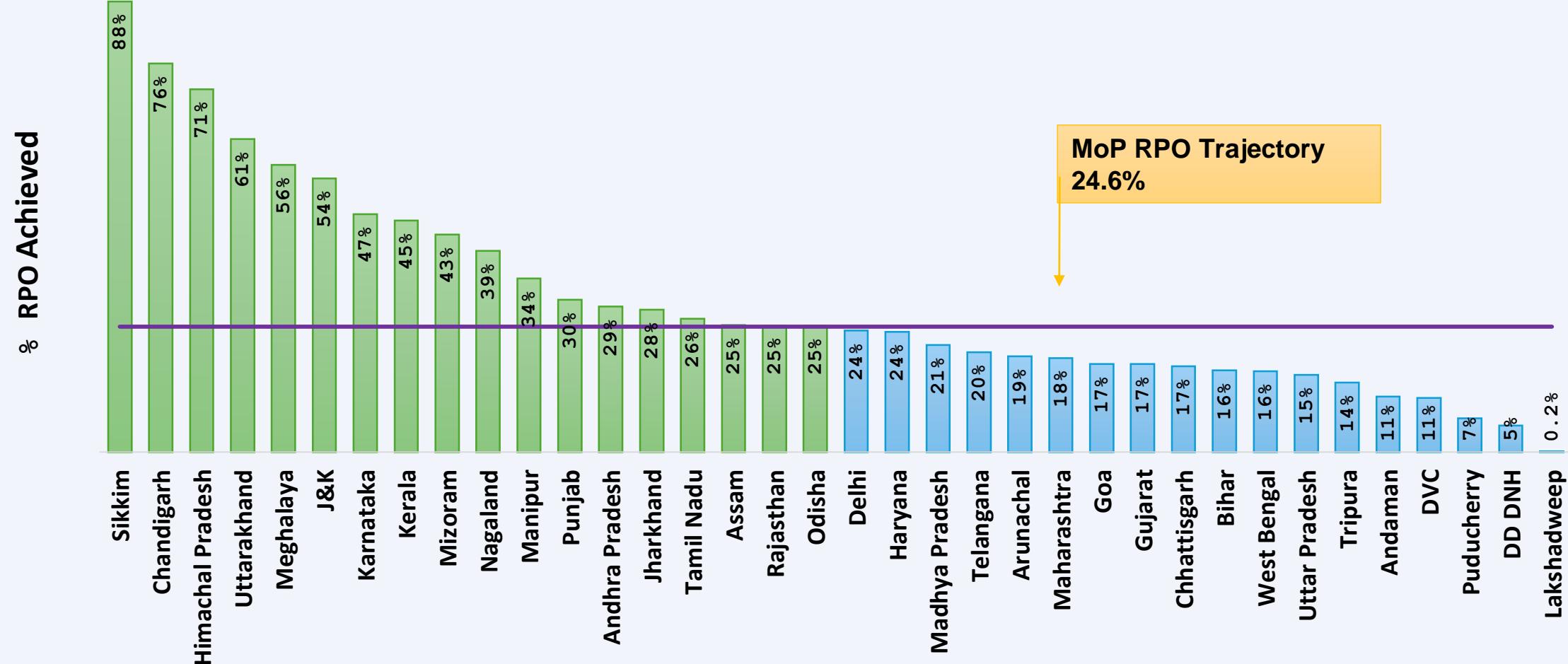
July 2025



RPO Compliance for FY 2022-23



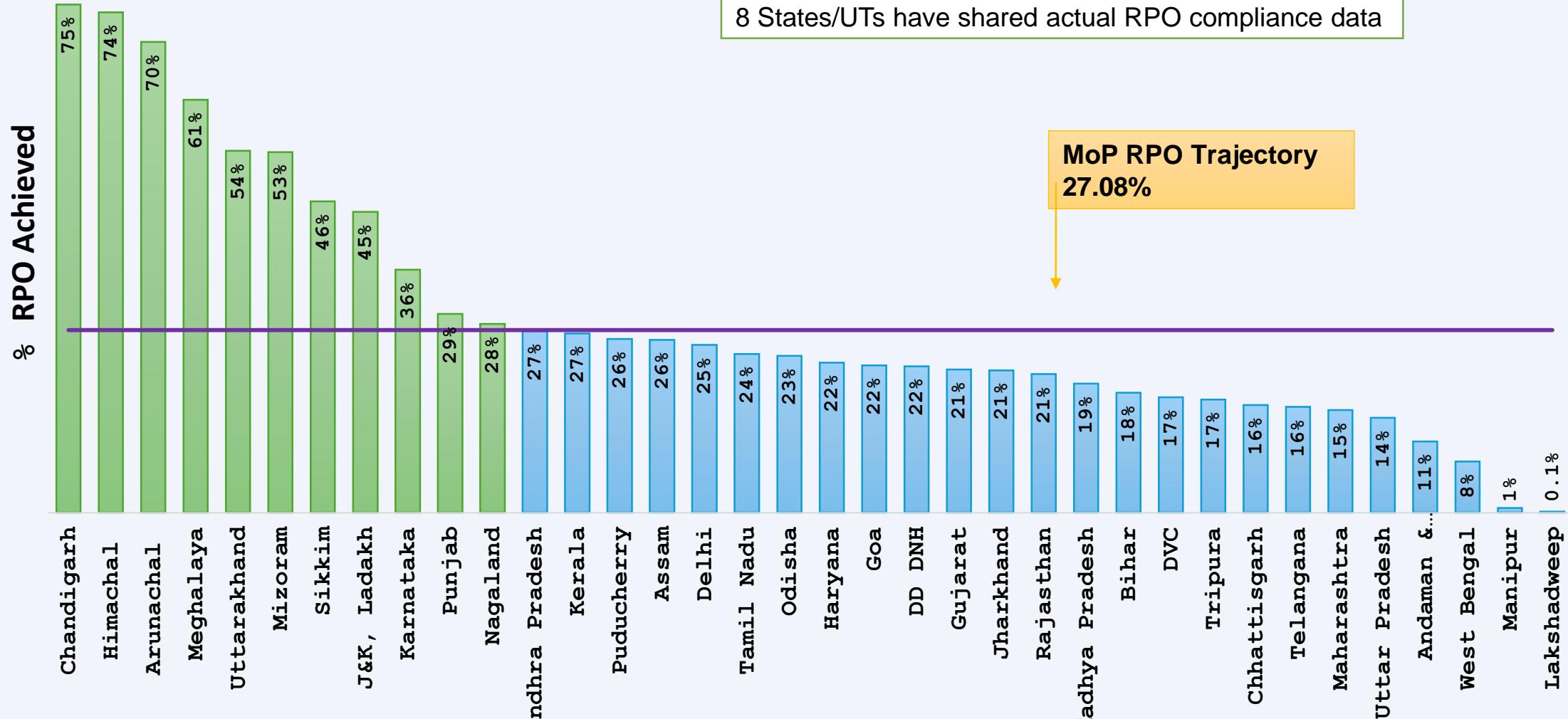
17 States/UTs have shared actual RPO compliance data



Source: Grid India, Note: RPO data has been prepared based on proxy method for the State/UTs which has not shared the actual data



RPO Compliance for FY 2023-24



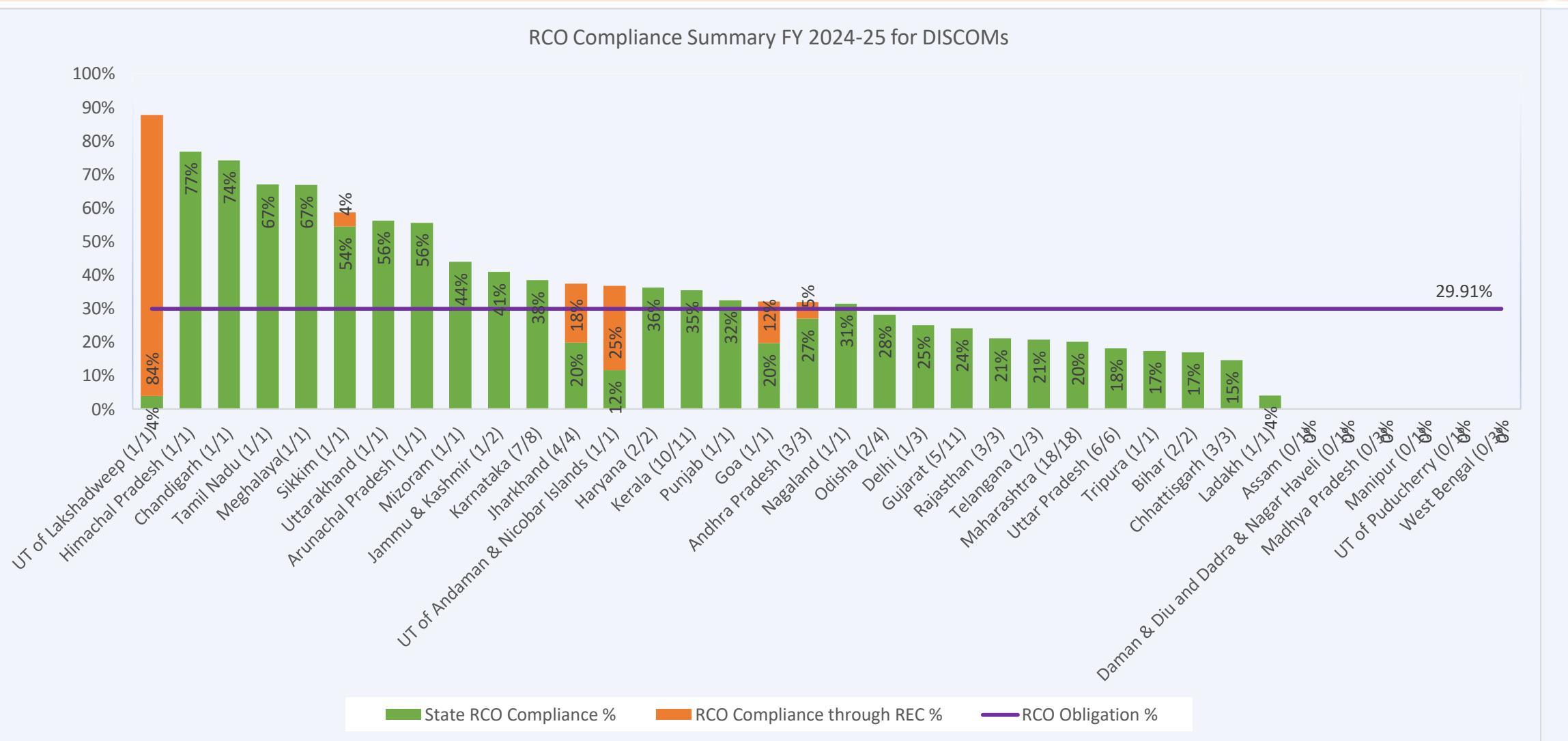
Source: Grid India, Note: RPO data has been prepared based on proxy method for the State/UTs which has not shared the actual data



RPO Compliance for FY 2024-25



RCO Compliance Summary FY 2024-25 for DISCOMs





Renewable Consumption Obligations (RCO)



Hon'ble Prime Minister's 'Panchamrit' at CoP26



Hon'ble Prime Minister at (COP26) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Glasgow, United Kingdom, expressed to intensify its climate action by presenting to the world the following five nectar elements (**Panchamrit**) of India's climate action:

- Emissions intensity of GDP to reduce by 45% by 2030 (vs. 2005)
- Projected carbon emissions to reduce by 1 billion tonnes by 2030
- **Non-fossil energy capacity to reach 500 GW by 2030**
- Net-zero by 2070
- 50% of electricity capacity from non-fossil sources by 2030

The five elements enunciated by India at COP26 in Glasgow have been appropriately incorporated in enhanced Nationally Determined Contributions (NDCs). The updated NDCs were approved by the Union Cabinet and submitted to UNFCCC in August 2022

In light of the updated NDCs, the following events took place:

- The Energy Conservation Act, 2001 was Amended in December 2022 and RPO was brought under the purview of the EC Act.
- The RPO targets were significantly amended and trajectory till 2030 was defined.

In his 76th Independence Day speech, Hon'ble Prime Minister reiterated the India's ambitious goal of achieving 500 gigawatts of renewable energy capacity by 2030. He noted that India has been among the only G20 countries to meet its Paris Accord goals.



The Energy Conservation Act Amended in Dec 2022



- **Amendment to the Energy Conservation Act** issued on 19th December 2022.
- **Amendment of section 14 of the Principal Act:**
 - “**Clause (x)** specify minimum share of consumption of non-fossil sources by designated consumers as energy or feedstock, provided different share of consumption may be specified for different types of non-fossil sources for different designated consumers.”
- **Non-compliance to above will attract the penal provisions as per the Energy Conservation (Amendment) Act, 2022.**
- **Amendment of the section 26(3), outlines the penalties for the non-compliance with the directions issued under clauses (n) and (x) of section 14.**



Gazette Notification on RCO issued on 20th October 2023



- Notification is issued as per Energy Conservation (Amendment) Act, 2022 notified in December 2022
- Trajectory is prepared on similar lines of RPO order issued earlier by MoP in July 2022
- Trajectory is applicable from 1st April 2024

FY	Wind RE	Hydro RE	Distributed RE	Other RE
2024-25	0.67%	0.38%	1.50%	27.35%
2025-26	1.45%	1.22%	2.10%	28.24%
2026-27	1.97%	1.34%	2.70%	29.94%
2027-28	2.45%	1.42%	3.30%	31.64%
2028-29	2.95%	1.42%	3.90%	33.10%
2029-30	3.48%	1.33%	4.50%	34.02%

Total RCO Trajectory



Electricity distribution licensee:

- Includes Distributed RE
- Separately defines targets for Wind, Hydro RE and Other RE.
- **Total fungibility between Wind, Hydro and Other RE**
- **No fungibility for DRE** with other RE sources.
- **DRE target is half for Hilly and North-Eastern States, Remaining half is added under 'Other RE'**

DCs with CPPs and OA Consumers:

- Total RCO targets shall be applicable irrespective of the non-fossil fuel source.

Bureau of Energy Efficiency has been entrusted with the task of maintaining data related to compliance of RE utilization by DCs and report to the Central Government.



Renewable Consumption Obligations (RCO)



Applicability for Obligated DCs



DISCOMs: Any designated consumer who is a distribution licensee.



CPP*: Any designated consumer consuming electricity from a captive power plant(s) based on sources other than Captive WHRS plants



Open Access*: Any designated consumer procuring electricity through open access

**Obligated DCs shall be obligated to the extent of their consumption of electricity from a captive power plant(s), or Open Access based on sources other than non-fossil sources*



Superceeding Notification on RCO issued on 27th September 2025



New Modes of Compliance

Corporate Level Compliance

VPPAs

RCO Buyout

DRE

Increased multiplier: 4kWh/kW/day

DRE target: 75% for urban DISCOMs

One-way fungibility

Nuclear: 100%

Energy consumed in aluminium smelters: 50%

Exemptions to various technologies

Electricity generated and self consumed from WHRS* : 100%

Electricity generated and self consumed from fossil-based Co-gen: 50%

Electricity generated and self consumed from Waste Energy Recovery: 100%

Compliance verification

OA consumers / CPPs: by BEE empanelled AEA Agencies

DISCOMs: By SLDCs

Compliance timelines defined

Submission of certified energy accounts :

- 31st October 2025 for 2024-2025
- 31st July for each subsequent year

AY compliance window :

- 31st March 2026 for the year 2024-2025
- 31st December for each subsequent year

For all DCs, no additional Renewable Purchase Obligation (RPO) shall apply under the Electricity Act, 2003

* Except for electricity generated from WHRSG in captive combined-cycle gas-based generating station



Components of Total RE Targets Notified



DRE for Hilly and NE States

- In hilly and North-Eastern States/UTs, half of the Distributed Renewable Energy component under RPO trajectory will be allocated, with the rest categorized as 'Other RE'

Wind RE

- Wind renewable energy requirement will be met through the energy generated by Wind Power Projects which have been commissioned after March 31st, 2024.

Hydro RE

- Hydro renewable energy requirement will solely be met by energy generated from Hydro Power Projects (Including Pump Storage Projects and Small Hydro Projects), commissioned after March 31st, 2024.
- Hydro Power Projects situated outside India, subject to approval by the Central Government.

Distributed RE

- Requirement under the distributed renewable energy will exclusively be sourced from energy produced by renewable energy projects upto 10 MW in capacity (including net metering, gross metering, virtual net metering, group net metering, behind-the-meter installations, and any other configurations notified by the Central Government).

Other RE

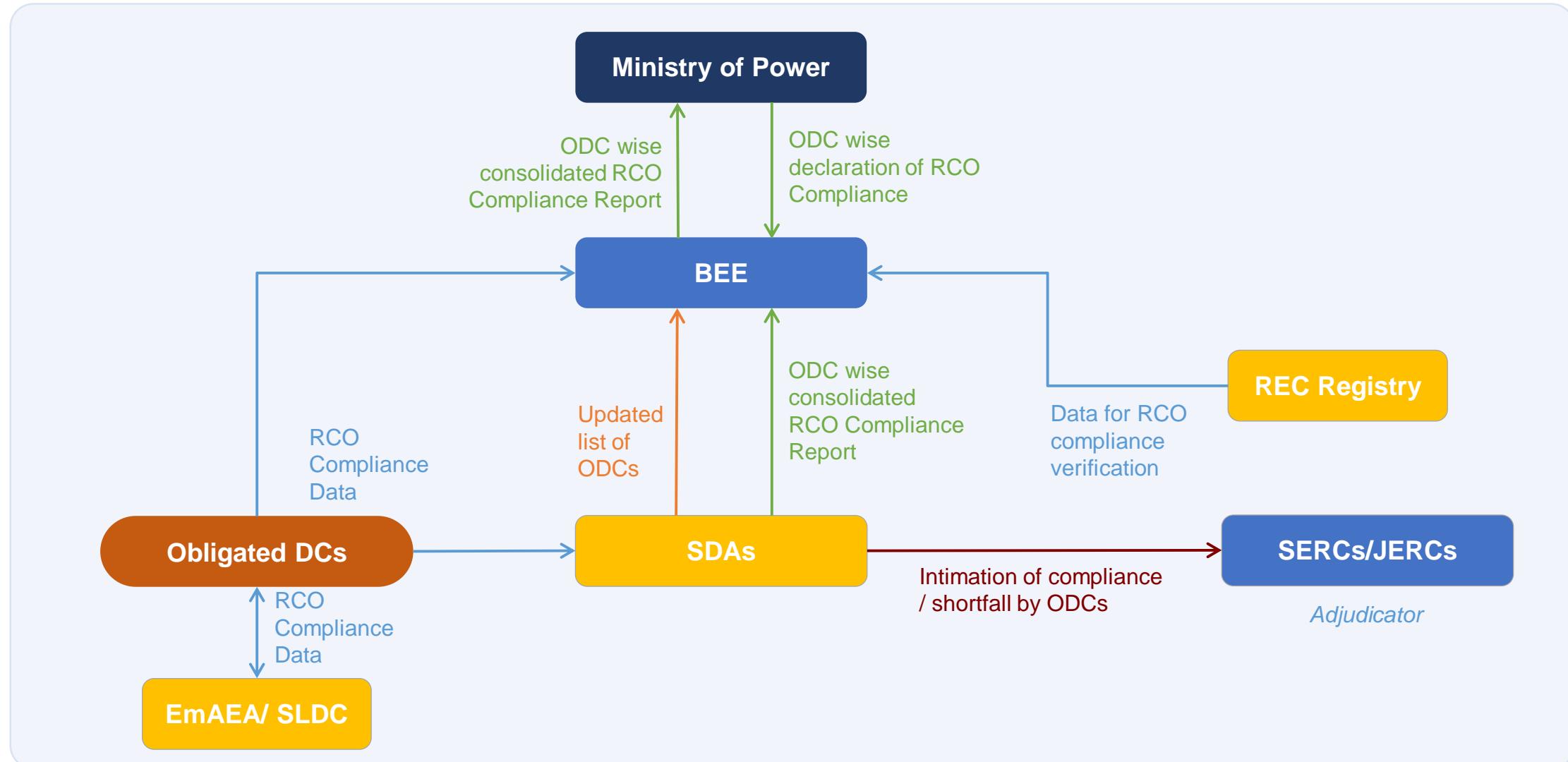
- Other RE component may be met by energy produced from any renewable energy power project comprise energy from Wind, hydro power commissioned before April 1st, 2024.
- Surplus energy consumption exceeding wind or hydro RE component in that year may be considered under other RE.
- Surplus consumption of DRE component in that year may be considered under other RE.



Proposed RCO Ecosystem and compliance process



Proposed Institutional Mechanism





Eligible RE sources and Modes of Compliance

Definition of Distributed Renewable Energy

Sources: Non-fossil based electrical energy generated from **all eligible RE sources**.

Capacity and configuration : **Upto 10 MW in size** and shall include Solar installations under all configurations notified by the Central Government.

DC fails to provide generation data – The estimated generation by DRE installation shall be calculated as **4 (kWh/kW/day)**.

The no. of days that the DRE installation has been operational shall be certified by the ODC and/or the AEA / ACV.





Treatment of Losses



DISCOM: Supply of electricity to their consumers being the primary business process for a DISCOM , the electricity consumed by all consumers including the distribution losses shall be the energy deemed to be consumed by the DISCOM.

The distribution infrastructure is controlled by Discoms.

Discoms are responsible for minimizing the Distribution losses



Open Access Consumers: The quantum of energy consumed by the OA consumer at the point of drawl from grid shall be considered as its energy consumption

Transmission losses are not under the control of OA consumer



CPPs: consumption of power by DCs shall include all self-consumption of power except the auxiliary power consumption in the CPPs

Auxiliary consumption is largely based on inherent heat rate of CPP, not part of power consumed in the production facility of DC



ESS: Only the energy consumed after deducting losses in the energy storage system and the banking charges in terms of energy wherever charged by an energy storage provider, shall be considered towards fulfilment of RCO.

ESS losses are not consumption
RCO encourages minimizing ESS losses - DCs will have less RE to consume if losses are higher



Mode of fulfillment of RCO



1

Captive mode

- Own generation (**grid connected or otherwise**) under captive mode.
- ODC shall not have availed RECs/ other Energy Attribute Certificates
- Methodology defined for calculating RE from **co-firing of AFR of renewable nature** such as BLDS, Biomass, RDF etc. and related WHR

2

Open Access

By procuring Renewable Energy through **Open Access** from any Developer either directly or through a trading licensee or through power markets.

3

Requisition from Distribution Licensee

By **requisition of green power** from distribution licensee as per **Green OA Rules, 2022**, as amended from time to time. NOC required from the Discom.

4

RE stored in ESS

Energy stored in any energy storage system including BESS and Pumped Hydro Storage Plants, shall be eligible to the extent the stored energy is generated from eligible non-fossil energy source

Combination of any of the above



Mode of fulfillment of RCO



5

RECs

By redemption of **Renewable Energy Certificates** (RECs) by self retention or by purchase from power exchange(s) or electricity trader(s).

6

VPPA

by entering into Virtual Power Purchase Agreements as notified from time to time by Central Government or CERC

7

RCO Buyout

In case of shortfall of availability of RECs in the market, the DCs may choose to pay a buyout price (to be specified by CERC)

8

Green Hydrogen

By Consumption of Green Hydrogen or Green Ammonia **as energy**.

9

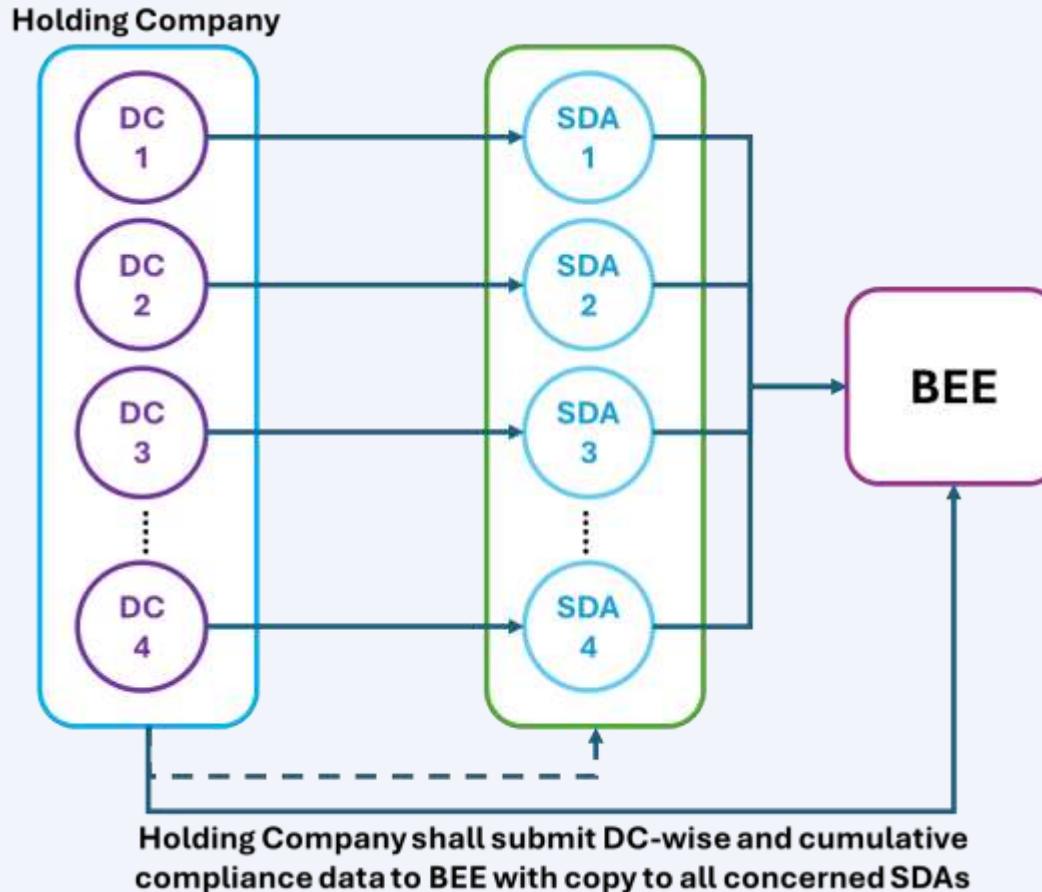
Corporate level compliance

Corporate level compliance shall be allowed for corporates having multiple obligated DC entities under its common control

Combination of any of the above



Corporate Level Compliance



The corporate entity shall **submit to the Bureau, with a copy to respective SDAs**, the compliance assessment form (**Form C**) with compliance information for the complete target year duly certified and signed by the AEA / ACV.

The compliance assessment form (Form C) shall contain the following:

- i. **Compliance information** for each of the multiple ODCs
- ii. **Cumulative compliance information** for all the ODCs
- iii. **The Certified Form D** shall be appended with **supporting documents** for each of the multiple ODCs

Timelines:

After Target Year: Form C with Part A to Part D with relevant supporting documents by 15th August of assessment year

After Assessment Year Compliance Window: Form C with relevant supporting documents by 15th January of the assessment year.



Corporate Level Compliance



- Allowed for corporates having multiple obligated DC entities under its **common control** as defined in the **Companies Act, 2013** or under the relevant **Cooperative Societies Act**.
- The multiple DC entities may be **co-located or located** in different geographies in India
- The multiple DC entities **may belong to any of industry sectors**.
- considered **at the level of the holding company** having common control of the DCs.
- RCO compliance will be considered in **aggregate across the multiple DCs** of registered corporate

The parent entity shall submit **certification**:

- by the **CEO/** equivalent of the Holding Company, and from **CA/ CS**
- mentioning the legal name of the Holding Company and the legal names of all ODCs under the common control

Certification shall be accompanied by:

- the Certificate of Incorporation issued by the Registrar of Companies.
- any relevant documents submitted to the Registrar of Companies

Special Case: licensed entity procures power on behalf of the State DISCOMs

- the licensed entity will act as the holding company.
- licensed entity shall issue a monthly category-wise (conventional (brown) power, nuclear power, and the categories of renewable power) statement of allocation of power to the respective DISCOMs by the 15th day of the following month.



Compliance & Penalty



Penalties and Adjudication



Amendment to the EC Act issued on 19th December 2022, Section 26(3) and Section 26(4) outline penalty for non-compliance against the requirement of RCO defined under the Section 14 (x)

Sub-section (3) of section 26 of EC Act: Failure to comply with obligations

- Liable to a penalty which shall not exceed ten lakh rupees for each such failure.
- Additional penalty which shall not exceed twice the price of every metric ton of oil equivalent prescribed under this Act.

Sub-section (4) of section 26 of EC Act: Failure to provide information

- Liable to a penalty which may extend to fifty thousand rupees on first such non-compliance or failure.
- Additional penalty not exceeding ten thousand rupees per day for every subsequent non-compliance or failure.



Penalty Amount for non-compliance



Illustration
of the RPO
Penalty

One MTOE = 11,630 kWh

Price of one MTOE = INR 21,650.00

(As per MoP Notification dt 26.12.2023 for the year 2019-20 and it may be 20-30% higher for the year 2024-25)

Maximum Penalty on each unit of shortfall in meeting RE consumption norms

$$\begin{aligned} &= (2 \times 21,650)/11,630 \\ &= \mathbf{INR \ 3.72 \ per \ kWh} \end{aligned}$$

Maximum Penalty - Let's take example of Delhi for FY 2022-23

Obligation Target (MU)	Compliance (MU)	Shortfall (MU)
8643	8368	275

Maximum Penalty Amount = 3.72×275 Million INR

= 102.3 Crore Rupees

Thank You

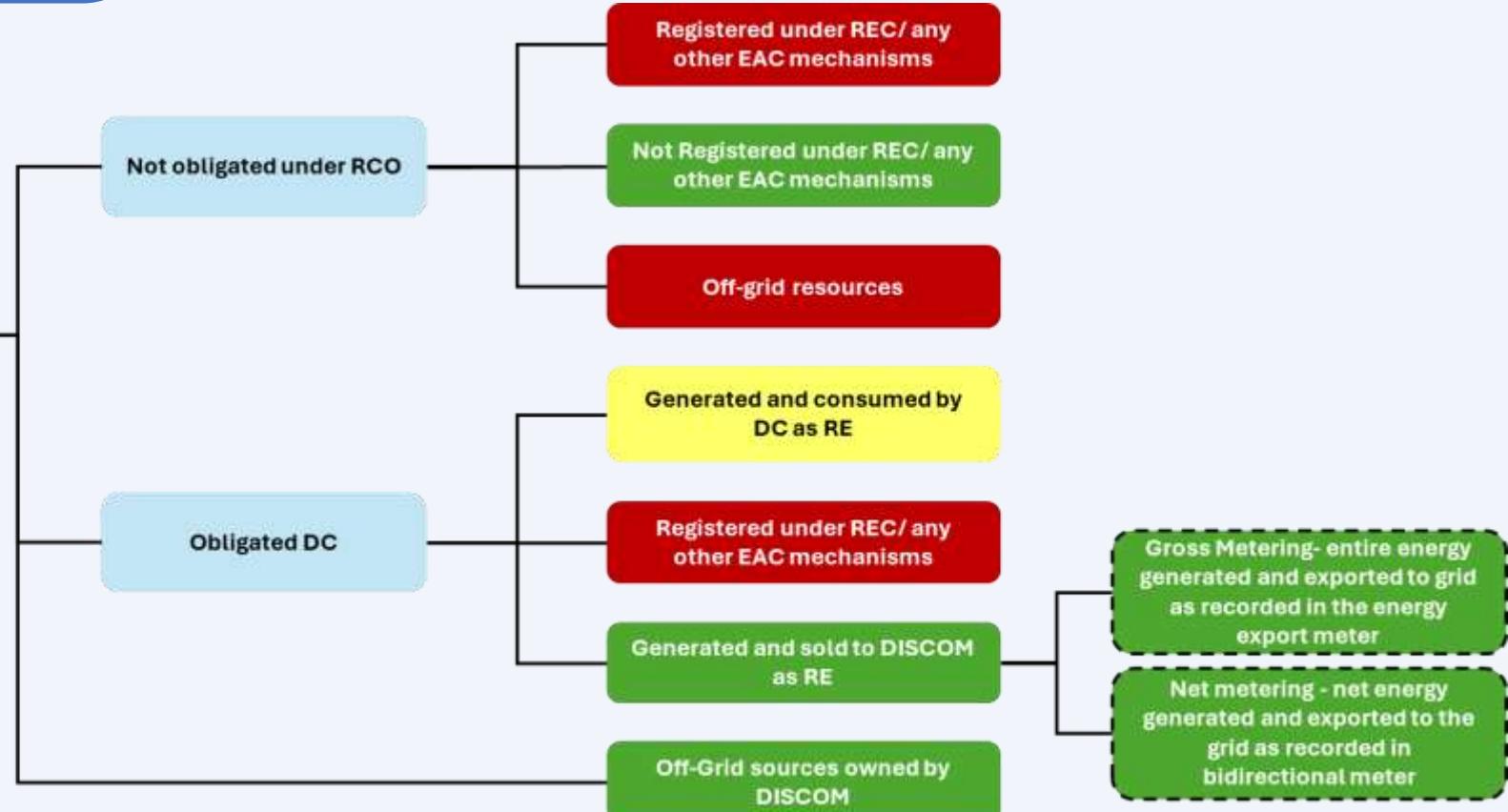
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Other Modes of compliance specific to Distribution Licensees

Consumers in area of supply of DISCOM with CGPs based on eligible non-fossil energy sources

Legend

- No direct use for RCO compliance
- RCO compliance of DC
- RCO compliance of DISCOM





Virtual Power Purchase Agreements (VPPAs)

