



LEARNING FROM STATES: POLICY HARMONY FOR 10 GW ANNUAL WIND CAPACITY ADDITIONS

Identification of Best Practices and Formulation of Unified National Guidelines for an Interdepartmental and Interstate Task Force under the Ministry of New and Renewable Energy (MNRE)

June 2026

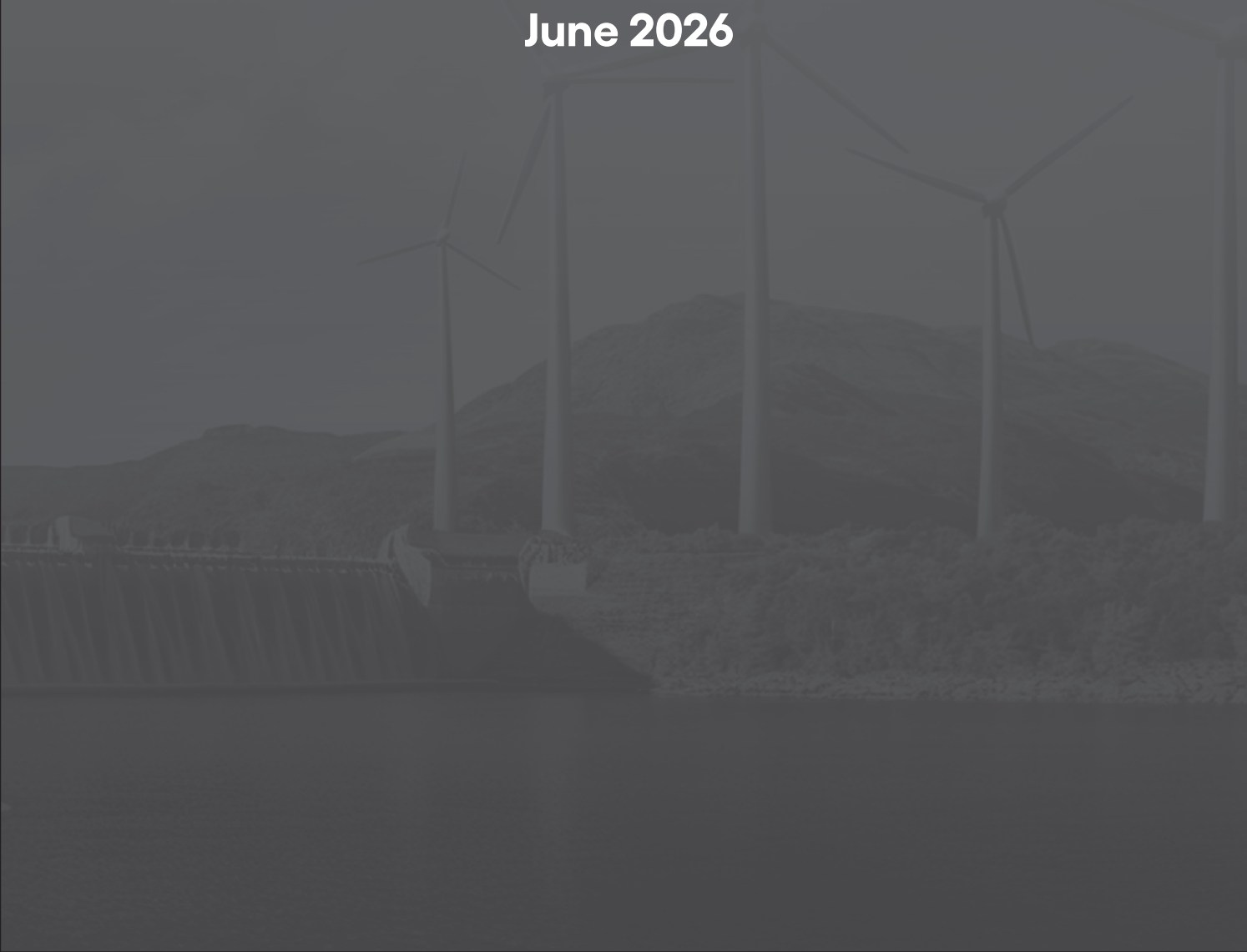




LEARNING FROM STATES: POLICY HARMONY FOR 10 GW ANNUAL WIND CAPACITY ADDITIONS

Identification of Best Practices and Formulation of Unified National Guidelines for an Interdepartmental and Interstate Task Force under the Ministry of New and Renewable Energy (MNRE)

June 2026



Foreword



Shri Santosh Kumar Sarangi

**Secretary
Ministry of New and Renewable Energy
Government of India**

India's renewable energy journey continues to make remarkable progress towards its clean energy ambitions with the collective efforts of the Union and State Governments, developers, manufacturers and other stakeholders. As we advance towards our target of achieving 500 GW of non-fossil fuel-based installed electricity capacity by 2030, wind energy remains one of the cornerstones of India's energy transition strategy.

Over the past year, the wind sector has witnessed renewed momentum and significant achievements. India recorded one of its highest annual additions of wind energy capacity last year, reflecting growing investor confidence, improved policy support, and the increasing competitiveness of wind power. The sector has also benefited from strengthened transmission planning, enhanced auction activity, greater participation from private developers, and the continued expansion of domestic manufacturing capabilities under the vision of Atmanirbhar Bharat. These developments reaffirm the critical role of wind energy in ensuring energy security, supporting economic growth, and advancing climate action commitments.

As India's renewable energy landscape evolves, the role of State Governments becomes increasingly important. While national policies provide strategic direction, it is often at the state level that projects are conceptualized, developed, and implemented. State-level policies therefore serve as powerful instruments for attracting investments, facilitating project development, enabling infrastructure creation, and addressing region-specific challenges.

This report presents a comprehensive overview of the prevailing wind energy policy frameworks across various states and highlights several noteworthy approaches that have contributed to sectoral growth. It is not intended merely as a compilation of policies, but as a knowledge resource that can facilitate the exchange of ideas and experiences among states. The sharing of best practices can help accelerate policy innovation, reduce implementation barriers, and create a more enabling ecosystem for wind energy development across the country.

I hope this report serves as a valuable reference for policymakers, regulators, developers, investors, and all stakeholders associated with the renewable energy sector. More importantly, it encourages states to learn from one another, adopt proven best practices, and continue strengthening their policy frameworks in support of India's clean energy aspirations.

The Ministry of New and Renewable Energy remains committed to work closely with all states and stakeholders to unlock the full potential of wind energy and to ensure that India continues to lead the global transition towards a sustainable, resilient, and low-carbon future.



Shri Girish Tanti

**Chairman
Indian Wind Turbine Manufacturers Association (IWTMA)**

India's renewable energy journey continues to make significant progress, driven by the collective commitment of Central and State Governments, developers, and industry stakeholders. As we advance towards 500 GW of non-fossil fuel-based capacity by 2030, wind energy remains a cornerstone of India's energy transition critical to energy security, economic growth, and our climate commitments. Sustaining the momentum needed to meet these goals will require the sector to scale meaningfully, and it is widely recognised that additions of the order of 10 GW per annum would place India firmly on that path.

The sector's growth is, however, shaped significantly by the regulatory ecosystem at the state level. Wind energy policies today are characterised by considerable variation across states spanning demand assessment, renewable purchase obligations, open access, land allocation, grid connectivity, power purchase agreements, and dispute resolution. These inconsistencies contribute to delayed timelines, elevated transaction costs, and barriers to inter-state energy trade that collectively constrain the pace of deployment.

This study presents a comprehensive state-by-state regulatory mapping of wind energy policies across major wind-producing and emerging states. It identifies best practices, benchmarks existing frameworks across critical policy domains, and develops actionable recommendations for the states. It is hoped that the findings will serve as a base for harmonised policy conditions conducive to sustained, large-scale wind energy deployment.

I hope this report serves as a valuable reference for policymakers, regulators, developers, and investors. This association remains committed to working alongside government and industry to strengthen the regulatory foundations that India's wind energy sector needs to fully realise its potential.

Table of Contents

1. Executive Summary	14
2. Introduction	19
3. Approach & Methodology adopted for the study	22
3.1 Approach & Methodology	22
3.2 Data Collection process	22
3.3 Scope Boundary	22
4. Best practice assessment across states	23
4.1 State wise assessment across study areas	23
4.2 Demand Enablement	23
4.2.1 Detailed Mapping of Assessment Area – Demand Enablement	23
4.3 Project Execution and Clearance	28
4.3.1 Detailed Mapping of Assessment Area – Project Execution and Clearance	29
5. Annexures	37
5.1 Karnataka	37
5.1.1 Demand Enablement	37
5.1.2 Project Execution	39
5.2 Maharashtra	45
5.2.1 Demand Enablement	45
5.2.2 Project Execution	48
5.3 Gujarat	52
5.3.1 Demand Enablement	52
5.3.2 Project Execution	54
5.4 Rajasthan	59
5.4.1 Demand Enablement	59
5.4.2 Project Execution	62
5.5 Andhra Pradesh	67
5.5.1 Demand Enablement	67
5.5.2 Project Execution	70
5.6 Madhya Pradesh	75
5.6.1 Demand Enablement	75
5.6.2 Project Execution	78
5.7 Tamil Nadu	84
5.7.1 Demand Enablement	84
5.7.2 Project Execution	86
5.8 Telangana	92
5.8.1 Demand Enablement	92
5.8.2 Project Execution	95

List of Figures

Figure 1: Wind capacity announced, awarded and installed over FY2022-26	19
Figure 2: Development life cycle of a wind project	20
Figure 3: Roadmap to 10GW annual capacity additions	20
Figure 4: Study areas analysed across wind project lifecycle	22
Figure 5: Karnataka wind capacity potential 2030 (GW)	37
Figure 6: Karnataka Project Execution Pathway.....	40
Figure 7: Maharashtra wind capacity potential 2030 (GW).....	45
Figure 8: Maharashtra Project Execution Pathway	48
Figure 9: Gujarat wind capacity potential 2030 (GW)	52
Figure 10: Gujarat Project Execution Pathway	55
Figure 11: Rajasthan wind capacity potential 2030 (GW).....	59
Figure 12: Rajasthan Project Execution Pathway	62
Figure 13: Andhra Pradesh wind capacity potential 2030 (GW).....	67
Figure 14: Andhra Pradesh Project Execution pathway	70
Figure 15: Madhya Pradesh wind capacity potential 2030 (GW).....	75
Figure 16: Madhya Pradesh Project Execution Pathway.....	78
Figure 17: Tamil Nadu wind capacity potential 2030 (GW)	84
Figure 18: Tamil Nadu Project Execution Pathway	86
Figure 19: Telangana wind capacity potential 2030 (GW).....	92
Figure 20: Telangana Project Execution Pathway	95

List of Tables

Table 1: Best Practices: Demand Enablement	14
Table 2: Best Practices: Project execution and Clearance	15
Table 3: State-wise assessment across Demand Enablement study areas	23
Table 4: State- Wise Assessment of Demand Assessment & Energy Planning	24
Table 5: Best practices across states - Demand Assessment & Energy Planning	24
Table 6: State- Wise Assessment of Grid Plan	25
Table 7: Best practices across states - Grid Plan	25
Table 8: State- Wise Assessment of Utility Allocation and RPO Compliance	26
Table 9: Best practices across states - Utility Allocation and RPO Compliance	26
Table 10 : State- Wise Assessment of C&I and Open Access rules	27
Table 11: Best practices across states - C&I and Open Access rules	28
Table 12: State-wise assessment across Project Execution and Clearance study areas	29
Table 13 : State-wise assessment across Project Registration	30
Table 14: Best practices across states - Project Registration	30
Table 15: State-wise assessment across Land Acquisition	31
Table 16: Best practices across states - Land Acquisition	32
Table 17: State-wise assessment across Grid Connectivity	33
Table 18: Best practices across states - Grid Connectivity	33
Table 19 : State-wise assessment across Right of Way	34
Table 20: Best practices across states - Right of Way	35
Table 21 : State-wise assessment across Commissioning	36
Table 22: Best practices across states - Commissioning	36
Table 23: Karnataka Demand Assessment	37
Table 24: Karnataka Grid Plan	38
Table 25: Karnataka Utility Allocation & RPO Compliance	38
Table 26: Karnataka C&I Framework and Open Access Rules	38
Table 27: Karnataka DISCOM-wise open Access Charges (FY2025-26)	39
Table 28: Karnataka Project Registration	40
Table 29: Karnataka Land Acquisition	41
Table 30: Karnataka Grid Connectivity	42
Table 31: Karnataka Right of Way	42
Table 32: Karnataka Commissioning	43
Table 33: Maharashtra Demand Assessment & Energy Planning	45
Table 34: Maharashtra Grid Plan	46
Table 35: Maharashtra Utility Allocation, and RPO Compliance	46
Table 36: Maharashtra C&I and Open Access rules	46
Table 37: Maharashtra DISCOM-wise open access charges (FY2025-26)	47
Table 38: Maharashtra Project Registration	48
Table 39: Maharashtra Land Acquisition	49
Table 40: Maharashtra Grid Connectivity	50
Table 41: Maharashtra Right of Way	50
Table 42: Maharashtra Commissioning	51
Table 43: Gujarat Demand Assessment & Energy Planning	52
Table 44: Gujarat Grid Plan	53
Table 45: Gujarat Utility Allocation, and RPO Compliance	53
Table 46: Gujarat C&I and Open Access rules	53
Table 47: Gujarat DISCOM-wise open access charges (FY2025-26)	54
Table 48 : Gujarat Project Registration	55
Table 49 : Gujarat Land Acquisition	56
Table 50 : Gujarat Grid Connectivity	56
Table 51 : Gujarat Right of Way	57

Table 52 : Gujarat Commissioning.....	58
Table 53 : Rajasthan Demand Assessment & Energy Planning.....	59
Table 54: Rajasthan Grid Plan	60
Table 55: Rajasthan Utility Allocation, and RPO Compliance	60
Table 56: Rajasthan C&I and Open Access rules.....	60
Table 57: Rajasthan DISCOM-wise open access charges (FY2025-26)	61
Table 58 : Rajasthan Project Registration	62
Table 59 : Rajasthan Land Acquisition	63
Table 60 : Rajasthan Grid Connectivity	64
Table 61 : Rajasthan Right of Way	64
Table 62 : Rajasthan Commissioning	65
Table 63 : Andhra Pradesh Demand Assessment & Energy Planning.....	67
Table 64 Andhra Pradesh Grid Plan	67
Table 65: Andhra Pradesh Utility Allocation, and RPO Compliance.....	68
Table 66 : Andhra Pradesh C&I and Open Access Rules	68
Table 67: Andhra Pradesh DISCOM-wise open access charges (FY2025-26).....	69
Table 68 : Andhra Pradesh Project Registration.....	70
Table 69 : Andhra Pradesh Land Acquisition.....	71
Table 70 : Andhra Pradesh Grid Connectivity.....	72
Table 71 : Andhra Pradesh Right of Way	73
Table 72 : Andhra Pradesh Commissioning	74
Table 73 : Madhya Pradesh Demand Assessment & Energy Planning	75
Table 74: Madhya Pradesh Grid Plan.....	75
Table 75: Madhya Pradesh Utility Allocation, and RPO Compliance	76
Table 76 : Madhya Pradesh C&I and Open Access rules	76
Table 77: Madhya Pradesh DISCOM-wise open access charges (FY2025-26)	77
Table 78 : Madhya Pradesh Project Registration	79
Table 79 : Madhya Pradesh Land Acquisition	79
Table 80 : Madhya Pradesh Grid Connectivity	81
Table 81 : Madhya Pradesh Right of Way	81
Table 82 : Madhya Pradesh Commissioning	82
Table 83 : Tamil Nadu Demand Assessment & Energy Planning	84
Table 84 : Tamil Nadu Grid Plan.....	84
Table 85: Tamil Nadu Utility Allocation, and RPO Compliance	85
Table 86 : Tamil Nadu C&I and Open Access Rules	85
Table 87: Tamil Nadu DISCOM-wise open access charges (FY2025-26)	86
Table 88 : Tamil Nadu Project Registration	87
Table 89 : Tamil Nadu Land Acquisition	87
Table 90 : Tamil Nadu Grid Connectivity	88
Table 91 : Tamil Nadu Right of Way	89
Table 92 : Tamil Nadu Commissioning	90
Table 93 : Telangana Demand Assessment & Energy Planning.....	92
Table 94 Telangana Grid Plan	93
Table 95: Telangana Utility Allocation, and RPO Compliance.....	93
Table 96 : Telangana C&I and Open Access Rules	93
Table 97: Telangana DISCOM-wise open access charges (FY2025-26).....	94
Table 98 : Telangana Project Registration.....	95
Table 99 : Telangana Land Acquisition.....	96
Table 100 : Telangana Grid Connectivity.....	96
Table 101 : Telangana Right of Way	97
Table 102 : Telangana Commissioning	97

1. Executive Summary

India's wind energy sector stands at a pivotal inflection point. FY2025-26 recorded the highest annual capacity addition in the sector's history, with 6.1 GW installed and cumulative capacity reaching 56 GW. This momentum is underpinned by a robust development pipeline, including 43 GW under construction, 25.8 GW awarded during FY2023-25, and a further 7.6 GW awarded in FY2025-26. Complementing this growth, central and state agencies have planned over 152 GW of transmission evacuation infrastructure by 2030, signalling strong institutional commitment to the sector's long-term expansion.

With a national target of 100 GW of wind capacity by 2030, India must sustain annual installations of ~10 GW over the remainder of the decade. While the current pipeline provides a strong foundation, achieving this trajectory will require continued progress in addressing key deployment bottlenecks, including transmission readiness and connectivity allocation, land acquisition and right-of-way processes, regulatory approvals, and timely execution of power sale agreements.

Several states have already introduced targeted policy and regulatory interventions to address these challenges and accelerate project development while reducing implementation risks. Drawing on these experiences, this report identifies a set of replicable best practices that can be adopted across jurisdictions to improve project execution, enhance regulatory certainty, and strengthen investor confidence.

These identified best practices for the 9 study areas are as tabulated below:

Table 1: Best Practices: Demand Enablement

#	Study Area	Parameter	Best practice identified	State and relevant policy
A.	Demand Assessment & Energy Planning	Wind resource assessment (State/NIWE)	• Publish a taluka-level GIS-based study, refresh it every three years • Provide open public access through a state portal that integrates NIWE data with privately commissioned WRA studies	• Karnataka: KREDL wind resource assessment studies with NIWE • Maharashtra: MEDA wind resource assessment studies with NIWE
		Wind in long term energy plan	• Notify an explicit wind sub-target within the state RE plan • Maintain a rolling five-year planning horizon • Assign wind a defined capacity credit in DISCOM Resource Adequacy filings	• Karnataka: State RE policy 2022-27, Clause 3.2 and RAP document • Maharashtra: State RE policy Section 3(a), 3(d) and RAP document • Gujarat: State RE policy 2025 and GUVNL RAP document – section 2.5, 2.6 • Rajasthan: Integrated Clean Energy Policy 2024 • Andhra Pradesh: Integrated Clean Energy Policy • Madhya Pradesh: State RE policy and RAP document • Telangana: Clean and Green Energy Policy
B.	Grid Plan	Transmission planning for wind	• Prepare a 5-year rolling STU plan with substation buildout, • Publish substation list and indicative available margin for RE integration	• Gujarat: STU transmission plan • Rajasthan: STU transmission plan (RVPN 2375/2025) and Investment plan • Madhya Pradesh: Capital Investment Plan for Transmission
C.	Utility Allocation	Wind RPO architecture	• Notify a wind-specific RPO trajectory aligned with MoP rules	• All states have same practice

#	Study Area	Parameter	Best practice identified	State and relevant policy
	and RPO Compliance		Publish public annual reports for compliance by all obligated stakeholders of state	
D.	C&I and Open Access rules	Eligibility	- Notify Consumer who has contracted demand or sanctioned load of Hundred (100) KW or more, either through single connection or through multiple connections aggregating Hundred (100) kW or more located in same electricity division of a distribution licensee - No capacity restriction for setting up of RE projects for captive use with respect to the consumer's contract demand/sanctioned load (kW/MW, KVA/MVA) with Discoms	- Karnataka: KERC OA Regulations 2025, Regulation 1(k) - Maharashtra: RE & ESS Policy 2025-26 to 2035-36, Section 7.2.1 - Gujarat: GERC GEOA Regulations 2024 -Regulation 9(II), Regulation 13(II) Sr. 5 (system study provision), Regulation 14 - Andhra Pradesh: APERC GEOA Regulation 2024 - (Reg. No. 3 of 2024), Clause 2.1(f) - Madhya Pradesh: MPERC TC for OA 2021, Regulation 3.3 - Tamil Nadu: The Tamil Nadu Electricity Regulatory Commission (Terms and conditions for Green Energy open Access) Regulations, 2025-12(1) - Telangana: Telangana State Electricity Regulatory Commission (Terms and conditions of Open Access), Regulation, 2023 clause 8.1
		Open access approvals	- Notify GEOA approvals for grant of open access within 15 days through a single-window online portal as per central GEOA notification - Upon receipt from CNA (Zero date), SNA provides immediate electronic acknowledgement. - Accepts the application within 3 working days after confirming all documents, processing fee, and BG are furnished, forwards to TSTRANSCO/DISCOMs within 5 working days for system availability check	- Gujarat: GERC GEOA 2024 - Regulation 13(II) - Telangana: Telangana State Electricity Regulatory Commission Terms and Conditions of Open Access, Regulation, 2024 Clause-14.2
		Captive/ Group Captive openness and verification	- Notify separate document with clearly defined captive criteria in line with electricity rules - Notify process for annual audit and relevant formats - Notify procedure for transfer of SPV	- Karnataka: KERC Verification of Captive Status of Generating Plants regulations - Gujarat: GERC GEOA 2024 – Regulations 9(V) – 9(VIII), Schedule I paras 1-11

Source: MEC+ Analysis

Best practices identified across 5 study areas under project execution and clearance

Table 2: Best Practices: Project execution and Clearance

#	Study Area	Parameter	Best practice identified	State and relevant policy
A.	Project Registration	Single window	Establish a unified single-window registration mechanism integrating SNA and utility approvals under a single point of	- Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal for RE projects

#	Study Area	Parameter	Best practice identified	State and relevant policy
			accountability with defined turnaround timelines To ensure clarity and standardized execution, visually map project process steps using a flowchart and provide a corresponding user manual for each step	
		Digitized/online portal	Deploy an end-to-end digital registration portal enabling online submission, real-time status tracking, and digital issuance of project registration certificates	- Karnataka: Invest Karnataka KREDL - Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal - Rajasthan: RAJ Nivesh portal Rajasthan - Andhra Pradesh: Department of Industries Portal Andhra Pradesh - Madhya Pradesh: SNA maintained portal - Telangana: TGREDCO Portal
		Documentation	To prevent overarching project delays, ensure project registration documents clearly identify the intended land parcels and grid substation, rather than waiting for finalized grid connectivity	- Karnataka: RE Policy 2022-27, Clause 5.1 & 6.1(a) - Gujarat: Operational guidelines under Integrated RE policy Clause 5.2.2.7, 4.5(i) - Rajasthan: Procedure for Grant of Connectivity to Intra-State Transmission System effective 01 February 2026, Clause 2.2, 2.6 and Annexure 11 Clause B(5) and B(7) - Andhra Pradesh: Integrated Clean Energy Policy 2024 - Orders Issued - Clause 5.5 (a)–(g), Clause 17.12 (Allotment milestones a3, a4); Operational Guidelines, Clause 8(a) - Madhya Pradesh: MP RE policy, 2.2.2, 3.1.2, 3.1.3, 3.1.4, 3.2.3, 3.1, annexure 2
B.	Land Acquisition	Land allotment	- Notify a structured land allotment framework covering government wasteland, revenue land, and private land, with defined eligibility, pricing, and allocation procedures - Provision for land under RE park development	- Maharashtra: RE&ESS Policy 2025-26 to 2035-36, Sections 6.1, 6.2, 6.4 - Gujarat: Guidelines for Renewable Energy Project Development Clause-9.1 - Rajasthan: Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(i) (ii) (iii), 16.1 and land revenue rules, 2025 Section 2 - Madhya Pradesh: MP RE policy - 2025 clause 3.1, 12.2, 12.3
		Land-use conversion	Notify clear land-use conversion provisions with online application, defined timelines, and deemed approval in case of delays more than 30 days	- Karnataka: Land reforms and certain other law (amendment) bill, 2025, Clause 95(ii) - Maharashtra: Amendment to Maharashtra Land revenue code - Rajasthan Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(iv)

#	Study Area	Parameter	Best practice identified	State and relevant policy
		Statutory approvals	Single window/online portal for approvals, clearance and change of land use intimation	- Andhra Pradesh: Integrated Clean Energy Policy 2024 - Clause 5.13 - Telangana: Clean and green energy policy – section 9.7 (i) - Maharashtra: RE&ESS Policy 2025-26 to 2035-36, Section 8.1 - Andhra Pradesh: Integrated Clean Energy Policy 2024 - Clauses 5.16, 17.7, and 17.10 - Telangana: Tg-ipass clearances and approval table
C.	Grid Connectivity	Connectivity Application & Eligibility	Operate a fully digital connectivity application process through single window portal administered by the STU with transparent eligibility criteria and queue management	- Maharashtra: REGRID MEDA single window portal for RE projects - Gujarat: GUVNL Akshay Urja Setu portal for RE projects - Rajasthan: RREC online portal for RE projects - Andhra Pradesh: NREDCAP Single Unified Portal
		Feasibility Assessment & Connectivity Grant	- Grant of Connectivity is issued by STU/DISCOM within 30 days from application receipt, subject to feasibility - Provision for grid connectivity under RE park development	- Maharashtra: Revised Procedure for grant of grid connectivity to In-STS, Section 7 - Gujarat: Procedure for grant of grid connectivity to In-STS, Section 7 - Tamil Nadu: TNERC connectivity and Intra-State OA regulations, 2014, Section 6 - Telangana: Clean and green energy policy – 9.4 and Connection Agreement – 2.2
		Transfer of Connectivity	Notify clearly defined procedure with NOC of SNA requirement for transfer of connectivity with clear definition of exception cases	Maharashtra: Revised Procedure for grant of grid connectivity to In-STS, Clause 6.9.1, 6.9.3
D.	Right of Way	Statutory Approvals	- Deploy online single window registration portal for RoW grant with defined timelines - To ensure clarity and standardized execution, visually map project process steps using a flowchart and provide a corresponding user manual for each step	Gujarat: RoW Gujarat portal
		Dispute Resolution & Closure	Define a structured tier wise escalation pathway from utility level to district administration with notified resolution timelines	Maharashtra: RoW policy 2022
E.	Commissioning	Electrical & Safety Approvals - CEIG & Statutory	- Notify a defined CEIG approval process with clear institutional responsibility split across developer, STU, and SLDC - Online portal for CEIG approvals with defined manual and steps - Exemption in mandatory inspection by CEIG for electrical installations up to 33kV	- Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal for RE projects - Rajasthan: Energy department notification 15(7) Energy/2026/05515 - Telangana: TG-ipass clearance and other public delivery service point 17

#	Study Area	Parameter	Best practice identified	State and relevant policy
		Metering, Protection & SCADA Compliance	Online portal for metering approvals with defined manual and steps	- Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal for RE projects
		Grid Synchronisation Approval & Trial Run	Online process for grid synchronisation approval and trial run procedures with defined SLDC engagement and documentation requirements	- Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal for RE projects
		Commissioning Certification & COD Declaration	Online commissioning certification defined process through intimation	- Maharashtra: REGRID MEDA portal - Gujarat: GUVNL Akshay Urja Setu portal for RE projects

Source: MEC+ Analysis

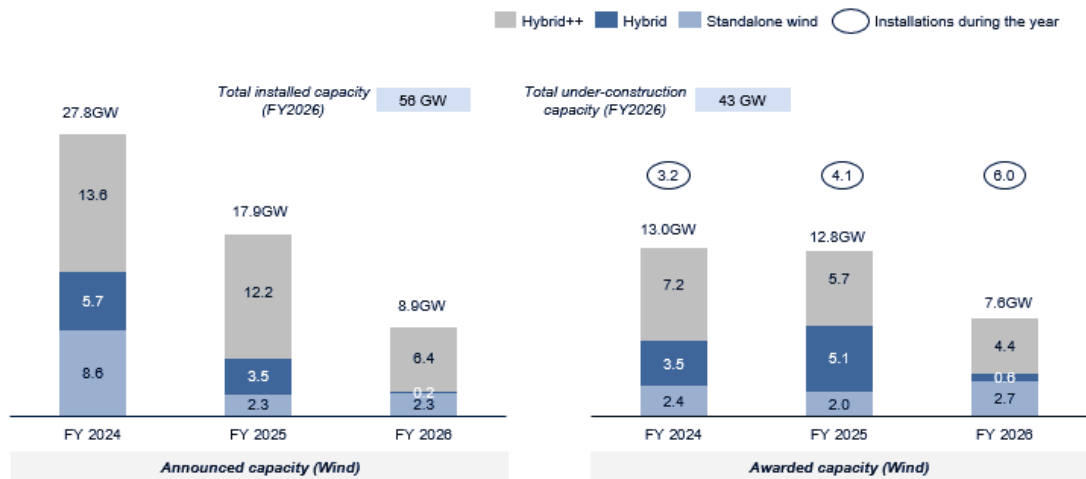
The timely and coordinated implementation of these measures offers the most practical pathway to convert India's substantial project pipeline into commissioned capacity. By creating a more efficient and predictable ecosystem for wind energy development, these reforms can help bridge the gap between ambition and execution, placing the country's 100 GW wind target firmly within reach.

2. Introduction

India's renewable energy ambition is anchored in two targets: 500 GW of total installed capacity and 100 GW from wind by 2030. As the country transitions toward uninterrupted renewable power, wind plays an increasingly critical role. Its complementarity with solar and its dispatchability through hybrid configurations make it indispensable at scale. Recognising that generation ambition must be matched by infrastructure readiness, the government has committed to 152 GW of grid capacity at the intra and inter-state level ensuring that the evacuation backbone keeps pace with deployment.

The sector's performance over the past year reflects the strength of this foundation. By FY2026, India had installed 56 GW¹ of wind capacity as part of a broader 275 GW RE base, consolidating its position as the world's fourth-largest wind market. In FY2025–26, tenders of 8.9 GW were released, 7.6 GW were awarded by utilities, and 6 GW were commissioned across industry; the highest annual commissioning figure on record. The growing share of Hybrid++ tenders, at approximately 57% of awards, signals increasing alignment with the country's objective of transitioning to firm, uninterrupted renewable power.

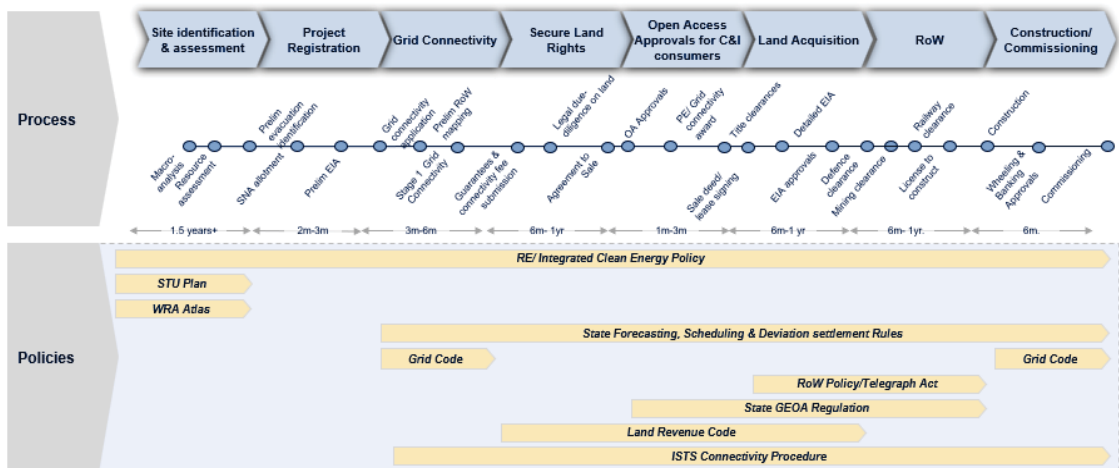
Figure 1: Wind capacity announced, awarded and installed over FY2022-26



Source: SECI and other REIA announcements, MEC+ Analysis

However, reaching the 100 GW² wind target by 2030 requires sustaining 10 GW of annual commissioning and the current record falls short of that threshold. The constraint lies in how wind projects move through the development lifecycle. From site identification and land procurement through environmental clearances, grid connectivity approvals, and final commissioning, each stage is governed by a separate regulatory framework and administered by a distinct set of departments and agencies. Where these processes are slow, unclear, or poorly coordinated, delays accumulate limiting the pace at which tendered and awarded capacity translates into operating projects.

Figure 2: Development life cycle of a wind project



Source: MEC+ Analysis

For a project to be executed in a time-bound manner, the designated departments must work in sync across every stage of the lifecycle. Clarity and transparency in the governing processes are necessary conditions — but equally important is the timely execution of each department's defined roles and responsibilities. In the existing ecosystem, the projects face challenges such as grid construction delays, grid allocation issues, land – RoW & developer related issues, other regulatory issues and PSA signing delays.

Figure 3: Roadmap to 10GW annual capacity additions



Source: MEC+ Analysis

Some states have taken concrete steps to expedite the deployment. By streamlining approval workflows, reducing procedural ambiguity, and strengthening inter-departmental coordination, they have created enabling conditions for faster project execution. This report identifies those interventions as best practices.

Unlocking 10 GW of annual wind installations across the country will require these best practices to be adopted at scale. The analysis that follows identifies these best practices that can close the gap between India's deployment ambition and its current execution reality.

To support this vision and drive actionable change, this report aims to achieve the following key objectives:

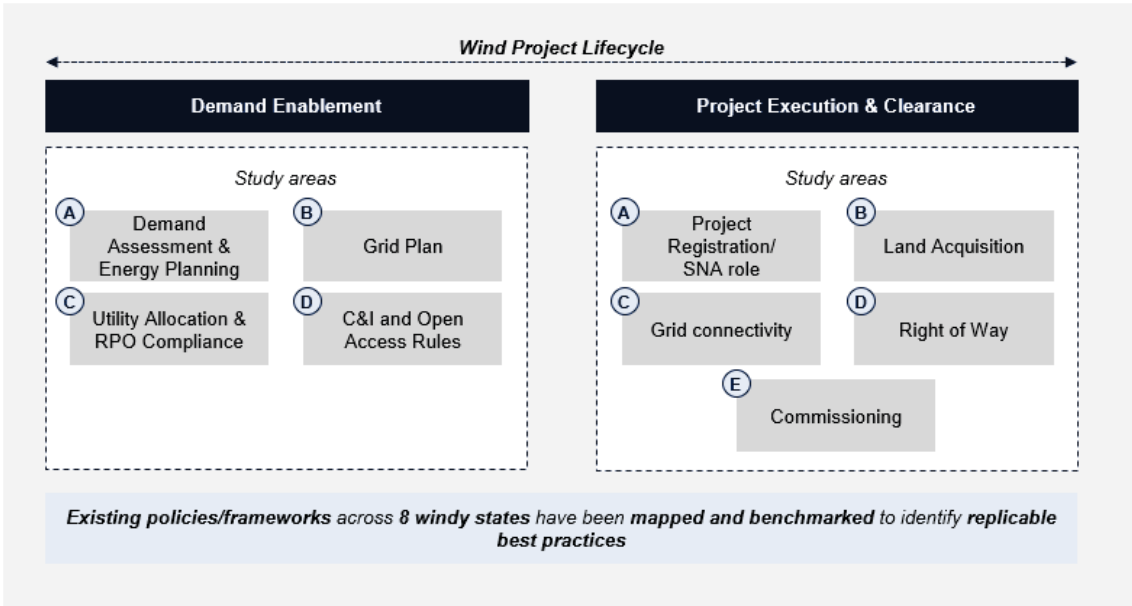
- Conduct a comprehensive, state-by-state regulatory mapping and analysis of existing wind energy policies across eight major wind-producing and emerging states
- Identify, evaluate, and systematically document successful policy interventions from leading states to serve as blueprints for broader success
- Develop a robust comparative regulatory benchmarking framework covering all critical policy domains from demand assessment to infrastructure creation
- Prepare strategic, actionable recommendations and draft model guidelines for consideration by the MNRE's Interdepartmental and Interstate Task Force
- Provide a strong evidence base and structured analytical inputs to facilitate the effective functioning and swift policy deliberation of the proposed Task Force

3. Approach & Methodology adopted for the study

3.1 Approach & Methodology

To identify the best practices adopted by the states across the lifecycle of the wind project, milestones in project lifecycle has been bifurcated as demand enablement and project execution & clearance. Under each of these categories 4 and 5 study areas respectively have been identified. Then for each study area key parameters have been determined. For each of these parameters existing practices across 8 windy states have been mapped and benchmarked to identify the best practices.

Figure 4: Study areas analysed across wind project lifecycle



Source: MEC+ Analysis

3.2 Data Collection process

This phase employs a mapping RE plans, wind policies, land rules, and evacuation guidelines from state departments (SNAs, SERCs, STUs, and Revenue) websites and portals on the shortlisted parameters across 9 study areas.

3.3 Scope Boundary

This analysis is bounded along three dimensions.

Sectoral: Onshore wind, wind hybrids, and FDRE projects. Offshore wind, standalone solar, and standalone storage are excluded.

Geographical: Karnataka, Gujarat, Maharashtra, Andhra Pradesh, and Rajasthan, Madhya Pradesh, Tamil Nadu and Telangana- together ~90% of India's onshore wind pipeline. Selection spans mature high-penetration markets and states with untapped potential.

Temporal: Policy review period FY2021 to FY2027. Imminent material changes flagged as forward-looking notes, not evaluated. Regulatory filings carry vintage of May 2026.

The best practice framework is designed as a living instrument - practices will be updated as the policy environment evolves and as consultation inputs helps refine the methodology.

4. Best practice assessment across states

4.1 State wise assessment across study areas

Across India's wind energy sector, regulatory inconsistencies between states have given rise to a set of persistent challenges such as grid construction delays, grid allocation issues, land – RoW & developer related issues, other regulatory issues and PSA signing delays. Collectively, these bottlenecks suppress the conversion of awarded capacity into commissioned projects.

To effectively address structural bottlenecks and accelerate sector growth, this report provides a comprehensive state-wise assessment across nine critical study areas. Through a structured policy analysis, each state is benchmarked against specific parameters and classified into one of three tiers: Best Practice, Partially Aligned to Best Practice, or Significant Gap from Best Practice. By harmonizing these highly successful state level interventions on a national scale, India is positioned toward achieving its 100 GW wind energy deployment target by 2030.

4.2 Demand Enablement

Demand enablement encompasses the strategic state level policy frameworks designed to cultivate and sustain robust market demand for wind energy. This ecosystem is driven by comprehensive long-term energy and grid planning, Renewable Purchase Obligation (RPO) led procurement, and Commercial and Industrial (C&I) and Open Access regulations that empower consumers to directly source wind power. The assessment evaluates the performance of eight prominent wind-rich states across these foundational frameworks.

State benchmarking results reveal a progressive regulatory landscape where most wind rich states have already established well defined policy foundations. Building on this strong baseline, Gujarat sets a strong national benchmark, having best practices already in place across six of the seven parameters. Similarly, states like Telangana have accelerated progress in three parameters while Maharashtra, Andhra Pradesh, Rajasthan, Madhya Pradesh, Karnataka, and Tamil Nadu maintain robust frameworks with best practices in two of the seven parameters.

Table 3: State-wise assessment across Demand Enablement study areas

			Best practice Partially aligned Significant gap							
#	Study Area	Parameter	KA	MH	GJ	RJ	AP	MP	TN	TL
A.	Demand Assessment & Energy Planning	Wind resource assessment (State/NIWE)								
		Wind in long term energy plan								
B.	Grid Plan	Transmission planning for wind								
C.	Allocation and RPO Compliance	Wind utility RPO architecture								
D.	C&I and OA rules	Eligibility								
		Approvals								
		Captive/Group Captive openness and verification								

Source: MEC+ Analysis

4.2.1 Detailed Mapping of Assessment Area – Demand Enablement

A. Demand Assessment & Energy Planning

Demand Assessment & Energy Planning establishes the visibility and certainty of future wind demand, by quantifying state level wind resource potential and embedding wind specific capacity and targets within statutory energy planning frameworks.

The best practices identified for this assessment area holds these characteristics: granularity and transparency of resource assessment, statutory embedment of wind-specific targets and refresh cycles within energy planning frameworks

Existing Practice across states:

- **Wind Resource Assessment:** Most states adopt the NIWE national study. Karnataka has gone further by commissioning a taluka-level study with NIWE and placing it in the public domain, and Maharashtra has done the same at the district level. Granular, state-led identification of wind potential enables faster site identification and accelerates the conversion of identified potential into operational capacity, shortening pre-development timelines.
- **Long Term energy planning:** All assessed states successfully codify required wind capacity within their Resource Adequacy Plans (RAP). Building on this strong foundation, seven of the eight states demonstrate best practices by actively refreshing their Renewable Energy (RE) plans on a rolling 5-year or 10-year cycle. A transparent and periodically refreshed pipeline of this nature builds robust investor confidence to realise state potential

Table 4: State- Wise Assessment of Demand Assessment & Energy Planning

Best practice Partially aligned Significant gap		
State / Parameter	Wind resource assessment (State/NIWE)	Wind in long term energy plan
Karnataka	- Taluka level study with NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Maharashtra	- District level study with NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Gujarat	- State adopts study done by NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Rajasthan	- State adopts study done by NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Andhra Pradesh	- State adopts study done by NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Madhya Pradesh	- State adopts study done by NIWE - Public access to the report	- Rolling 5 yr frequency of RE plan - Required wind capacity in RAP document
Tamil Nadu	- State adopts study done by NIWE - Public access to the report	- No frequency of RE plan - Required wind capacity in RAP document
Telangana	- State adopts study done by NIWE - Public access to the report	- Rolling 10 yr frequency of RE plan - Required wind capacity in RAP document

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 5: Best practices across states - Demand Assessment & Energy Planning

Parameter	Best practice identified	State and relevant policy
Wind resource assessment (State/NIWE)	- Publish a taluka-level GIS-based study, refresh it every three years - Provide open public access through a state portal that integrates NIWE data with privately commissioned WRA studies	- Karnataka: KREDL wind resource assessment studies with NIWE¹ - Maharashtra: MEDA wind resource assessment studies with NIWE²
Wind in long term energy plan	- Notify an explicit wind sub-target within the state RE plan - Maintain a rolling five-year planning horizon - Assign wind a defined capacity credit in DISCOM Resource Adequacy filings	- Karnataka: State RE policy 2022-27, Clause 3.2 and RAP document¹ - Maharashtra: State RE policy Section 3(a), 3(d) and RAP document² - Gujarat: State RE policy and GUVNL RAP document – section 2.5, 2.6³ - Rajasthan: Integrated Clean Energy Policy 2024⁴ - Andhra Pradesh: Integrated Clean Energy Policy⁵ - Madhya Pradesh: State RE policy and RAP document⁶

¹Karnataka: Section 5.1.1 A; ²Maharashtra: Section 5.2.1 A; ³Gujarat: Section: 5.3.1 A; ⁴Rajasthan: Section 5.4.1 A;

⁵Andhra Pradesh: Section 5.5.1 A; ⁶Madhya Pradesh: Section 5.6.1 A; ⁷Telangana: Section 5.8.1 A

Parameter	Best practice identified	State and relevant policy
		Telangana: Clean and Green Energy Policy⁸

Source: MEC+ Analysis

B. Grid Plan

A grid plan for wind transmission is a structured layout of transmission lines and substations designed to connect wind farms to the main power grid efficiently, ensuring evacuation readiness aligns with upcoming wind capacity addition.

The best practice identified for this assessment area holds these characteristics: horizon and refresh cadence of the grid plan and granularity through substation-level detail for RE integration.

Existing Practice across states:

- Transmission Planning for wind:** While all assessed states publish foundational State Transmission Utility (STU) plans, the most effective frameworks elevate developer confidence by providing highly granular, actionable grid data. Setting the benchmark for best practice, Gujarat, Madhya Pradesh, and Rajasthan publish five-year rolling STU plans that explicitly include substation-wise details. Going even further, Gujarat and Madhya Pradesh detail both substation buildouts and indicative available connectivity margins. Disclosing transmission plans at this level of transparency empowers developers to directly align project siting with confirmed evacuation availability, significantly reducing execution risks and accelerating deployment timelines.

Table 6: State- Wise Assessment of Grid Plan

State Parameter	Transmission planning for wind	Best practice Partially aligned Significant gap		
Karnataka	3 yr rolling capex plan is available - Substation -wise details are not mentioned			
Maharashtra	10 yr plan rolling STU plan is available - Substation -wise details are not mentioned			
Gujarat	5 yr rolling STU plan with subs. buildout is available - Substation list and indicative available margin is published			
Rajasthan	5 yr rolling STU level plan is available - Substation wise details are mentioned			
Andhra Pradesh	5 yr plan STU plan is available - Substation -wise details are not mentioned			
Madhya Pradesh	5 yr rolling STU plan with subs. buildout is available - Substation list and indicative available margin is published			
Tamil Nadu	- STU level plan available - Substation -wise details are not mentioned			
Telangana	5 yr capex plan - Substation -wise details are not mentioned			

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 7: Best practices across states - Grid Plan

Parameter	Best practice identified	State and relevant policy
Transmission planning for wind	- Prepare a 5-year rolling STU plan with substation buildout, - Publish substation list and indicative available margin for RE integration	- Gujarat: STU transmission plan³ - Rajasthan: STU transmission plan (RVPN 2375/2025) and Investment plan⁴ - Madhya Pradesh: Capital Investment Plan for transmission⁶

Source: MEC+ Analysis

³Gujarat: Section: 5.3.1 B; ⁴Rajasthan: Section 5.4.1 B; ⁶Madhya Pradesh: Section 5.6.1 B

C. Utility Allocation and RPO Compliance

Utility allocation, and RPO compliance collectively establish the procurement architecture by assigning DISCOMs as power procurers under agreed terms, and ensuring obligated entities meet mandated renewable purchase targets through wind energy.

The best practice for this assessment area holds these characteristics alignment of state RPO architecture with central MoP targets, and transparency through public reporting of compliance.

Existing Practice across states:

- Wind RPO architecture:** All eight assessed states demonstrate strong best practices by aligning their wind Renewable Purchase Obligations (RPO) with the Ministry of Power (MoP) trajectory, establishing a solid baseline of regulatory consistency. While all states publish compliance directly within their tariff orders, Gujarat elevates this standard even further by issuing a dedicated annual RPO compliance report. Providing a standalone, regularly updated compliance report offers developers, off-takers, and financiers a highly transparent view of the state's demand pipeline. This proactive approach builds robust investor confidence by signalling strict regulatory tracking, ultimately accelerating procurement decisions and project pipeline development.

Table 8: State- Wise Assessment of Utility Allocation and RPO Compliance

State / Parameter	Wind RPO architecture	Best practice Partially aligned Significant gap		
Karnataka	- Wind RPO aligned with MoP - Compliance published in tariff order			
Maharashtra	- Wind RPO aligned with MoP - Compliance published in tariff order			
Gujarat	- Wind RPO aligned with MoP - Publish annual compliance report			
Rajasthan	- Wind RPO aligned with MoP - Compliance published in tariff order			
Andhra Pradesh	- Wind RPO aligned with MoP - Compliance published in tariff order			
Madhya Pradesh	- Wind RPO aligned with MoP - Compliance published in tariff order			
Tamil Nadu	- Wind RPO aligned with MoP - Compliance published in tariff order			
Telangana	- Wind RPO aligned with MoP - Compliance published in tariff order			

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 9: Best practices across states - Utility Allocation and RPO Compliance

Parameter	Best practice identified	State and relevant policy
Wind RPO architecture	- Notify a wind-specific RPO trajectory aligned with MoP rules - Publish public annual reports for compliance by all obligated stakeholders of state	All states have same practice¹

Source: MEC+ Analysis

D. C&I and Open Access rules

Open Access rules are regulations that enable non-utility wind power producers to transmit electricity through the grid to C&I consumers by paying applicable wheeling, banking, and transmission charges.

The best practice identified for this assessment area holds these characteristics: inclusive eligibility across consumer and captive categories, speed and digitisation of the approval process, and codified governance of captive and group captive arrangements.

¹Karnataka: Section 5.1.1C; Maharashtra: Section 5.2.1C; Gujarat: Section: 5.3.1C; Rajasthan: Section 5.4.1C; Andhra Pradesh: Section 5.5.1C; Madhya Pradesh: Section 5.6.1C; Tamil Nadu: Section 5.7.1; Telangana: Section 5.8.1C

Table 11: Best practices across states - C&I and Open Access rules

Parameter	Best practice identified	State and relevant policy
Eligibility	- Notify Consumer who has contracted demand or sanctioned load of Hundred (100) KW or more, either through single connection or through multiple connections aggregating Hundred (100) kW or more located in same electricity division of a distribution licensee - No capacity restriction for setting up of RE projects for captive use with respect to the consumer's contract demand/sanctioned load (kW/MW, KVA/MVA) with Discoms	- Karnataka: KERC OA Regulations 2025, Regulation 1(k)¹ - Maharashtra: RE & ESS Policy 2025-26 to 2035-36, Section 7.2.1² - Gujarat: GERC GEOA Regulations 2024 - Regulation 9(II), Regulation 13(II) Sr. 5 (system study proviso), Regulation 14³ - Andhra Pradesh: APERC GEOA Regulation 2024 - (Reg. No. 3 of 2024), Clause 2.1(f)⁵ - Madhya Pradesh: MPERC TC for OA 2021, Regulation 3.3⁶ - Tamil Nadu: The Tamil Nadu Electricity Regulatory Commission (Terms and conditions for Green Energy open Access) Regulations, 2025-12(1)⁷ - Telangana: Telangana State Electricity Regulatory Commission (Terms and conditions of Open Access), Regulation, 2023 clause 8.1⁸
Open access approvals	- Notify GEOA approvals for grant of open access within 15 days through a single-window online portal as per central GEOA notification - Upon receipt from CNA (Zero date), SNA provides immediate electronic acknowledgement - Accepts the application within 3 working days after confirming all documents, processing fee, and BG are furnished, forwards to TSTRANSCO/DISCOMs within 5 working days for system availability check	- Gujarat: GERC GEOA 2024 -Regulation 13(II)³ - Telangana: Telangana State Electricity Regulatory Commission Terms and Conditions of Open Access, Regulation, 2024 Clause-14.2⁸
Captive/Group Captive openness and verification	- Notify separate document with clearly defined captive criteria in line with electricity rules - Notify process for annual audit and relevant formats - Notify procedure for transfer of SPV	- Karnataka: KERC Verification of Captive Status of Generating Plants regulations¹ - Gujarat: GERC GEOA 2024 – Regulations 9(V) – 9(VIII), Schedule I paras 1-11³

Source: MEC+ Analysis

4.3 Project Execution and Clearance

Project execution and clearance encompass the on-ground stages through which a wind power project moves from registration to commissioning. This ecosystem is structured around fifteen parameters grouped under five foundational study areas: Project Registration and SNA Role, Land Acquisition, Grid Connectivity, Right of Way, and Commissioning. The assessment evaluates the performance of eight prominent wind-rich states across these critical on-ground frameworks.

State benchmarking results reveal a progressive regulatory landscape where all wind-rich states have successfully established defined project execution practices as a strong baseline. Building on this solid foundation, Maharashtra sets the national benchmark with best practices across twelve of the fifteen parameters, closely followed by Gujarat with eleven. Demonstrating steady advancement, Andhra Pradesh and Rajasthan have secured best practices in five parameters, followed closely by Telangana with four parameters, while other states continue to follow traditional established practices.

¹Karnataka: Section 5.1.1 D; ²Maharashtra: Section 5.2.1 D; ³Gujarat: Section: 5.3.1 D; ⁵Andhra Pradesh: Section 5.5.1 D; 28

⁶Madhya Pradesh: Section 5.6.1 D; ⁷Tamil Nadu: Section 5.7.1 D; ⁸Telangana: Section 5.8.1 D

Table 12: State-wise assessment across Project Execution and Clearance study areas

			■ Best practice ■ Partially aligned ■ Significant gap							
#	Study Area	Parameter	KA	MH	GJ	RJ	AP	MP	TN	TL
A.	Project Registration / SNA role	Single window for clearances								
		Digitized/online portal								
		Documentation								
B.	Land Acquisition	Land allotment								
		Land-use conversion								
		Statutory Approvals								
C.	Grid Connectivity	Connectivity Application and Eligibility								
		Feasibility Assessment & Connectivity Grant								
		Transfer of Connectivity								
D.	Right of Way	Statutory Approvals								
		Dispute Resolution & Closure								
E.	Commissioning	Electrical & Safety Approvals								
		Metering, Protection & SCADA Compliance								
		Grid Synchronization Approval & Trial Run								
		Commissioning Certification & COD Declaration								

Source: MEC+ Analysis

4.3.1 Detailed Mapping of Assessment Area – Project Execution and Clearance

A. Project Registration

Project Registration marks the formal entry point for wind developers into the state's regulatory framework, establishing land and grid readiness before project setup.

The best practice identified for this assessment area holds these characteristics: facilitation through a single window with published process flow, digitisation via an accessible online registration portal, and clarity of documentation requirements covering land and grid readiness.

Existing Practice across states: Across the eight wind-rich states assessed, project registration ease is evaluated across three dimensions.

- **Single window:** Establishing a robust baseline, 5 states have successfully set up single-window clearances for developer engagement. Setting the national benchmark, Maharashtra and Gujarat have been additionally publishing process flowcharts and user manuals. A documented single window provides developers with complete clarity of process, ensures they know exactly which agency to approach, eliminates time spent navigating between departments and accelerates project execution timelines
- **Digitized / online portal:** 7 states have successfully operationalized digital registration portals. Establishing this digital channel as a widespread best practice vastly improves the ease of the approval process and effectively shortens the overall registration phase of the project.
- **Documentation:** States are progressively optimizing documentation requirements to facilitate smoother project kick-offs. Karnataka, Gujarat, Rajasthan, and Andhra Pradesh demonstrate exemplary best practices by not mandating land ownership and grid connectivity proofs at the time of

registration. This forward-looking approach drives reduction in project execution timelines, as land and grid activity can proceed in parallel to the project registration process.

Table 13 : State-wise assessment across Project Registration

State / Parameter	Best practice			Partially aligned		Significant gap	
	Single window for clearances	Digitized/online portal	Documentation				
Karnataka	• Multiple stakeholders for clearances	• Manual process defined	• Ownership of land and grid connectivity is not required				
Maharashtra	• Single window for clearances exists • Flowchart for process/user manual	• Digital registration portal exists	• Proof of land identified and grid connectivity document required				
Gujarat	• Single window for clearances exists • Flowchart for process/user manual	• Digital registration portal exists	• Ownership of land and grid connectivity is not required				
Rajasthan	• Single window for clearances exists • No flowchart for process/user manual	• Digital registration portal exists	• Ownership of land and grid connectivity is not required				
Andhra Pradesh	• Single window for clearances exists • No flowchart for process/user manual	• Digital registration portal exists	• Ownership of land and grid connectivity is not required				
Madhya Pradesh	• Multiple stakeholders for clearances	• Digital registration portal exists	• Ownership of land and grid connectivity is not required				
Tamil Nadu	• This step is not required in the state						
Telangana	• Multiple stakeholders for clearances	• Digital registration portal exists	• Land sale deed and nearest substation required				

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 14: Best practices across states - Project Registration

Parameter	Best practice identified	State and relevant policy
Single window	- Establish a unified single-window registration mechanism integrating SNA and utility approvals under a single point of accountability with defined turnaround timelines - To ensure clarity and standardized execution, visually map project process steps using a flowchart and provide a corresponding user manual for each step	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³
Digitized/online portal	Deploy an end-to-end digital registration portal enabling online submission, real-time status tracking, and digital issuance of project registration certificates	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal³ - Rajasthan: RAJ Nivesh portal Rajasthan⁴ - Andhra Pradesh: Department of Industries Portal Andhra Pradesh⁵ - Madhya Pradesh: SNA maintained portal⁶ - Telangana: TGREDCO Portal⁸
Documentation	To prevent overarching project delays, ensure project registration documents clearly identify the intended land parcels and grid substation, rather than waiting for finalized grid connectivity	- Karnataka: RE Policy 2022-27, Clause 5.1 & 6.1(a)¹ - Gujarat: Operational guidelines under Integrated RE policy Clause 5.2.2.7, 4.5(i)³ - Rajasthan: Procedure for Grant of Connectivity to Intra-State Transmission System effective 01 February 2026, Clause 2.2, 2.6 and Annexure 11 Clause B(5) and B(7)⁴

¹Karnataka: Section 5.1.2 A; ²Maharashtra: Section 5.2.2 A; ³Gujarat: Section: 5.3.2 A; ⁴Rajasthan: Section 5.4.2 A; ⁵Andhra Pradesh: Section 5.5.2 A; ⁶Madhya Pradesh: Section 5.6.2 A; ⁸Telangana: Section 5.8.2 A

Parameter	Best practice identified	State and relevant policy
		• Andhra Pradesh: Integrated Clean Energy Policy 2024 - Orders Issued - Clause 5.5 (a)–(g), Clause 17.12 (Allotment milestones a3, a4); Operational Guidelines, Clause 8(a)⁵ • Madhya Pradesh: MP RE policy, 2.2.2, 3.1.2, 3.1.3, 3.1.4, 3.2.3, 3.1, annexure 2⁶

Source: MEC+ Analysis

B. Land Acquisition

Land Acquisition encompasses land allotment, land-use conversion, and statutory approvals collectively determining site readiness and execution velocity for wind projects -spanning structured allotment frameworks across land categories, time-bound conversion mechanisms, and integrated statutory clearance pathways.

The best practice identified for this assessment area holds these characteristics: land allotment framework for RE parks, speed of land-use conversion, and integration of statutory approvals.

Existing Practice for states:

- **Land allotment:** Establishing a strong foundation, all evaluated states have clearly defined their land allotment processes across various land categories. Setting a national benchmark for progressive policy, Maharashtra, Gujarat, Rajasthan, and Madhya Pradesh have gone above and beyond by explicitly including provisions for government land dedicated to RE parks and zones. This strategic allocation provides developers with a larger, pre-identified pool of available land to choose from which shortens land identification and acquisition phase
- **Land-use conversion:** Showcasing a strong commitment to streamlining timelines, all states have defined process-led conversion route for land use conversion. Karnataka, Maharashtra, Rajasthan, Andhra Pradesh, and Telangana lead the way with best practices by successfully implementing the deemed approval route. This proactive approach eliminates bureaucratic delays and ensures the faster land acquisition process.
- **Statutory approvals:** States are actively modernizing the clearance ecosystem to improve developer experience. Setting the best practice, Maharashtra and Andhra Pradesh have established comprehensive single-window online portals, while Telangana has also successfully rolled out a dedicated online portal. Transitioning to a digital clearance ecosystem provides developers with a single, trackable channel for all statutory approvals, bringing transparency and faster land acquisition.

Table 15: State-wise assessment across Land Acquisition

Best practice

Partially aligned

Significant gap

State / Parameter	Land Allotment	Land-use conversion	Statutory Approvals
Karnataka	• Allotment process defined for land categories	• Deemed approval	• Process defined with approvals and stakeholders
Maharashtra	• Allotment process defined for land categories • Provision of government land for RE park/zones	• Deemed approval	• Single window online portal
Gujarat	• Allotment process defined for land categories • Provision of government land for RE park/zones	• Process defined for conversion	• Nodal agency coordination
Rajasthan	• Allotment process defined for land categories • Provision of government land for RE park/zones	• Deemed approval	• Process defined with approvals and stakeholders

⁵Andhra Pradesh: Section 5.5.2 A; ⁶Madhya Pradesh: Section 5.6.2 A

State / Parameter	Land Allotment	Land-use conversion	Statutory Approvals
Andhra Pradesh	• Allotment process defined for land categories	• Deemed approval	• Single window online portal
Madhya Pradesh	• Allotment process defined for government land • Provision of government land for RE park/zones	• Process defined for conversion	• Nodal agency coordination
Tamil Nadu	• Allotment process defined for land categories	• Process defined for conversion	• Approval mechanism not defined
Telangana	• Allotment process defined for land categories	• Deemed approval	• Online portal for approvals

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 16: Best practices across states - Land Acquisition

Parameter	Best practice identified	State and relevant policy
Land allotment	• Notify a structured land allotment framework covering government wasteland, revenue land, and private land, with defined eligibility, pricing, and allocation procedures • Provision for land under RE park development	• Maharashtra: RE&ESS Policy 2025-26 to 2035-36, Sections 6.1, 6.2, 6.4² • Gujarat: Guidelines for Renewable Energy Project Development Clause-9.1³ • Rajasthan: Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(i) (ii) (iii), 16.1 and land revenue rules, 2025 Section 2³ • Madhya Pradesh: MP RE policy - 2025 clause 3.1, 12.2, 12.3⁶
Land-use conversion	• Notify clear land-use conversion provisions with online application, defined timelines, and deemed approval in case of delays more than 30 days	• Karnataka: Land reforms and certain other law (amendment) bill, 2025, Clause 95(ii)¹ • Maharashtra: Amendment to Maharashtra Land revenue code² • Rajasthan Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(iv)⁴ • Andhra Pradesh: Integrated Clean Energy Policy 2024 - Clause 5.13⁵ • Telangana: Clean and green energy policy – section 9.7 (i)⁸
Statutory Approvals	• Single window/online portal for approvals, clearance, change of land use	• Maharashtra: RE&ESS Policy 2025-26 to 2035-36, Section 8.1² • Andhra Pradesh: Integrated Clean Energy Policy 2024 - Clauses 5.16, 17.7, and 17.10⁵ • Telangana: TG-ipass clearances and approval table⁸

Source: MEC+ Analysis

C. Grid Connectivity

Grid Connectivity governs the developer's interface with the transmission network spanning application and eligibility, feasibility assessment, and transfer of connectivity rights.

The best practice identified for this assessment area holds these characteristics: accessibility of the connectivity application through a single window or digital interface, time-bound feasibility assessment with defined turnaround for grant of connectivity, and codified flexibility in transfer of connectivity rights through a defined NOC-led procedure.

Existing practice for states:

- **Connectivity application & eligibility:** While several states are actively working toward digital integration, Maharashtra, Gujarat, Rajasthan, and Andhra Pradesh have established a strong national benchmark by successfully operationalizing single-window or digital interfaces for connectivity applications. Transitioning to a digital application channel provides developers with a

- **Feasibility assessment & connectivity grant:** Demonstrating a strong commitment to efficiency, all evaluated states have established timelines for issuing connectivity grants. Setting best practices for timeliness, Telangana leads the states by mandating connectivity grants within 14 days, closely followed by Maharashtra, Gujarat, and Tamil Nadu at 30 days. Time bound grants ensure reduced delay due to clear timelines, providing developers with upfront, dependable evacuation arrangements, effectively removing uncertainty around grid availability, and shortening the wait between application and project tie-in.
- **Transfer of connectivity:** States are progressively recognizing the need for commercial flexibility throughout the project lifecycle. Setting the best practice, Maharashtra has clearly defined transfer procedure backed by a No Objection Certificate (NOC) mechanism, while Gujarat and Andhra Pradesh demonstrate forward-looking alignment by permitting transfers on an exception basis. A well-defined transfer mechanism gives developers and financiers the commercial agility to restructure project ownership or consolidate connectivity rights without losing their evacuation slot, ultimately driving enhanced investor confidence.

Table 17: State-wise assessment across Grid Connectivity

			Best practice	Partially aligned	Significant gap
State / Parameter	Connectivity Application & Eligibility	Feasibility Assessment & Connectivity Grant	Transfer of Connectivity		
Karnataka	• Single window/ digital interface not present	• Grant of connectivity issued within 60 days	• Provisions are not defined		
Maharashtra	• Single window/ digital interface	• Grant of connectivity issued within 30 days	• Clearly defined procedure with NOC		
Gujarat	• Single window/ digital interface	• Grant of connectivity issued within 30 days	• Generally, not transferable but exceptions allowed		
Rajasthan	• Single window/ digital interface present	• Grant of connectivity issued within 45 days	• Transfer not allowed		
Andhra Pradesh	• Single window portal	• Grant of connectivity issued within 85 days	• Generally, not transferable but exceptions allowed		
Madhya Pradesh	• Single window/ digital interface not present	• Grant of connectivity issued within 60 days	• Transfer not allowed		
Tamil Nadu	• Single window/ digital interface not present	• Grant of connectivity issued within 30 days	• Provisions are not defined		
Telangana	• Single window/ digital interface not present	• Grant of connectivity issued within 14 days	• Provisions are not defined		

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 18: Best practices across states - Grid Connectivity

Parameter	Best practice identified	State and relevant policy
Connectivity Application and Eligibility	Operate a fully digital connectivity application process through single window portal administered by the STU with transparent eligibility criteria and queue management	- Maharashtra: REGRID MEDA single window portal for RE projects² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³ - Rajasthan: RREC online portal for RE projects⁴ - Andhra Pradesh: NREDCAP Single Unified Portal⁵
Feasibility Assessment and Connectivity Grant	- Grant of Connectivity is issued by STU/DISCOM within 30 days from application receipt, subject to feasibility - Provision for grid connectivity under RE park development	- Maharashtra: Revised Procedure for grant of grid connectivity to In-STS, Section 7² - Gujarat: Procedure for grant of grid connectivity to In-STS, Section 7³ - Tamil Nadu: TNERC connectivity and Intra-State OA regulations, 2014, Section 6⁷

²Maharashtra: Section 5.2.2 C; ³Gujarat: Section: 5.3.2 C; ⁴Rajasthan: Section 5.4.2 C; ⁵Andhra Pradesh: Section 5.5.2 C; 33

⁷Tamil Nadu: Section 5.7.2 C

Parameter	Best practice identified	State and relevant policy
Transfer of Connectivity	Notify clearly defined procedure with NOC of SNA requirement for transfer of connectivity with clear definition of exception cases	- Telangana: Clean and green energy policy – 9.4 and Connection Agreement – 2.2⁸ - Maharashtra: Revised Procedure for grant of grid connectivity to In-STS, Clause 6.9.1, 6.9.3²

Source: MEC+ Analysis

D. Right of Way

Right of Way is the process of obtaining legal permission to use land for installing and operating wind project infrastructure such as transmission lines, access roads, and cable routes.

The best practice identified for this assessment area holds these characteristics: facilitation of statutory approvals through a single window with documented process and structured escalation in dispute resolution with notified timelines.

Existing Practice across states:

- Statutory approvals:** While several states currently navigate Right of Way (RoW) clearances through traditional channels, Gujarat and Telangana have taken positive, proactive steps to streamline the process. Setting the ultimate national benchmark, Gujarat has launched a comprehensive single-window portal fully supported by a process flowchart and user manual. Transitioning to a digital, walk-through-style approval channel guarantees faster execution, providing developers with a single point of submission and tracking. This approach shortens the period between line route finalization and the start of stringing work.
- Dispute resolution & closure:** States are progressively working to establish structured frameworks to address Right of Way challenges constructively. Madhya Pradesh has formally defined its dispute resolution framework, while Karnataka and Rajasthan assist developers by notifying responsible district authorities and outlining broad operational guidelines, respectively. Maharashtra stands out as the national best practice, having implemented a highly effective structured, tier-wise escalation pathway complete with notified resolution timelines. Establishing these structured resolution and escalation pathways guarantees critical transparency and faster project execution.

Table 19 : State-wise assessment across Right of Way

Best practice Partially aligned Significant gap		
State / Parameter	Statutory Approvals	Dispute Resolution & Closure
Karnataka	- Single window portal not present - Flowchart for process/user manual not available	District authorities defined, timelines are not defined
Maharashtra	- Single window portal not present - Flowchart for process/user manual not available	Structured tier wise escalation pathway with notified resolution timelines
Gujarat	- Single window portal - Flowchart for process/user manual	Dispute resolution framework not defined
Rajasthan	- Single window portal not present - Flowchart for process/user manual not available	Broad framework with no timelines
Andhra Pradesh	- Single window portal not present - Flowchart for process/user manual not available	Dispute resolution framework not defined
Madhya Pradesh	- Single window portal not present - Flowchart for process/user manual not available - Approving authority defined	Dispute resolution framework defined
Tamil Nadu	Single window portal not present	Dispute resolution framework not defined

²Maharashtra: Section 5.2.2 C; ⁸Telangana: Section 5.8.2 C

State / Parameter	Statutory Approvals	Dispute Resolution & Closure
	Flowchart for process/user manual not available	
Telangana	- Central framework adopted - Online portal for clearance	Dispute resolution framework not defined

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 20: Best practices across states - Right of Way

Parameter	Best practice identified	State and relevant policy
Statutory Approvals	- Deploy online single window registration portal for RoW grant with defined timelines - To ensure clarity and standardized execution, visually map project process steps using a flowchart and provide a corresponding user manual for each step	Gujarat: RoW Gujarat portal³
Dispute Resolution & Closure	Define a structured tier wise escalation pathway from utility level to district administration with notified resolution timelines	Maharashtra: RoW policy 2022²

Source: MEC+ Analysis

E. Commissioning

Commissioning is the stage at which a wind turbine or project is fully installed, tested, and certified to begin commercial electricity generation.

The best practice identified for this assessment area holds these characteristics: digitisation of approvals and certifications through online portals and policy defined process across electrical, metering, synchronisation, and certification stages.

Existing Practice across states:

- Electrical & safety approvals (CEIG & statutory):** Establishing a strong operational baseline, all eight assessed states have successfully defined their CEIG approval processes. Setting the best practice, Maharashtra, Gujarat, and Telangana have processed these approvals through dedicated online portals. Rajasthan has introduced best practice by implementing deemed approval for 33kV inspections. Transitioning to an online CEIG channel and deemed inspection approvals ensures faster timeline, providing developers with a seamless digital route for submission, inspection scheduling, and approval tracking. This approach brings predictability to inspection schedules and shortens the gap between project site readiness and final electrical clearance.
- Metering, protection, SCADA compliance and grid synchronisation approvals:** While most states currently manage this compliance through physical submission channels, Maharashtra and Gujarat have established best practices by operating dedicated online portals for compliance submission and verification. This approach removes coordination delays across multiple agencies and shortens approval timelines.
- Commissioning certification & COD declaration:** Ensuring a structured finish to project execution, all states have defined processes for final certification. Showcasing the best practice, Maharashtra and Gujarat are issuing commissioning certificates through an online portal. Implementing an online certification channel secures a faster timeline through a transparent, highly tracked, and time-bound issuance route. This approach shortens the gap between trial run completion and formal declaration of commercial operation.

²Maharashtra: Section 5.2.2 D; ³Gujarat: Section 5.3.2 D

Table 21 : State-wise assessment across Commissioning

■ Best practice ■ Partially aligned ■ Significant gap				
State / Parameter	Electrical & Safety Approvals - CEIG & Statutory	Metering, Protection & SCADA Compliance	Grid Synchronization Approval & Trial Run	Commissioning Certification & COD Declaration
Karnataka	- CEIG approval process defined - Physical submission	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission
Maharashtra	- CEIG approval process defined - Online portal	Online portal	Online portal for grid synchronization	Online portal for commissioning certificate
Gujarat	- CEIG approval process defined - Online portal	Online portal	Online portal for grid synchronization	Online portal for commissioning certificate
Rajasthan	- CEIG approval process defined - Deemed approval for 33kV inspection	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission
Andhra Pradesh	- CEIG approval process defined - Physical submission	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission
Madhya Pradesh	- CEIG approval process defined - Physical submission	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission
Tamil Nadu	- CEIG approval process defined - Physical submission	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission
Telangana	- CEIG approval process defined - Online portal	Process is defined with physical submission	Process is defined with physical submission	Process is defined with physical submission

Source: MEC+ Analysis

Post assessment of the 8 states, following are the identified best practice across parameter:

Table 22: Best practices across states - Commissioning

Parameter	Best practice identified	State and relevant policy
Electrical & Safety Approvals - CEIG & Statutory	- Notify a defined CEIG approval process with clear institutional responsibility split across developer, STU, and SLDC - Online portal for CEIG approvals with defined manual and steps - Exemption in mandatory inspection by CEIG for electrical installations up to 33kV	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³ - Rajasthan: Energy department notification 15(7) Energy/2026/05515⁴ - Telangana: TG-ipass clearance and other public delivery service point 17⁸
Metering, Protection & SCADA Compliance	Online portal for metering approvals with defined manual and steps	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³
Grid Synchronization Approval & Trial Run	Online process for grid synchronisation approval and trial run procedures with defined SLDC engagement and documentation requirements	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³
Commissioning Certification & COD Declaration	Online commissioning certification defined process through intimation	- Maharashtra: REGRID MEDA portal² - Gujarat: GUVNL Akshay Urja Setu portal for RE projects³

Source: MEC+ Analysis

²Maharashtra: Section 5.2.2 E; ³Gujarat: Section: 5.3.2 E; ⁴Rajasthan: Section 5.4.2 E; ⁸Telangana: Section 5.8.2 E

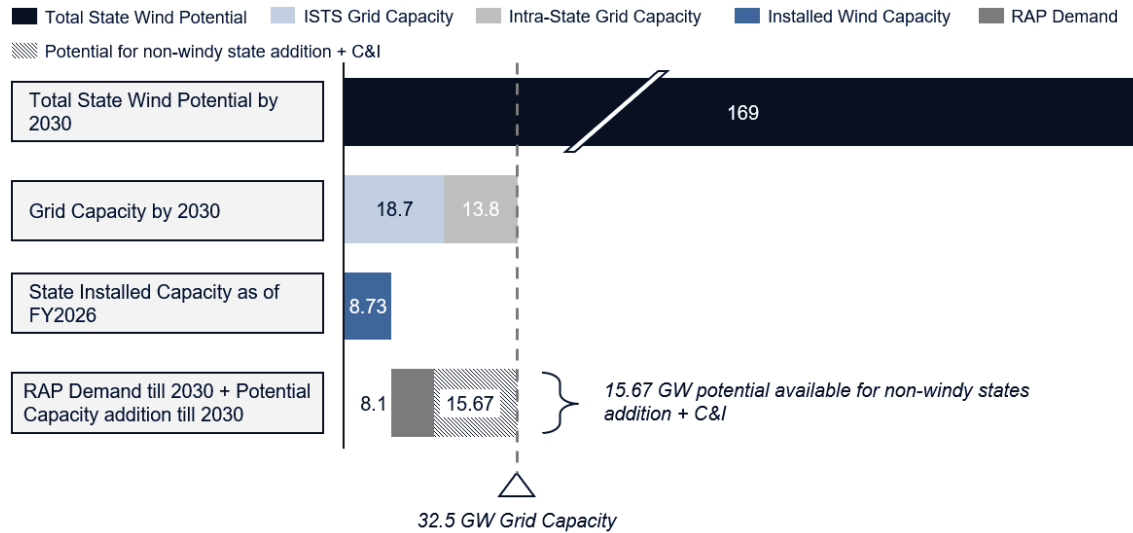
5. Annexures

5.1 Karnataka

5.1.1 Demand Enablement

Karnataka holds 169 GW of total wind potential, with 8.73 GW already installed. Backed by 32.5 GW of planned grid capacity, this infrastructure comfortably meets the 8.1 GW demanded by the state's Resource Adequacy Plan (RAP), while unlocking an additional 15.67 GW to serve C&I consumers and export to non-windy states.

Figure 5: Karnataka wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Karnataka has conducted taluk and district-level wind resource assessments through KREDL and NIWE, last updated in 2022. The state's RE Policy 2022-27 outlines a five-year renewable energy plan, and the RAP defines planned wind capacity aligned with Karnataka's 2030 RPO requirements.

Table 23: Karnataka Demand Assessment

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment (State/NIWE)	Wind Resource Mapping	• State specific Wind resource assessment study has been conducted	Report Taluk Wise By KREDL and NIWE
	Frequency of assessment	• No frequency of updated releases mentioned, last update was in 2022	
	Geographical Level of depth of assessment	• Taluk Level and district level sites identified by NIWE for Karnataka with public access of the document	
Wind in long term energy plan	Frequency of plan	• Rolling plan and released in RE policy for 5 years, current time-period 2022-27	Karnataka Renewable Energy Policy 2022-27, Clause 3.2 RAP Document Table 4, and Table 10
	Wind capacity defined in RAP document	• Planned and required Wind capacity mentioned in the RAP	
	Is RAP aligned with RPO	• State RAP is aligned with State's 2030 RPO Requirements	

B. Grid Plan

Karnataka releases a 3-year Capex plan containing grid expansion plans, it is yet to release a wind-specific intrastate transmission plan covering dedicated zones, and wind-specific pooling substations with RE integration

Table 24: Karnataka Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	• Capex plan available for 3 Years	<u>Annual budget for KPTCL in ARR till 2027</u>
	Substation list for RE integration with annual progress	• No list of pooling substations for RE integration with progress is mentioned	

C. Utility Allocation & RPO Compliance

The state's RPO targets align with centrally prescribed levels, and DISCOMs have exceeded wind RPO requirements, procuring an average of 7% of energy from wind in FY24. RPO and DISCOM procurement performance are reported annually.

Table 25: Karnataka Utility Allocation & RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	• States RPO targets are aligned with the centrally prescribed targets	<u>KERC (Procurement of Energy from Renewable Sources) (Eleventh Amendment) Regulations, 2025, Clause 2</u>
	DISCOM compliance	• State DISCOMs significantly surpassed their FY25 wind RPO target of 0.67%, successfully procuring 7% of their total energy from wind.	<u>MESCOM performance report, Table 4.6</u>
	Public availability of compliance document	• RPO compliance is directly stated in tariff documents	<u>BESCOM Performance Report, Table 4.6</u> <u>CESC Performance Report, Table 4.6</u> <u>HESCOM Performance Report, Table 4.6</u> <u>GESCOM Performance Report, Table 4.6</u>

D. C&I and Open Access rules

Karnataka's open access framework permits HT / LT consumers from 100 kW and above. Applications are processed within 15 working days from the zero date. Key stakeholders include KPTCL as STU, KSLDC as SNA, ESCOMs as distribution licensees, and QCA as the mandatory coordinating agency. Captive consumers must meet 51% annual self-consumption, with defined audit procedures, and SPV transfer provisions are available.

Table 26: Karnataka C&I Framework and Open Access Rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	• 100 kW and above for HT consumers; 100 kW and above for LT consumers (single or multiple connections in same electricity division)	<u>KERC Terms and Conditions for Open Access Regulations, 2025, Regulation 1(k)</u>
	Contract demand	• Open Access Consumers, the contract demand requirement is 100 kW and above for High Tension (HT) connections, or a sanctioned load	<u>KERC statement of reasons on terms and conditions for open</u>

Parameter	Sub-parameter	State Practice	Policy Name & Clause
		of 100 kW and above for Low Tension (LT) connections. • For Captive Consumers, no contract demand minimum applies - captive consumers shall have no load limit in both HT and LT categories.	<u>access, regulation 2025 – Section 1(k)</u>
Approvals	Timeline	• Post submission of application, bank guarantee and fee on day zero with WBA, STU and distribution license is given in 10 working days and open access/deemed is granted in 15 working days from zero date.	<u>KERC Terms and Conditions for Open Access Regulations, 2025, Regulation 8(ii)</u>
	Additional stakeholder required in the state	• Karnataka introduces KPTCL as STU, KSLDC as SNA, ESCOM as distribution licensee, and QCA as mandatory coordinating agency.	<u>KERC OA Regulations, 2025, Regulations 5, 8(ii); KERC RE DSM Regulations, 2022 (First Amendment), Regulation 2(u)</u>
Captive/Group Captive	Definition/ Verification & Monitoring	• Single captive user/ Co-operative society/ Group Captive- undertaking of 51%+ self-consumption annually; no load limit for captive consumers present in the documents. Defined audit procedure and formats mentioned	<u>Verification of Captive Status of Generating Plants 2024 regulations, clause 4.3; Procedure for data collection and verification of captive status where captive plant is located in Karnataka, 2025</u>
	Transfer of SPV	• Provision for transfer documents required process with time required is mentioned	<u>Procedure for Transfer of wind power project</u>

Table 27: Karnataka DISCOM-wise open Access Charges (FY2025-26)

Category	Sub-category	Unit	BES COM	MES COM	HES COM	GES COM	CESC	Source
Transmission	Transmission Charge	INR/ Unit	1.046	1.046	1.046	1.046	1.046	<u>TRANSMISSION TARIFF FOR THE CONTROL PERIOD FY2025-26 to FY2027-28 Section 6.2.2, 5.3</u>
	Transmission losses	INR/ Unit	0.030	0.030	0.030	0.030	0.030	
Wheeling	Wheeling Charges	INR/ Unit	0.290	0.430	0.370	0.370	0.380	<u>APPROVAL OF ANNUAL REVENUE REQUIREMENT AND Retail Supply Tariff for the control period FY2025-26 to FY2027-28, Section 6.10, 6.12, 6.13, 5.13</u>
	Wheeling losses	INR/ Unit	0.008	0.016	0.017	0.011	0.002	
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/ Unit	1.87	1.87	1.87	1.87	1.87	<u>https://bescom.karnataka.gov.in/uploads/media_to_upload1775021662.pdf</u>
	CSS Charges-Commercial	INR/ Unit	1.96	1.97	1.97	1.97	1.97	
Additional Surcharge SLDC		INR/ Unit	0.40	0.40	0.40	0.40	0.40	
		INR/ Unit (x10 ⁻⁶)	0.652	0.115	0.258	0.158	0.151	

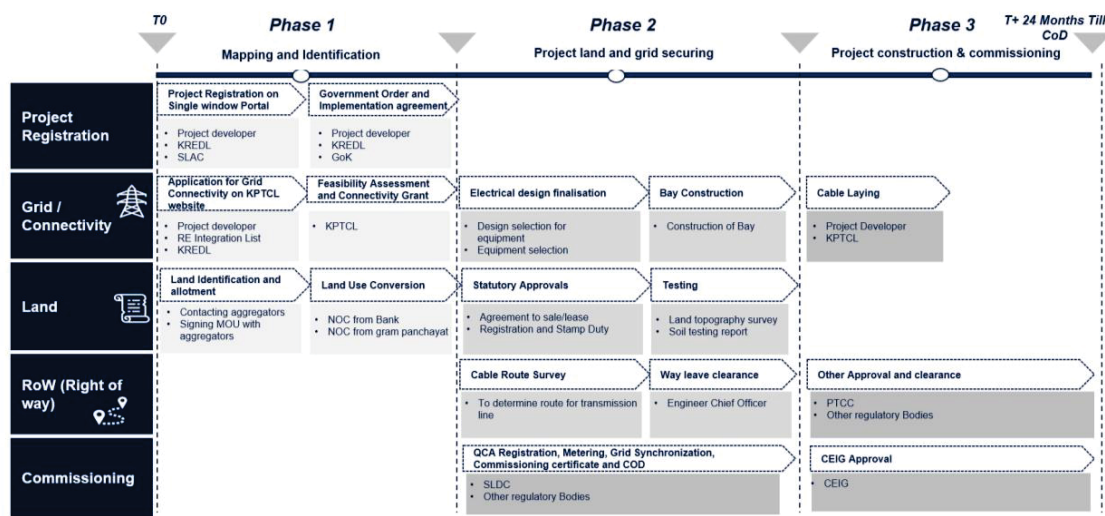
5.1.2 Project Execution

The Karnataka wind project development timeline spans three phases across 24 months to COD.

Phase 1 covers mapping and identification including project registration through KREDL and State level allotment committee, grid connectivity application, land identification with aggregator MOUs, and cable route survey.

Phases 2 and 3 progress through feasibility and connectivity grant from KPTCL, land use conversion and statutory approvals, electrical design and bay construction, cable laying, way leave clearance, and culminate in CEIG approval and QCA registration, metering, grid synchronisation, and COD through SLDC

Figure 6: Karnataka Project Execution Pathway



A. Project Registration

Karnataka operates a single window portal for project approvals. Land applications require submission of break-up details across private, revenue, and forest categories along with WTG coordinates, with land deemed converted upon State Level Allotment Committee (SLAC) or Energy Department NOC. Grid prerequisites involve submission of evacuation feasibility details at the application stage, followed by execution of a connectivity agreement with KPTCL after the Government Order for InSTS.

Table 28: Karnataka Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		No single window interface for project approvals	NA		
Digital Portal		Manual process of project registration	NA		
Documentation	Pre-Requisites for land	- Submit land break-up of Private, Revenue, and Forest with survey numbers and RT&C records to KREDL at application stage. Wind and hybrid projects require WTG co-ordinates on topo sheet. - KREDL forwards land details as part of proposal to SLAC or Energy Department. Land deemed converted after SLAC or Energy Department issues NOC per Revenue Department circulars, Wind up to 2.5 MW 5 acres per WTG, 2.51–4 MW 10 acres per WTG, above 4 MW per RLMM	NA	KREDL, SLAC, GoK	Karnataka RE Policy 2022-27, Clause 6.1(a), 5.1(c.1)(1), (2) and Clause 6.1(a)(5)
	Pre-Requisites for grid	- Basic site and substation details required for evacuation feasibility is requirement at application stage - KREDL includes this in proposal to SLAC or Energy Department. Execute Connectivity Agreement with KPTCL in	NA	KREDL, SLAC, GoK	

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
		KERC-approved format after Government Order for InSTS			

B. Land Acquisition

Karnataka supports five land categories for wind development with defined area norms per turbine capacity. Post-2023, all departmental inputs are consolidated within SLAC, streamlining government land approvals. Deemed land conversion is available within 30 days upon Government Order. Forest and environmental clearances follow central government processes through MoEFCC.

Table 29: Karnataka Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment		5 eligible land categories: private agricultural, private non-agricultural, government revenue, forest dept, and irrigation/industries dept land. - Area norms: 5 acres per turbine up to 2.5 MW; 10 acres per turbine for 2.51 to 4 MW. - Private land: developer negotiates lease or sale directly, independent of SLAC. - Agricultural private land: DC permission before transfer - Government land: KREDL application, SLAC review, Gok GO acts as sanction. Post-2023, all departmental inputs from revenue, forest, water resources, KPCL, KPTCL consolidated within SLAC RE Park: No provision mentioned in RE policy		DC; SLAC; GoK; MoEFCC	Karnataka RE Policy 2022-27, Clause 5.1(b) and Clause 6.2
Land use conversion		- Two routes: formal DC conversion order; or deemed conversion via Gok GO backed by Revenue Dept circulars. - For government land, deemed conversion on GO receipt eliminates separate DC application per parcel	Government Land: 30 Days	DC (formal); Revenue Dept (deemed)	Karnataka RE Policy 2022-27 Clause 5.1(b)(2)(b) - THE KARNATAKA LAND REFORMS AND CERTAIN OTHER LAW (AMENDMENT) BILL, 2025, Clause 95(ii)
Statutory Approvals	Forest and environmental clearance	Forest Dept issues facilitation letter enabling developer to apply for forest land diversion. Two rounds of central Ministry approval needed: in-principle first, then final approval after conditions met. No state-level mechanism to accelerate or coordinate these approvals		Central Government Ministry; Forest Dept	MoEFCC EIA Notification 2006 Forest Conservation Act 1980
	NOC requirements	Post-2023, Revenue, Forest, Water Resources, KPCL, KPTCL approvals consolidated within SLAC no separate pre-SLAC engagement needed.		SLAC (state NOCs); Central	Karnataka RE Policy 2022-27, clause

Policy harmony for 10 GW annual wind capacity additions

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
	approval structure	Forest diversion, EC, and wildlife clearance fall outside SLAC and must be pursued independently through central government with no state coordination		Government (forest diversion, EC, wildlife)	5.1(b)(2)(c) and Clause 5.1(g)

C. Grid Connectivity

Connectivity applications are submitted directly to KPTCL, which conducts a system study evaluating grid capacity, evacuation arrangement, and point of connection to the InSTS. The feasibility assessment is completed at least six months before the expected date of first energization. Karnataka is yet to prescribe a connectivity transfer provision.

Table 30: Karnataka Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	- No single-window portal is prescribed under Karnataka RE policy 2025. - Project developer is allowed to connect the RE project with State Transmission Utility (STU) for InSTS category projects, subject to the evacuation feasibility. - No specific provision for a single-window portal or a dedicated RE Park connectivity process is identified in this clause.	-	KPTCL (STU)	Karnataka Renewable Energy Policy 2022-2027, Clause 5.1(c)
Feasibility Assessment and Connectivity Grant	Connectivity Grant	KPTCL conducts a system study to assess feasibility of the connectivity request. The study evaluates grid capacity, evacuation arrangement, and point of connection to the InSTS.	60 Days	KPTCL (STU)	KERC- Grid Code, 2025 Clause 4.6(a) and 4.6(b)
Transfer of Connectivity		No transfer of connectivity provision is prescribed in the Karnataka documents reviewed.			

D. Right of Way

Karnataka's interconnection framework covers clearances from AAI, DGCA, railways, forest department, and CEIG. RoW compensation applies to transmission lines of 66 kV and above, with tower base area compensated at 200% of land value and RoW corridor at 30% as a one-time payment. Land value is determined at circle rate or prevailing market rate, whichever is higher, as fixed by the District Collector.

Table 31: Karnataka Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	Approvals from aviation (AAI/DGCA NOC), railways, forest department (FCA 1980), and electrical inspector (CEIG under CEA 2010). Way-leave clearance ensures no trees/branches within minimum CEA clearance. No integrated single-window portal each agency has separate application, fees, and timelines, forcing parallel pursuit and schedule risk	-	Deputy Conservator or of Forest; Chief Electrical Inspector	Procedure for interconnection for IPP, 2021, Clause 1
	RoW Permissions and Approvals	A detailed document list is given that mentions all the approvals needed for interconnection approval	No Specific Timeline Mentioned	The District Magistrate /District Collector/ Deputy	

				Commissi oner	
Compensa tion Framework and Payment		• Compensation applies to transmission lines of 66 kV and above. Tower base area is compensated at 200% of land value, covering the area between the four tower legs plus one metre extension on each side. • The RoW corridor attracts 30% of land value as a one-time payment for diminution in land use due to overhead lines. Compensation also covers permanent and temporary structures such as hutments, houses and line-shifting costs based on field assessment. • Land value is determined at circle rate or prevailing market rate, whichever is higher, as fixed by the District Collector/Deputy Commissioner.	-	The District Magistrate /District Collector/ Deputy Commissioner	Karnataka GO No. EN 376 VSC 2022 dated 20.09.2024, Paras 2, 3 and 5; KPTCL Standard Operating Procedure Annex-III, Steps 1-9; KPTCL Revised RoW Guidelines SIno. 07
Dispute Resolution and Closure		• In case of grievances relating to land rates, District Magistrate/ District Collector/ Deputy Commissioner to issue order	No timelines prescribed	Deputy Commissioner; Commissioner	Karnataka GO No. EN 376 VSC 2022 dated 20.09.2024, Paras 2, 3 and 5; KPTCL Standard Operating Procedure Annex-III, Steps 1-9

E. Commissioning

Karnataka's commissioning framework requires CEIG approval before QCA registration, with CEA certificates and grid performance reports submitted to SLDC prior to COD. Metering uses 0.2s class meters with AMR and IoT, integrated into KPTCL SCADA. Trial runs require four cumulative hours at minimum 10 MW, with SLDC issuing the commissioning certificate within three days. Post-COD, QCA registration, forecasting, and DSM compliance with a $\pm 10\%$ deviation band are mandatory from the date of commissioning.

Table 32: Karnataka Commissioning

Parameter	Sub-parameter	Process	Timeline	Approvin g Authority	Policy & Clause
Electrical and Safety Approvals		• CEIG approval mandatory before QCA registration. • CEA Certificate, • LVRT/HVRT reports, and frequency/reactive power results submitted to SLDC before COD	No timelines prescribed	CEIG Karnataka ; CEA; SLDC	KERF&S Amendment 2022, Procedure Section 2.3(h), 5.1; KEGC 2025, Clause 5.7(6)(a), 5.7(6)(b), 5.7(6, 1.4
Metering, Protection and SCADA		• Requirements are clearly defined: 0.2s class meters with AMR and IoT at pooling station. Evacuation bay on KPTCL SCADA via IEC 60870-5-104. STU prepares Protection Manual with third-party audits. • Manual Process	Protection Manual: 90 days. Audit every 5 years. Annual revision.	KPTCL (STU); SLDC	

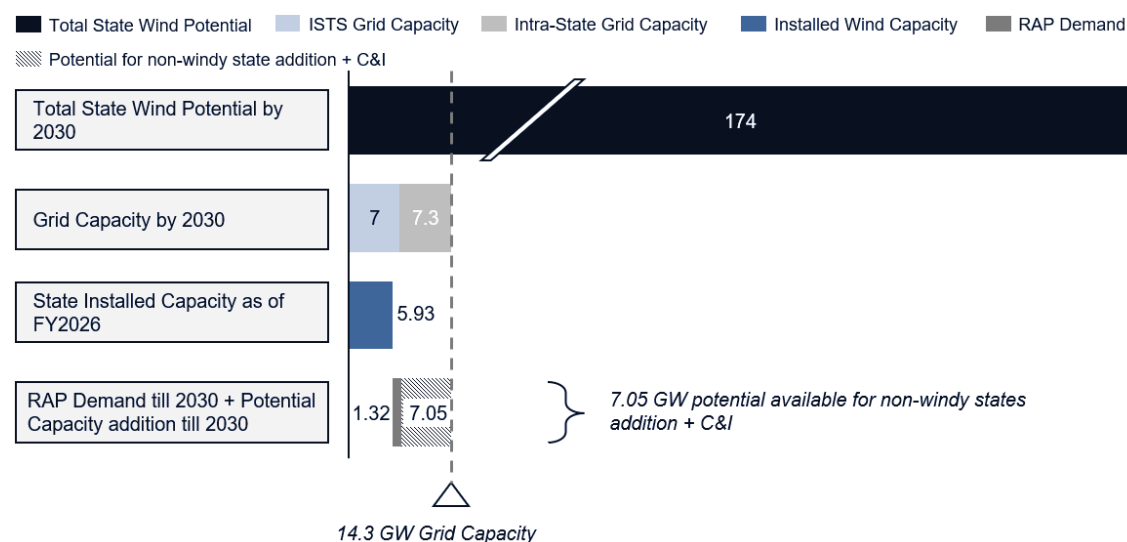
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Grid Synchronisation and Trial Run		• SLDC notified 7 days before trial run. • Trial run: 4 hours cumulative at min. • 10 MW (wind) or 5 MW (solar) with metering, telemetry, and protection in service.		SLDC	KEGC 2025, Clause 5.4(1) Clause
Commissioning Certificate and COD		• SLDC issues Commissioning Certificate post-trial run. Developer's CMD/CEO/MD submits COD Declaration to SLDC 2 days before declared date. Scheduling from 0000 hrs of COD.	Certificate : 3 days COD notice: 2 days	SLDC	5.5(3)(a) & 5.5(3)(b) Clause 5.5(3)(c) & 5.5(3)(d), 5.8(2), Clause 5.9(4)(a); Clause 5.10(1)(e) & 5.10(2)

5.2 Maharashtra

5.2.1 Demand Enablement

Maharashtra holds 174 GW wind potential, with 14.3 GW grid capacity supporting 1.32 GW RAP demand and 7.05 GW additional potential for C&I and non-windy states in addition to existing installed capacity of 5.93 GW.

Figure 7: Maharashtra wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Maharashtra has conducted district-level wind resource assessments through NIWE for MEDA, last updated in 2023. The state's RE Policy 2025-36 sets an aggregate RE target of 100 GW by FY 2035-36, and the RAP defines planned wind capacity aligned with RPO targets through 2030.

Table 33: Maharashtra Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment or NIWE dependant	Wind Resource Mapping	State specific Wind resource assessment study has been conducted	District Level WRM report by NIWE for MEDA
	Frequency of assessment	No frequency of updated releases mentioned, last update was in 2023	
	Geographical Level of depth of assessment	District level sites identified by NIWE for Maharashtra with public access to the document	
Wind in long term energy plan	Frequency of plan	New Policy effective from 2025-26 to 31st March 2036	Maharashtra Renewable Energy and Energy Storage Policy 2025-26 to 2035-36, Section 3(a), 3(d)
	Wind capacity defined in RAP document	Wind capacity planned and required mentioned in the RAP	CEA RAP document Table 7
	Is wind capacity from RE plan aligned with RAP	No wind specific capacity target in RE plan	CEA RAP document Table 7 and figure 11 Maharashtra Renewable Energy and Energy Storage Policy 2025-26

Parameter	Sub-parameter	State Practice	Policy Name & Clause
	Is RAP aligned with RPO	RAP is aligned with RPO targets till 2030	<u>CEA RAP document Table 5</u>

B. Grid Plan

Maharashtra has a 10-year transmission plan covering 2024-2034 published by MahaTransCo. The state is yet to define wind-specific zones or dedicated wind pooling substations within the plan for RE integration.

Table 34: Maharashtra Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	10 Year STU plan from 2024-2034	<u>MahaTransCO 10-year Grid plan</u>
	Substation list for RE integration with annual progress	No list of pooling substations for RE integration with progress is mentioned	

C. Utility Allocation, and RPO Compliance

Maharashtra's RPO targets are aligned with centrally prescribed levels, and state DISCOMs met the wind RPO target of 0.67% for FY25. RPO compliance is reported directly within the tariff documents.

Table 35: Maharashtra Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	States RPO targets are aligned with the centrally prescribed targets	<u>RPO Trajectory 2022, Section 5(a)</u>
	DISCOM compliance	Wind RPO Target of 0.67% for FY25 was complied and met by state DISCOMS	<u>MSEDCL MYT FY24 Table 42</u>
	Public availability of compliance document	RPO compliance is directly stated in tariff documents	

D. C&I and Open Access rules

Maharashtra permits open access for consumers of 100 kW and above, with long-term access granted in 15 days and BPTA in 60 days; inter-state GNA needs prior CTU NOC. Captive consumers must maintain 51% self-consumption, with status changes intimated within 10 days. Long-term Captive Green OA projects with 4-hour storage at 50% of contracted RE capacity get a 10-year Electricity Duty exemption from COD. LTOA rights are relinquishable on payment of stranded capacity compensation.

Table 36: Maharashtra C&I and Open Access rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	100 kW and above for Green Open Access (lowered from earlier 1 MW)	<u>Maharashtra RE & ESS Policy 2025-26 to 2035-36, Section 7.2.1</u>
	Contract demand	Open Access consumers sourcing power from renewable energy generators, capacity limit up to Contract Demand or Sanctioned Load as specified in Regulation 3.2 shall not be applicable	<u>MERC Distribution Open Access Regulations, 2016, Regulation 4.2</u>

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Approvals	Timeline	Submit application 6 months before start date for long term or 3 months for medium term, distribution licensee gives consent within 7 days, open access is granted within 15 days of receipt, bulk power transmission agreement is signed within 60 days of grant, and letter of credit is submitted 30 days before commencement. Policy mandates further reduction of timelines through portal modifications within 4 months of policy notification	<u>MERC DOA second amendment, Point 4</u> <u>MSEDCL Procedure, Clause 5.1 (Table)</u> <u>MERC DOA Regulations 2016, Regulation 12.2, Regulation 6.3</u> <u>Regulation 10.5</u> <u>Maharashtra RE&ESS Policy 2025-26 to 2035-36, Section 7.2.1</u>
	Additional stakeholder required in the state	CTU NOC from STU required before any inter-state GNA application sequential dependency	<u>MERC DOA Regulations 2016, Regulation 8.4, Table, Row 8</u>
	Definition/ Verification & Monitoring	- Undertaking on non-judicial stamp paper for 51%+ self-consumption, solvency certificate; change in captive status must be intimated to Nodal Agency within 10 days - Long-term Captive Green OA projects supplying within Maharashtra integrating energy storage (minimum 4 hours of 50% of RE capacity contracted) at generation or consumer end exempt from Electricity Duty for 10 years from CoD	<u>MSEDCL Procedure for Distribution Open Access, Clause 7 (Enclosures), Item XI</u> <u>Maharashtra RE&ESS Policy 2025-26 to 2035-36, Section 7.2.2</u>
Captive/Group Captive	Transfer of SPV	A LTOA consumer may relinquish its LTOA rights fully or partly before the expiry of its full term by payment of compensation for stranded capacity	<u>MERC TOA Open Access Agreement, 2016 clause 27.1</u>

Table 37: Maharashtra DISCOM-wise open access charges (FY2025-26)

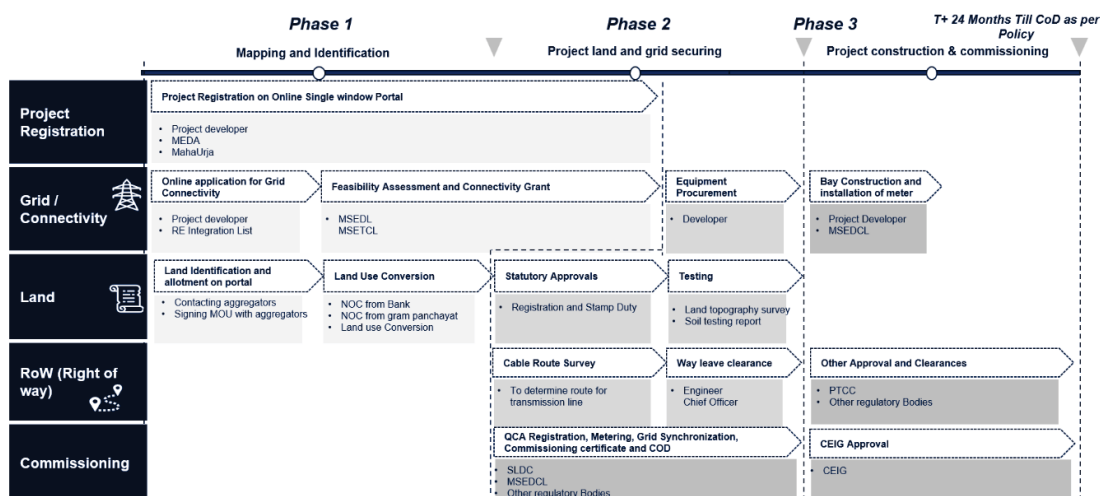
Category	Sub-category	Unit	MSEDCL	BEST	Tata Power	Reliance Energy	Source
Transmission	Transmission Charge	INR/Unit	3.360	3.360	3.360	3.360	<u>MSEDCL MYT, 2024, Table 264</u>
	Transmission losses	INR/Unit	0.001	0.001	0.001	0.001	<u>MSEDCL MYT, 2024, Table 264</u>
Wheeling	Wheeling Charges	INR/Unit	0.740	0.740	0.740	0.740	<u>MSEDCL MYT, 2024, Table 439</u>
	Wheeling losses	INR/Unit	0.056	0.056	0.056	0.056	<u>MSEDCL MYT, 2024, Table 439</u>
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	2.080	2.080	2.080	2.080	<u>MSEDCL MYT, 2024, Annexure 3</u>
	CSS Charges-Commercial	INR/Unit	1.790	1.790	1.790	1.790	<u>MSEDCL MYT, 2024, Annexure 3</u>
Additional Surcharge		INR/Unit	1.410	1.410	1.410	1.410	<u>MSEDCL MYT, 2024, Table 451</u>
SLDC		INR/Unit (x10 ⁻⁶)	0.508	0.508	0.508	0.508	<u>MSEDCL MYT, 2024, Table 264</u>

5.2.2 Project Execution

The Maharashtra wind project development timeline spans three phases across 24 months to COD. Phase 1 covers project registration via MEDA and MahaUrja, grid connectivity application with RE Integration List, land identification with aggregator MOUs, and land use conversion with bank and gram panchayat NOCs.

Phases 2 and 3 progress through feasibility and connectivity grant from MSEDCL and MSETCL, statutory approvals, cable route survey, way leave clearance, bay construction, and culminate in CEIG approval, QCA registration, metering, synchronisation, and COD

Figure 8: Maharashtra Project Execution Pathway



A. Project Registration

Maharashtra operates an online single window portal through MEDA for RE project registration and application tracking. Land documentation requires registered sale deeds, lease agreements, or 7/12 extracts, with WTG coordinates uploaded at registration.

Table 38: Maharashtra Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		- Online Single Window Portal exists for RE project registration and application tracking. - Flowchart of process and user manual given	15 days		Maharashtra RE&ESS Policy 2025-26 to 2035-36, Section 8.1, 6.3
Digital Portal Interface		Digital portal Exists for registration			Single window Portal link
Documentation	Pre-Requisites for land	Registered sale deed, long-term lease agreement, or 7/12 extract for project land. If project is on forest land, lease agreement with Forest Department per central government guidelines. Wind Turbine Generator details including latitude, longitude, height above sea level, hub height, and rotor			Documents required list
	Pre-Requisites for grid	Details such as project capacity, site details, and nearest substation details and pay processing fee of Rs. 1 lakh. Joint technical survey by applicant to SNA		STU	

B. Land Acquisition

Maharashtra supports five land categories including government, private, and transmission land, with REIZs. Agricultural to non-agricultural conversion is waived. Wind projects are White Category under MPCB, exempt from CTE, CTO, EIA, and EC, with forest diversions up to 5 hectares cleared at state level.

Table 39: Maharashtra Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment		- Eligible land categories: government Type 1, Type 2 Revenue land, Type 3 private and Central Government land, and transmission land on priority allotment. - Private land: developer aggregates through direct negotiation, on lease or purchase, independent of state allotment. - Government land: Type 2 cleared by District Collector; local body land up to 15 acres via Gram Panchayat, 15–25 acres via Panchayat Samiti, above 25 acres via Zilla Parishad. - RE Park: minimum 100 MW per zone; 10 REIZs by FY 2029-30, 15 by FY 2035-36; Rs. 500 crore support for State PSU developers; PSU, JV and PPP modes; REIZ developer aggregates land, builds basic infrastructure, and secures InSTS connectivity and evacuation right of way	Not prescribed at any stage	District Collector (Type 2); Gram Panchayat/ Panchayat Samiti/Zilla Parishad)	Maharashtra RE&ESS Policy 2025-26 to 2035-36, Sections 6.1, 6.2, 6.4
Land use conversion		No permission from the Collector for change in land use from agricultural to non-agricultural is required	Not prescribed	Revenue Dept (mutation)	Maharashtra Land Revenue Code (Second Amendment) Act, 2025
Statutory Approvals	Forest and environmental clearance	Wind projects classified as White Category by MPCB no Consent to Establish or Consent to Operate required; only MPCB NOC needed. No EIA or Environmental Clearance from SEIAA or central Ministry required for onshore wind. For forest parcels up to 5 hectares, State Government can approve diversion independently	Follows central government procedures; no Maharashtra-specific timeline guaranteed	MPCB; State Government	MoEFCC, Maharashtra Pollution Control Board
	NOC requirements and approval structure	MEDA single-window portal fully integrates offline processes of Electrical Inspectorate, DISCOMs and allied agencies into online mode.	No prescribed timeline for any individual NOC	Revenue Dept or DC; Geology and Mining Dept;	Maharashtra RE&ESS Policy 2025-26 to 2035-36, Section 8.1

C. Grid Connectivity

Grid connectivity applications through the MEDA Single Window Portal, with STU publishing available evacuation capacity on the first day of every month. A joint survey and Technical Feasibility Report are completed within 30 days, followed by issuance of a Grid Connectivity Letter valid for 12 to 36 months depending on voltage level. Connectivity transfer is permitted only in cases of full acquisition, with a mandatory MEDA NOC required in all cases.

Policy harmony for 10 GW annual wind capacity additions

Table 40: Maharashtra Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	- Developer submits an online application in Format 2 through the MEDA Single Window Web Portal, signed and sealed by an authorised person, with the processing fee paid via the portal's Bank Payment Gateway. - STU publishes available evacuation capacity, planned substations, and all received applications on its website on the first day of every calendar month. - RE Park: MEDA declares preferential RE development zones, with STU closely coordinating with the appointed REIZ/Park developer.		MSETCL (STU); MEDA	<u>Single Window Portal</u> <u>Maharashtra RE&ESS Policy 2025-26 to 2035-36, Sections 6.5</u>
Feasibility Assessment and Connectivity Grant	Feasibility Assessment	- STU and the concerned Transmission Licensee conduct a joint survey and prepare a Technical Feasibility Report - STU then undertakes a System Study, finalises the evacuation arrangement and point of connection to the InSTS, and issues a Grid Connectivity Letter	30 days	MSETCL (STU)	<u>Revised Procedure for grant of grid connectivity to In-STS, Clause 7.2, 7.4, 7.11, 7.14, 6.9.1, 6.9.3</u>
Transfer of Connectivity		- Grid Connectivity is not transferrable except where there are multiple investors owning different generation capacities and connected to common evacuation infrastructure, which is developed by the applicant, - if the original applicant/company/firm etc. is fully acquired by any other applicant/company/firm etc. In such case, the 2nd and new applicant will have to make a fresh application		MSETCL (STU); MEDA	

D. Right of Way

Maharashtra's RoW framework applies to transmission lines of 66 kV and above, with tower land compensated at twice the higher of Ready Reckoner rate or average of the last three years' actual sales, and line corridor compensated at 30% of the same rate. Payments are made in stages via NEFT/RTGS within 30 days of the compensation order. A three-tier dispute resolution mechanism exists through the Sub-divisional Valuation Committee, District Appellate Committee, and competent court.

Table 41: Maharashtra Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	No single online portal exists, approvals from aviation (AAI/DGCA), railways, forest department, and electrical inspector run on separate channels with own fees and timelines.	Not prescribed	Forest Department; Concerned Ministry; Local body/municipality	<u>Maharashtra RoW policy 2022</u>
	RoW Permissions and Approvals	Applies to all licensees (govt, semi-govt, private) for 66kV and above. Retrospective for under-construction lines as of 02.11.2022. Not applicable to already commissioned lines.		Industry, Energy and Labour Dept, Maharashtra Govt	
Compensation		Compensation applies to transmission lines of 66 kV and above.	Payment within 30	Sub-Division	

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Framework and Payment		• Tower land: 2× higher of Ready Reckoner rate or avg of last 3 years' actual sales. • Line corridor: 30% of same rate (15% land use + 15% non-utility allowance). • Crop/tree loss: assessed by Taluka Agriculture / Horticulture Officer.	days of compensation order	Valuation Committee	
Dispute Resolution and Closure		• Tier 1: Sub-divisional Valuation Committee issues compensation order with reasons. • Tier 2: Appeal to District Appellate Committee (chaired by Collector) can revise, remand, or dismiss. • Tier 3: Competent Court. Post-completion: transmission company notifies Revenue Dept to record payment on landowner's 7/12 extract.	30-60 Days	District Collector (appellate); competent Court (final)	

E. Commissioning

Maharashtra's commissioning framework requires CEA unique registration and a connection agreement before interconnection. Metering uses 0.2S and 0.5S DLMS ABT meters with AMR and MSLDC visibility certification. Grid synchronisation requires satisfaction of 12 MSLDC checklist prerequisites, with a 24-hour continuous trial run preceding COD. Post-COD, QCA appointment, REMC registration, and Corpus payment are mandatory for projects of 5 MW and above, with LTA, MTOA, or STOA required separately for interchange rights.

Table 42: Maharashtra Commissioning

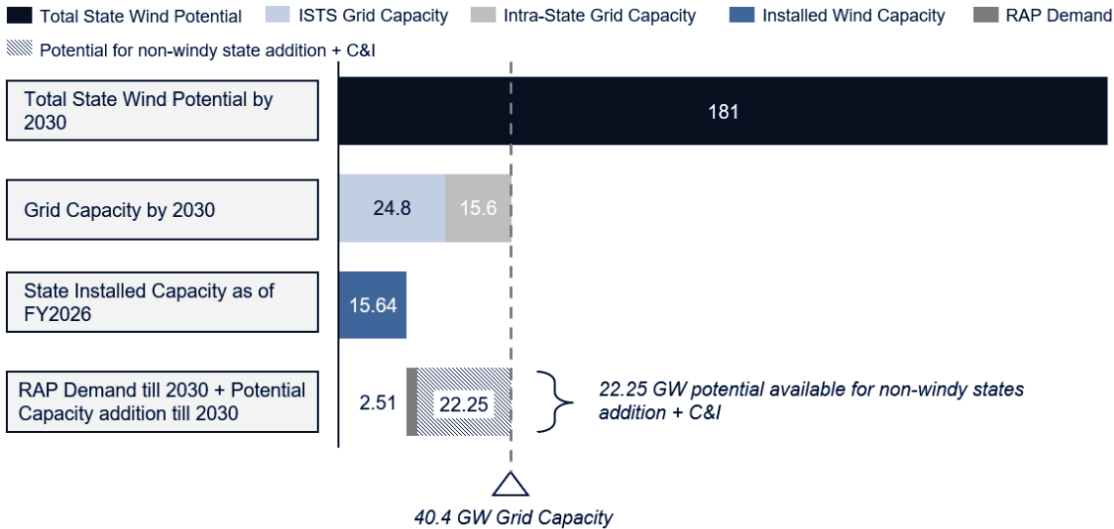
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		• Electrical Inspection plan approval • CEIG approval		CEA; MSETCL; MSLDC	<u>Revised GC Procedure, Clause 7.16</u>
Metering, Protection and SCADA		• Metering specification approval • Installation of SEM meter • NOC for SEM charging required	15 Days	MSETCL SE (PAC); MSLDC	<u>MEGC 2020, Clause 72.1.1, Clause 77, Clause 79.1.11, Clause 79.1.10, Clause 66</u>
Grid Synchronisation and Trial Run		• Developer satisfies 12 MSLDC checklist prerequisites including Final GC, SLD, ABT Meter report, RTU-SCADA certificate, EPA, SLDC registration, startup power consent, and QCA/REMC registration (5 MW and above). • Infirm power requires Distribution Licensee agreement and SLDC permission.	7 Days	MSETCL; MSLDC	<u>Revised GC Procedure, Clause 7.16</u>
Commissioning Certificate and COD		• CMD/CEO/MD submits signed COD certificate to MSLDC. COD declared after 24-hour confirmed trial run, certified by MSLDC.	7 Days	MSLDC	<u>MEGC 2020, Section 31.4</u>

5.3 Gujarat

5.3.1 Demand Enablement

Gujarat holds 181 GW wind potential, with 40.4 GW grid capacity supporting 2.51 GW RAP demand and 22.25 GW additional potential for C&I and non-windy states in addition to existing installed capacity of 15.64 GW.

Figure 9 : Gujarat wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Gujarat relies on NIWE-led wind resource mapping at the state level, last updated in 2023. The Gujarat Integrated Renewable Energy Policy 2025 sets broad RE targets. The RAP defines planned wind capacity and is aligned with the state's 2030 RPO requirements.

Table 43: Gujarat Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment or NIWE dependant	Wind Resource Mapping	• No specific state WRM present, dependent on NIWE identified wind resource mapping with public access to the document	NIWE Prepared report for Gujarat
	Frequency of assessment	• No frequency of updated releases mentioned, last update was in 2023	
	Geographical Level of depth of assessment	• State Level assessment was carried out	
Wind in long term energy plan	Frequency of plan	• RE plan issued every 5 years, 2025 last update	Gujarat Integrated Renewable Energy Policy 2025
	Wind capacity defined in RAP document	• Wind capacity defined in RAP document	RESOURCE ADEQUACY PLAN FOR GUVNL- section 2.5, 2.6
	Is wind capacity in RE plan aligned with RAP	• No wind specific capacity mentioned in Integrated RE Policy	

B. Grid Plan

Gujarat has a transmission plan extending to 2030 published by the state STU. The state is yet to define wind-specific zones or dedicated wind pooling substations within the plan.

Table 44: Gujarat Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plans	• 5 yr rolling STU plan with subs. buildout is available	<u>Gujarat STU Transmission plan</u>
	Substation list for RE integration with annual progress	• Substation list and indicative available margin is published	<u>Renewable Energy integration : List of Substations</u>

C. Utility Allocation, and RPO Compliance

Gujarat's RPO targets are aligned with centrally prescribed levels, with DISCOM RPO compliance reported at the non-RE level of 9.20% for FY24. RPO compliance is stated directly in tariff documents.

Table 45: Gujarat Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	• States RPO targets are aligned with the centrally prescribed targets	<u>Procurement from Renewable Energy Sources, Table 1</u>
	DISCOM compliance	• DISCOM RPO Compliance only mentioned at non-RE level of 9.20%	<u>GEDA RPO Compliance Report FY24</u>
	Public availability of compliance document	• RPO compliance is directly stated in tariff documents	

D. C&I and Open Access rules

Gujarat's green open access framework permits consumers from 100 kW and above, with no capacity restriction for captive RE projects. Applications are processed within 15 working days, with deemed grant provisions if nodal agencies fail to respond within prescribed timelines. Captive consumers must maintain 26% equity with voting rights and 51% annual consumption, LTOA/MTOA rights are non-transferable without SNA approval.

Table 46: Gujarat C&I and Open Access rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	• 100 kw and above for all distribution-connected consumers. • No capacity restriction at all for captive consumers setting up RE projects for self-use	<u>GERC GEOA Regulations 2024 - Regulation 1(2), Regulation 9(I)(II), Regulation 3(I), 13(II), Section 1(k), 10(II), 14, 9(V)–9(VIII), Schedule I paras 1–11, para6</u>
	Contract demand	• No Contract Demand Restrictions	
Approvals	Timeline	• T ₀ to T ₀ +15 working days. Acceptance by T ₀ +1 day, GETCO/DISCOM input by T ₀ +7 days (deemed valid if no reply), SNA decision by T ₀ +8 days (deemed granted if no reply), agreement execution by T ₀ +13 days (deemed executed if licensee fails)	

Parameter	Sub-parameter	State Practice	Policy Name & Clause
	Additional stakeholder required in the state	Three-tier nodal setup: SLDC for STOA, STU (GETCO) for MTOA and LTOA, DISCOM where both ends are on its network. Day-Ahead STOA: apply by 13:00 hrs D-1, approval by 15:00 hrs, payment by 17:00 hrs.	
Captive/Group Captive	Definition/Verification & Monitoring	- Thresholds: 26% equity with voting rights and 51% consumption - Verified via 4-quadrant ABT meters certified by RLDC/SLDC/DL. Failure means loss of captive status, levy of CSS, additional surcharge, and late payment surcharge. - Security deposit (LC/BG) equal to 51% of annual captive consumption must be maintained.	
	Transfer of SPV	LTOA/MTOA rights are non-transferable without SNA/licensee approval.	

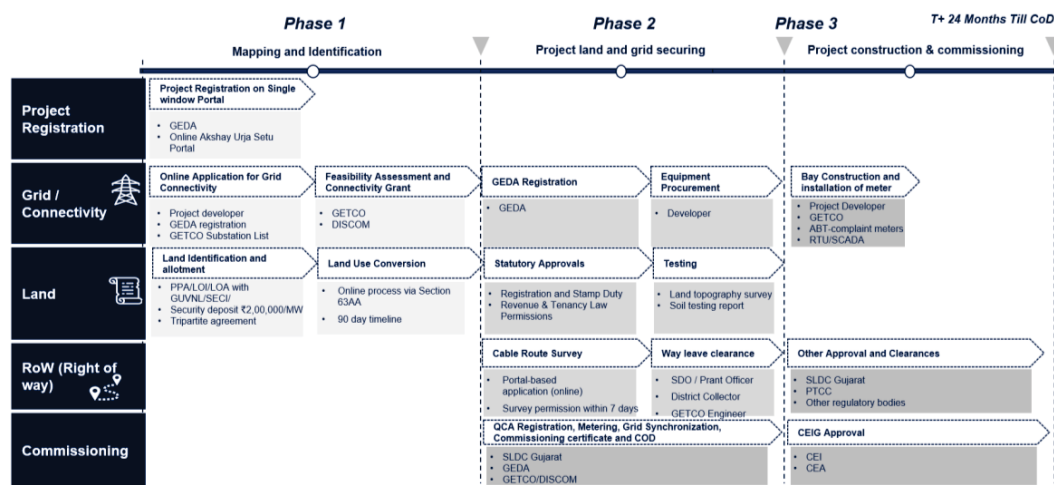
Table 47: Gujarat DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	DGVCL	MGVCL	PGVCL	UGVCL	Source
Transmission	Transmission Charge	INR/Unit	2.543	2.543	2.543	2.543	GERC MYT Order, table 6-4, 5-3,9-3,5-19
	Transmission losses	INR/Unit	0.001	0.001	0.001	0.001	
Wheeling	Wheeling Charges	INR/Unit	0.205	0.205	0.205	0.205	
	Wheeling losses	INR/Unit	0.003	0.003	0.003	0.003	
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	1.290	1.290	1.290	1.290	GERC MYT Order, pg 352
	CSS Charges-Commercial	INR/Unit	1.290	1.290	1.290	1.290	
Additional Surcharge		INR/Unit	0.82	0.82	0.82	0.82	
SLDC		INR/Unit (x10 ⁻⁶)	1.076	1.076	1.076	1.076	GERC MYT Order Table 6-3

5.3.2 Project Execution

Gujarat's wind project development timeline spans three phases across 24 months to COD, covering registration via GEDA's Akshay Urja Setu Portal, connectivity through GETCO and DISCOM, land allotment and conversion, statutory approvals, and culminating in CEIG and SLDC commissioning

Figure 10: Gujarat Project Execution Pathway



A. Project Registration

Gujarat operates the Akshay Urja Setu Portal for RE project registration and application tracking. Land documentation requires registered lease or sale deeds with possession. Grid connectivity applications are submitted online through the portal after GEDA registration

Table 48 : Gujarat Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		- Single window approval - Flow chart of process and user manual given			Akshay Urja portal
Digital Portal Interface		Digital process for project registration			Akshay Urja portal
Documentation	Pre-Requisites for land	- Land must be in the lawful possession of the RE Project Developer, RE Park Developer or RE Generator at the time of application, through a registered sale deed or registered lease deed, along with all requisite aerial rights over the area occupied by the WTG blades. - All permissions under applicable tenancy and revenue laws must be obtained prior to submission of the application to GEDA for project commissioning			Operational guidelines under Gujarat Integrated Renewable Energy Policy – 2025, Clause 5.2.2.7, 4.5(i)
	Pre-Requisites for grid	- All connectivity applications must be submitted exclusively through the Akshay Urja Setu Portal (AUSP) following successful GEDA registration. - Applicants must upload all mandatory documents (including Format-1 Affidavit, Format-2 Application Form, Land Documents/Land BG, PPA/LOI where applicable) as per approved procedure by GETCO and pay non-refundable connectivity fees online		The Gujarat Electricity Regulatory Commission	

B. Land Acquisition

Land allotment is based on land identified sites by government or RE parks, Land use conversion follows an online process with a 90-day timeline through the District Collector. All statutory clearances including environmental, defence, and aviation approvals are the sole responsibility of the developer, with GEDA bearing no liability. Revenue and tenancy permissions must be obtained prior to submission of the commissioning application.

Table 49 : Gujarat Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment		RE Parks are developed by GPCL or any designated state agency nominated by the Government of Gujarat, planned on Government land or land identified by the State, with common infrastructure created by the State entity. Plots within such parks are allotted to project developers through transparent mechanisms	Not prescribed at any stage		Guidelines for Renewable Energy Project Development Clause-9.1
Land use conversion		- No deemed land use conversion process - Online process with 90 days timeline	90 days	District Collector's office	Change of land use under section 63AA
Statutory Approvals	Forest and environmental clearance	- The applicant must independently ascertain the technical, commercial, and regulatory feasibility of the proposed site, including power evacuation arrangements and expected generation, prior to site finalization. This assessment must cover all environmental and statutory requirements. - The Government of Gujarat and GEDA stand fully absolved of any liability arising from non-compliance with these approvals, clearances, or requirements		Central body approvals	Operational guidelines under Gujarat Integrated Renewable Energy Policy – 2025, Clause 5.2.2.6, 2.7
	NOC requirements and approval structure	- The land on which the Wind Power Project, is proposed shall be in the lawful possession of the RE Project Developer, RE Park Developer, or RE Generator, through a registered sale deed or registered lease deed, along with all requisite aerial rights over the area occupied by the WTG blades, at the time of application. - All permissions required under applicable tenancy and revenue laws shall be obtained prior to submission of the application to GEDA for commissioning of the project			

C. Grid Connectivity

Gujarat processes connectivity applications through the Akshay Urja Setu Portal. Connectivity is granted within 30 days of application receipt, Connectivity transfer is partially permitted, with limited exceptions for RE park developers and prototype WTG allocations

Table 50 : Gujarat Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	Developers register with GEDA on the Akshay Urja Setu single window portal	30-60 Days.	GETCO, GEDA	GUVNL Akshay urja setu portal

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
		- Applications are prioritized by project type and land readiness, following which the STU grants connectivity or alternatives. - RE Park provision is mentioned with no specific clause.			
Feasibility Assessment and Connectivity Grant	Connectivity Grant	The STU or DISCOM conducts a feasibility assessment to evaluate the connectivity request. The assessment determines grid capacity, evacuation arrangement, and point of connection, with connectivity granted within one month if feasible, or offered on a partial or provisional basis in RE potential areas where feasibility may extend up to 180 days.	60-180 Days	GETCL (STU)	Procedure for "Grant of Connectivity" to Projects based on Renewable Sources to Intra-State Transmissi
Transfer of Connectivity		Grid connectivity is generally not transferable once granted under Gujarat. Exceptions are allowed for RE park developers and RE developers who take connectivity on behalf of multiple projects and later allocate them, and for prototype WTGs after RLMM listing, with the original grantee remaining responsible for compliance, charges, and permissions.		GETCL (STU)	on/ Distribution System, 2025- Section 7, Section 4.5

D. Right of Way

Gujarat's RoW process is portal-based, with survey permission granted within seven days and RoW approval issued within 60 days, with deemed grant applicable if no decision is taken within the prescribed timeline. Tower base area compensation is at 200% of the updated Jantri rate, and RoW corridor compensation is at 25% of the Jantri rate per metre of corridor length.

Table 51 : Gujarat Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	No Clause stated			Statutory Approvals
	RoW Permissions and Approvals	- RoW is obtained through a portal-based application process starting with survey permission (to be granted within 7 days), followed by submission of route, land, and technical details, after which the authority may seek clarifications within 30 days - If no action is taken within the timeline, the approval is deemed granted	30-60 Days	Industry, Energy and Labour Dept, Gujarat Govt	Procedure for interconnection for IPP, 2021, Clause 1 GIPL Portal
Compensation Framework and Payment		- Compensation applies to transmission lines of 66 kV and above. - Tower land: 2x higher of Ready Reckoner rate or avg of last 3 years' actual sales. - Line corridor: 30% of same rate (15% land use + 15% non-utility allowance). - Crop/tree loss: assessed by Taluka Agriculture / Horticulture Officer.		SDO / Prant Officer Land Records, Town Planning, Agriculture Dept	Compensation Framework and Payment
Dispute Resolution and Closure		No clause mentioned			Dispute Resolution and Closure

E. Commissioning

Gujarat mandates CEI approval and SLDC clearance pre-commissioning, ABT-compliant metering with RTU, and online connectivity agreement within 65 days through the GEDA Akshay Urja Setu Portal, with phased commissioning under Transmission, Wheeling, and PPA agreements.

Table 52 : Gujarat Commissioning

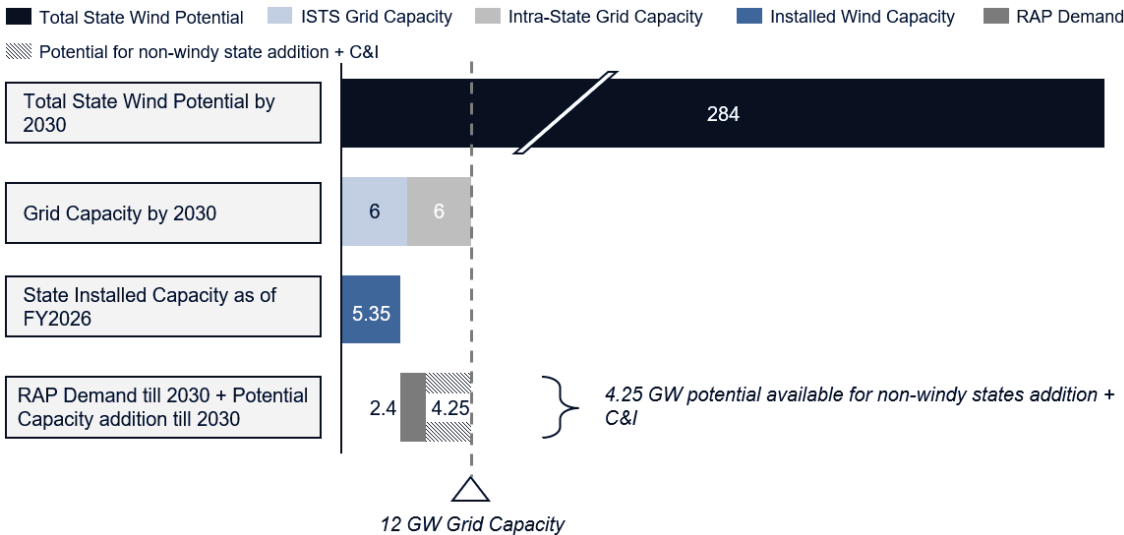
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		- CEI approval from Chief Electrical Inspector mandatory for electrical safety certification and charging authorization. - WTGs and allied electrical installations inspected by CEIG, Government of Gujarat, and CEA, Government of India, as applicable. - SLDC approval required minimum 3 months before grid connection for technical grid compatibility verification	3 months before SCOD	CEIG	Guidelines for Renewable Energy Project Development under Gujarat Integrated Renewable Energy Policy – 2025, Clauses 4.5(iv), 5.2.3.9, 4.5(v), 5.2.2.10
Metering, Protection and SCADA		- Metering arrangement provided by the developer at the interconnection point conforming to CEA Installation and Operation of Meters Regulations 2006. - ABT-compliant meter, check meter, and standby meter installed at the metering point - RTU with communication system installed for real-time operational data transfer to the Load Dispatch Centre; - Online process through GEDA Akshay Urja Setu Portal for application, documentation, and compliance tracking. - Project deemed commissioned upon DISCOM meter sealing	All metering documents before Final GC.	GETCO; SLDC; CEA	
Grid Synchronisation and Trial Run		- Online portal - Connectivity Agreement signed within 65 days from connectivity grant; failure results in revocation and bank guarantee encashment. - Minimum 10% capacity commissioned within 1 month of evacuation line charging; bal. 90% within the timeline specified in relevant GERC order - Uncommissioned capacity beyond timeline revoked with proportionate bank guarantees encashed. - Quarterly work progress report submitted from the date of Development Permission, covering civil works, substation electrical works, and transmission line works.	65 Days	GETCO; SLDC; GEDA	
Commissioning Certificate and COD		- Online process - GEDA undertakes commissioning only on submission of Transmission Agreement with GETCO, Wheeling Agreement with DISCOM or PPA with DISCOM as applicable, charging certificate from Chief Electrical Inspector, Government of Gujarat, - Representatives of the project owner, GEDA, and the concerned DISCOM or GETCO present at site during commissioning.	Certificate within 15 Days	GEDA; GETCO; DISCOM	

5.4 Rajasthan

5.4.1 Demand Enablement

Rajasthan holds 284 GW wind potential, with 12 GW grid capacity supporting 2.4 GW RAP demand and 4.25 GW additional potential for C&I and non-windy states in addition to existing installed capacity of 5.35 GW.

Figure 11 : Rajasthan wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Rajasthan leverages NIWE's state-level wind resource atlas at 120m for resource assessment. The Rajasthan Integrated Clean Energy Policy 2024-2029 includes wind and hybrid capacity targets, and the RAP defines 4 GW of wind capacity through 2030, aligned with RPO requirements.

Table 53 : Rajasthan Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment or NIWE dependant	Wind Resource Mapping	• State yet to release a specific wind resource mapping carried out, relies on NIWE study with public access of the document	<u>Rajasthan integrated clean energy Policy – 2024 Section 12.4</u>
	Frequency of assessment	• State yet to release a specific wind resource mapping carried out, relies on NIWE study with public access of the document	<u>NIWE Wind Resource Atlas at 120 m</u>
	Geographical Level of depth of assessment	• State Level	
Wind in long term energy plan	Frequency of plan	• 5 Years, 2024-2029	<u>Rajasthan integrated clean energy Policy – 2024</u>
	Wind capacity defined in RAP document	• Wind Specific capacity mentioned in RAP document	<u>CEA RAP document table 7 and Table 3</u>
	Is RAP aligned with RPO	• Yes, RAP is Aligned with RPO till 2030	

B. Grid Plan

Rajasthan releases a standalone STU transmission plan covering wind-specific zones, a five-year rolling grid plan, and dedicated wind pooling substations.

Table 54: Rajasthan Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	5 years Standalone STU Transmission Plan/ Investment plan exists	RVPN 2375/2025 in the matter of approval of Investment Plan for Rajasthan Rajya Vidyut Prasaran Nigam Limited for the FY 2026-27
	Substation list for RE integration with annual progress	List of pooling substations mentioned	

C. Utility Allocation, and RPO Compliance

The state's RPO targets are aligned with MoP prescriptions, and DISCOMs have met their stated RPO targets for FY2024-25. Compliance data is publicly available through annual tariff orders.

Table 55: Rajasthan Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	Yes, Wind RPO Targets Are Aligned with MoP	RERC RPO Regulation, 2023, Section 4(3)
	DISCOM compliance	DISCOM Have Complied with Stated RPO Target for the year FY2024-25	Tariff Order for FY2024-25, Point 3.97 and Annexure D
	Public availability of compliance document	RPO compliance is directly stated in tariff documents	

D. C&I and Open Access rules

Rajasthan permits green open access from 100 kW and above, with applications disposed within 15 days. Rajasthan permits green open access from 100 kW and above, with applications disposed within 15 days. State-specific provisions cover banking at 8% in kind, standby charges capped at 25%, mandatory BESS above 5 MW, and captive capacity up to 200% of contract demand. Offshore wind surcharge exemption extends to December 2032.

Table 56: Rajasthan C&I and Open Access rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	100 kW and above for non-captive consumers - No lower load limit for captive consumers.	RERC GEOA Regulations, 2025, Clause 2(i)(k); Clause 5(ii), 6(I), 6(ii), 6(iv), 25(iii).
	Contract demand	No lower contract demand or sanctioned load limit for captive consumers.	
Approvals	Timeline	- Application disposal within 15 days from date of receipt from CNA. - Long term open access decision within 60 days of receipt of application; 90 days if system strengthening required.	
	Additional stakeholder required in the state	- Rajasthan introduces RVPN as STU and SNA for LTOA and MTOA, Rajasthan SLDC as SNA for STOA, and Rajasthan distribution licensees as area DISCOMs. - State Grid Code acts as second-level grievance redressal body before matters reach the Commission.	

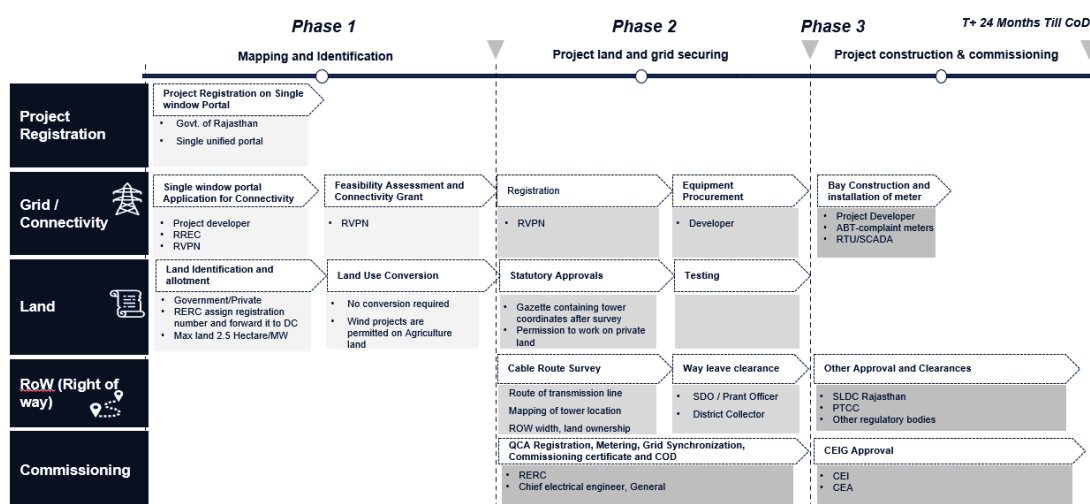
Parameter	Sub-parameter	State Practice	Policy Name & Clause
Captive/Group Captive	Definition/Verification & Monitoring	- Annual Verification of Captive Status: - Consumer shall verify the eligibility condition of minimum 51% consumption and minimum 26% stake holding of the consumers	<u>RERC GEOA Regulations 2025, Clause 2(i)(d); Clause 5(ii)</u> <u>RERC GEOA Procedure clause 3.3 c</u> <u>Rajasthan SOP for sale of power for captive projects, clause 8</u>
	Transfer of SPV	- Transfer Allowed - A long-term customer may relinquish the long-term access rights fully or partly before the expiry of the full term of long-term access, by making payment of compensation for stranded capacity	<u>Procedure for Grant of Green Energy Open Access-Clause-15.1, 15.2</u>

Table 57: Rajasthan DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	JVVNL	AVVNL	JdVVNL	Source
Transmission	Transmission Charge	INR/Unit	0.620	0.580	0.630	<u>RERC tariff order 2303/2025, 2304/2025, 2305/2025</u>
	Transmission losses	INR/Unit	0.026	0.024	0.026	
Wheeling	Wheeling Charges	INR/Unit	0.760	0.760	0.760	<u>table 93, table 85</u>
	Wheeling losses	INR/Unit	0.029	0.029	0.029	
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	1.590	1.590	1.590	<u>RERC tariff order for open access charges</u>
	CSS Charges-Commercial	INR/Unit	1.590	1.590	1.590	
Additional Surcharge		INR/Unit	0.530	0.530	0.530	
SLDC		INR/Unit (x10 ⁻⁶)	0.209	0.152	0.190	<u>RERC tariff order 2303/2025, 2304/2025, 2305/2025</u>

5.4.2 Project Execution

Figure 12: Rajasthan Project Execution Pathway



A. Project Registration

Rajasthan has a single unified portal for land and grid approvals. Land documentation includes site details, environmental and forest clearances, and project coordinates. Grid prerequisites cover plant location, injection quantum, nearest RVPN GSS, and RREC registration, with connectivity charges payable within 30 days of preliminary approval.

Table 58 : Rajasthan Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		- Single window portal for clearance exists - No flowchart for process/user manual			Portal Link
Digital Portal Interface		Yes, Digital portal exists			Portal Link
Documentation	Pre-Requisites for land	Developer submits site identification and land acquisition details, environmental clearance, forest clearance and forest NOC where applicable, geographical location of the project including nearest village, district, latitude and longitude	30 Days	RVPN as Nodal Agency, RREC	Procedure for Grant of Connectivity to Intra-State Transmission System effective 01 February 2026, Clause 2.2, 2.6, 2.5, 2.4 and Annexure 11 Clause B(5) and B(7), Annexure 6,
	Pre-Requisites for grid	Developer submits proposed plant location, quantum of power to be injected or drawn, name of nearest RVPN GSS, desired voltage level and project commissioning timeline. RE generators submit RREC registration letter	Submitted with the connectivity application. Connectivity charges paid within 30 days of preliminary approval	RVPN as Nodal Agency, RREC	

B. Land Acquisition

Rajasthan permits wind projects on private agricultural land without land use conversion. Government land is allotted through RREC and the District. RE park development is open to the private sector with RREC processing registration within 30 days.

Table 59 : Rajasthan Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment	-	- Private Sector RE Power Park Developer submits an application in prescribed online format to RREC for RE Park development - REPPD creates common infrastructure including power evacuation systems, roads, lights, water supply, and administrative support systems. - REPPD permitted to acquire agricultural land from Khatedar in excess of ceiling limit under the Rajasthan Imposition of Ceiling on Agriculture Holding Act, 1973. - Government Land allotted to RE Park, UMREPP, and Solar, Wind, Hybrid, Hydro and PSP Storage projects	Registration process is within a period of 30 days	State Government (allotment, sub-lease approval); RREC (recommendation); District Collector	Rajasthan Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(i) (ii) (iii), 16.1 Rajasthan land revenue rules, 2025 Section 2 Portal link
Land use conversion	-	Land conversion will not be required in accordance with the provisions of Rajasthan Tenancy Act 1955 and Rajasthan Land Revenue Act 1956 and the Rules made thereunder for the development of RE Park on Private Agriculture Land.			Rajasthan Integrated Clean Energy Policy 2024, Amendment Clauses: 10.2(iv)
Statutory Approvals	Forest and environmental clearance	No clause mentioned			
	NOC requirements and approval structure	- Documents required include Memorandum and Articles of Association, registration certificate, partnership deed, MOU execution authority with GoR, RREC, RVPN, or DISCOM, DPR with interfacing scheme in three copies, and Annual Report for the last three years. - Wind Farm submission includes total capacity, micro-siting plan per C-WET guidelines, type test approval, power curve of WEG, generator details, location with land category, Khasra-wise area, Jamabandi map, wind assessment feasibility report, and DPR for one of the eight C-WET authenticated locations.	Lease deed within 45 days of allotment; automatic cancellation if not executed	RREC (registration, recommendation, fees); District Collector	Rajasthan Land Revenue (Allotment of Land for Setting up of Power Plant based on Renewable Energy rule 3, 10, 12; Form A; Form B

C. Grid Connectivity

Rajasthan's grid connectivity framework offers a single-authority (RVPN-led), timeline-bound process for application and feasibility, but change of name and ownership-based transfer of connectivity is not allowed.

Table 60 : Rajasthan Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	- RE generators apply through the RREC online portal - Application accompanied by non-refundable processing fee paid by demand draft or RTGS to Sr. AO (EA and Cash), RVPNL, with GST number mandatory. - RE generators must register with RREC before applying. - RE Park: no clause prescribed for grid connectivity under the Integrated Policy.	Application processed by RVPN. Shortcomings to be cured within 30 days of intimation.	RVPN as Nodal Agency, RREC	<u>Procedure for Grant of Connectivity to Intra-State Transmission System effective 01 February 2026.</u> <u>Clause 1.5, 2.1, 2.4, 2.5, 2.10, 2.7, 2.9, 2.13, 2.14, 2.15, 2.16, 5.2, 5.4, 9</u>
Feasibility Assessment and Connectivity Grant	Connectivity Grant	- RVPN scrutinises the application and conducts system studies to assess available capacity and feasibility. - RVPN issues a Preliminary Approval for Grant of Connectivity in Annexure 3 specifying the substation, voltage level, design features of the dedicated transmission line, bay completion timeline, and any system augmentation required.	15-30 Days.	RVPN as STU	
Transfer of Connectivity		- Grid connectivity is not transferable. It applies only to the applicant to whom it has been granted. - Relinquishment is permitted in part or full by written request to RVPN,	Relinquishment processed on case-by-case basis after written request to RVPN.	RVPN as STU	

D. Right of Way

Rajasthan's RoW process involves notification of tower coordinates, joint area measurement by revenue authorities and RVPN field officers, and landowner consent through a signed affidavit. Tower base compensation is at 200% of DLC rates, with an additional 200% for 400 kV and above lines under the 2025 amendment. RoW corridor compensation ranges from 30% in rural areas to 60% in municipal corporations. Revenue authorities and SDO offices handle disputes involving denial or contested compensation.

Table 61 : Rajasthan Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	No clause mentioned			
	RoW Permissions and Approvals	- Transmission lines of 132 kV and above eligible under RoW guidelines. - Land jointly measured by revenue authorities and RVPN field officers in the presence of landowners as the verification step before compensation and work permission. - Names of landowners whose property falls within the transmission line's RoW documented and published during the check survey at execution stage.		District Magistrate / District Collector or the Sub-Divisional Officer of the area	<u>Policy for payment of compensation in regard to RoW – II(1) (3) (8), 10</u>
Compensation Framework		- Compensation Framework & Payment: - The policy provides 200% of DLC land value for the tower base area, and the 2025 amendment adds additional 200%		DM, governor, Local authorities	<u>Partial amendment in row compensa</u>

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
and Payment		compensation for 400kV and above lines. • For the RoW corridor, the amended rates are 30% in rural areas, 45% in municipalities and other urban planning areas, and 60% in municipal corporations and metropolitan areas.			tion policy issued by energy department - section ii(5)
Dispute Resolution and Closure		• State recognizes disputes, in case of denial by landowner or any other dispute, revenue authorities/SDO office may be involved for disbursement of land compensation amount.		RERC	Policy for payment of compensation in regard to RoW – IO

E. Commissioning

Rajasthan's commissioning framework requires First Time Charging documentation submitted to RVPN 10 days before the scheduled date, covering CEIG approvals, protection certificate, Electrical installations up to 33 kV self-certified by owner, supplier, or consumer.

Table 62 : Rajasthan Commissioning

Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		• CEIG approval mandatory before energisation, covering the bay, line, pooling station, and inverters. • CEA Certificate, HVRT, LVRT, harmonic filters, and PQ meter at the point of interconnection required for RE plants. • Electrical installations up to 33 kV self-certified by owner, supplier, or consumer, or certified by Electrical Inspector via the departmental portal; installations above 33 kV mandatorily certified by an Electrical Inspector	Preliminary approval 30 days. Final approval 15 days after charge deposit. Legacy compliance 60 days.	RVPN, RREC, CEA, CEIG	Procedure for Grant of Connectivity to Intra-State Transmission System effective 01 February 2026. Clause 2.6, 2.7, 2.8, 2.13, 2.14, 2.16, 2.17 and 5.6, 5.7, 5.8, 5.9, 5.10, Annexure 11. Amendment in Standard Operating Procedure for Renewable Energy Connectivity to RVPN Grid Sub-Station. Clause
Metering, Protection and SCADA		• Requirements are defined Class 0.2S ABT main, check, and standby meters installed by the developer along with DCU and modem at the substation. • Developer applies to SLDC for STOMS integration, pays the integration fee, and receives the SIM consent letter; L&T as STOMS integrator installs the SIM, configures meters, runs end-to-end testing, and confirms real-time data flow to the STOMS server. • Joint verification by RVPN GSS in-charge, MPT&S, communication wing, and DISCOM M&P; SE EA RVPN issues the STOMS Integration Certificate, SE MPTS issues the protection certificate, and SE SSDA issues the telemetry certificate.		SLDC, SE EA RVPN, SE MPTS RVPN, SE SSDA SLDC, L&T integrator	
Grid Synchronisation and Trial Run		• First Time Charging documentation submitted to Superintending Engineer SOLD ten days before commissioning. • RVPN verifies connection works, SLDC communication, CEIG permit, PTCC clearance, protection scheme, and LVRT, HVRT, reactive power, and harmonics compliance.	FTC submission 10 days before commissioning.	SE SOLD RVPN, Protection Wing, SLDC	

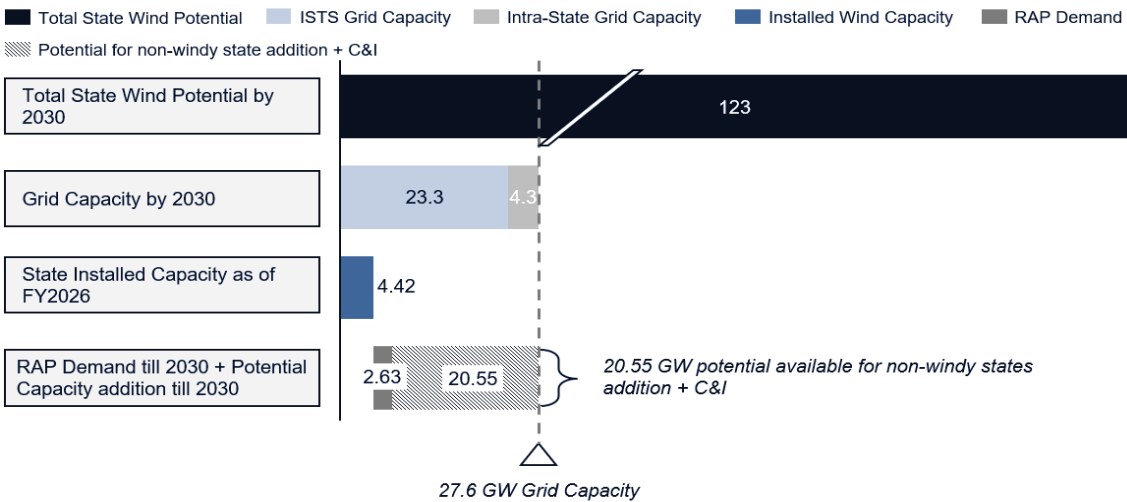
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Commissioning Certificate and COD		- RVPN issues Commissioning Instruction; SLDC permits synchronisation - Document set covers RE registration, PPA, connectivity agreement, CEIG approvals, power evacuation approval, bay allocation, QCA letters, RVPN circle officer signed formats, protection, STOMS and telemetry certificates, RUVNL synchronisation and takeoff power letters, PMU and reactive power proofs, LVRT, HVRT and harmonics test reports, and notarised undertaking. - No separate commissioning certificate, CMD-signed COD, or trial run duration prescribed in the uploaded documents.	FTC 10 days before commissioning. Evacuation approval valid 3 years.	RVPN, SLDC, RUVNL, CEIG	3.2, 3.3 and Checklist B(7) <u>Energy Department, GoR, Notification 15(7)Energy/2026/05515</u> <u>Procedure for STOMS Integration with ABT Meter at RVPN Grid Substation, Phase 1, Phase 2, Phase 3 and Annexures 1, 2 and A.</u> <u>Rajasthan Electricity Regulatory Commission (Metering) Regulations 2013, Clause 2 (A(ii))</u>

5.5 Andhra Pradesh

5.5.1 Demand Enablement

Andhra Pradesh holds 123 GW wind potential, with 27.6 GW grid capacity supporting 2.63 GW RAP demand and 20.55 GW additional potential for C&I and non-windy states.

Figure 13 : Andhra Pradesh wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Andhra Pradesh's wind resource assessment is covered through NIWE's national-level mapping, with state potential documented in the NIWE 150m Wind Atlas; no state-sponsored assessment has been conducted. The state's Integrated Clean Energy Policy 2024 outlines a five-year renewable energy plan (2024–2029), and the RAP defines planned wind capacity aligned with Andhra Pradesh's 2030 RPO requirements.

Table 63 : Andhra Pradesh Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment (State/NIWE)	Wind Resource Mapping	- State has not sponsored its own wind resource assessment - NIWE national study mentions state potential with public access of the document	<u>NIWE 150 m wind atlas</u>
	Frequency of assessment	No frequency	<u>NIWE Prepared report for Andhra Pradesh</u>
	Geographical Level of depth of assessment	Wind resource mapped at State level	<u>NIWE Prepared report for Andhra Pradesh</u>
Wind in long term energy plan	Frequency of plan	5 years, 2024-2029	<u>Andhra Pradesh Integrated Clean Energy Policy, 2024 - Orders</u>
	Wind capacity defined in RAP document	Yes defined, planned + additional mentioned in RAP	<u>Resource Adequacy Plan for the State of Andhra Pradesh - Table 4</u>
	Is RAP aligned with RPO	State RAP is aligned with state 2030 RPO targets	<u>Resource Adequacy Plan for the State of Andhra Pradesh - Table 4 and Table 11</u>

B. Grid Plan

Andhra Pradesh releases a 5-year rolling transmission plan covering FY25–FY29 and FY30–FY34 containing grid expansion plans; it is yet to release substation-wise details covering dedicated RE integration points and wind-specific pooling substations.

Table 64 Andhra Pradesh Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	STU transmission plan given for FY25-FY29 and FY30 to FY34	TRANSMISSION CORPORATION OF AP LIMITED VIDYUTH SOUDHA
	Substation list for RE integration with annual progress	Substation -wise details are not mentioned	

C. Utility Allocation, and RPO Compliance

The state's wind-specific RPO targets are defined in the RAP document, though wind-specific procurement performance is not separately reported; DISCOMs have complied with the overall RPPO target of 22%. RE-level RPPO compliance is publicly available and reported annually.

Table 65: Andhra Pradesh Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	Wind specific RPO targets mentioned in RAP document	ANDHRA PRADESH ELECTRICITY REGULATORY COMMISSION- Clause 3(1) Resource Adequacy Plan for the State of Andhra Pradesh – Table 6
	DISCOM compliance	Wind specific energy RPO or power procurement not mentioned, overall Discoms have complied with RPPO target of 22%	Tariff for Retail Sale of Electricity during FY 2025-26 - Chapter 5, Point 100
	Public availability of compliance document	Overall, RE level RPPO compliance is visible in public documents	

D. C&I and Open Access rules

Andhra Pradesh's open access framework permits non-captive consumers from 100 kW and above, through single or aggregated connections within the same DISCOM division, with no load limitation for captive consumers. Applications follow defined timelines of 2.5 months, with APTRANSCO, APSLDC, APDISCOMs, and NREDCAP as key stakeholders; no QCA equivalent exists. Captive verification and monitoring mechanisms remain undefined, and SPV transfer is permitted under the ICE Policy via NREDCAP with no transfer fee.

Table 66 : Andhra Pradesh C&I and Open Access Rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	100 kW and above for non-captive consumers - eligible through single connection or multiple connections. - No load limitation for captive consumers	APERC GEOA Regulation 2024 - (Reg. No. 3 of 2024), Clause 2.1(f);
	Contract demand	100 kW and above for non-captive consumers - eligible through single connection or multiple connections aggregating to ≥ 100 kW located in the same electricity division of a DISCOM; - no load limitation for captive consumers	APERC GEOA Regulation 2024 - (Reg. No. 3 of 2024), Clause 2.1(f)
Approvals	Timeline	STOA - online portal, MTOA/LTOA- manual application - defined Timelines - 2.5 months	APERC GEOA Regulation 2024 - Clause 8(4)

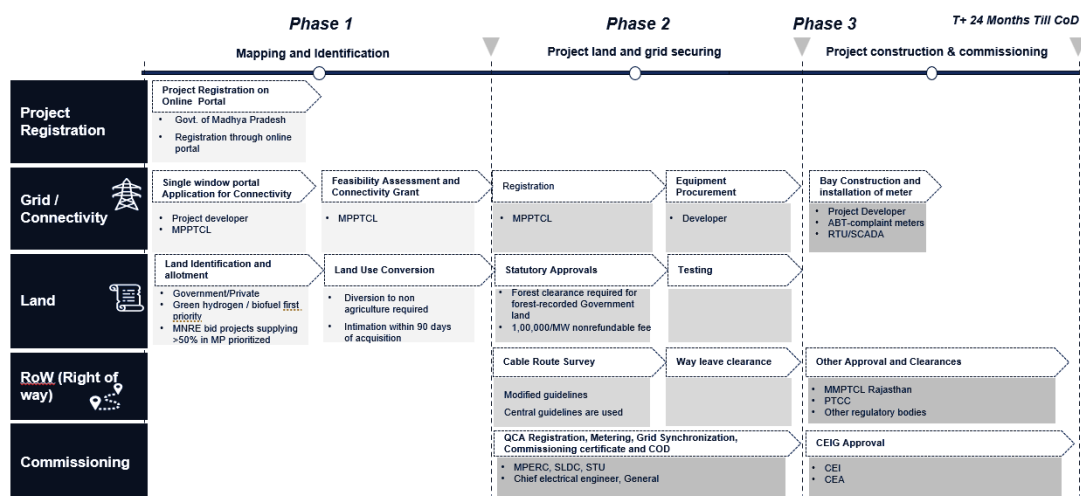
Parameter	Sub-parameter	State Practice	Policy Name & Clause
			NREDCAP Operational Guidelines for ICE, 2024, Clause 9
	Additional stakeholder required in the state	• APTRANSCO (STU/SNA for LTOA/MTOA) • APSLDC (SNA for STOA) • APDISCOMs (distribution licensees) • NREDCAP as SNA • No QCA equivalent specified	APERC GEOA Regulation 2024 - Clauses 8(1), 8(2);
Captive/Gro up Captive	Definition/Verification & Monitoring	• State-level captive definition, audit, certification, and monitoring mechanisms undefined.	AP ICE Policy 2024, Clauses 17.1, 17.11 (Fee Table, S.No. 8), 5.6(h), 5.1, 5.4, 5.16
	Transfer of SPV	• Project/SPV transfer permitted under ICE Policy • No transfer fee, processed via NREDCAP	2026 Amendment to AP ICE Policy 2024, 5, Clause 17.11

Table 67: Andhra Pradesh DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	APSPDCL	APCPDCL	EPDCAPL	
Transmission	Transmission Charge	INR/Unit	0.887	0.887	0.887	APERC RST Order FY2025-26, Table 234
	Transmission losses	INR/Unit	0.032	0.032	0.032	APERC RST Order FY2025-26, Table 18b
Wheeling	Wheeling Charges	INR/Unit	0.380	0.380	0.380	APERC RST Order FY2025-26, Table 234
	Wheeling losses	INR/Unit	0.011	0.011	0.010	APERC Wheeling order for 5th control period table 5.7
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	1.500	1.560	1.480	APERC RST Order FY2025-26, Table 104
	CSS Charges-Commercial	INR/Unit	2.130	1.870	1.910	APERC RST Order FY2025-26, Table 104
Additional Surcharge		INR/Unit	N/A	N/A	N/A	
SLDC		INR/Unit (x10 ⁻⁶)	0.909	0.502	0.919	APERC RST Order FY2025-26, Table 72

5.5.2 Project Execution

Figure 14: Andhra Pradesh Project Execution pathway



A. Project Registration

Andhra Pradesh operates a single unified portal for project approvals without a published flowchart, supported by user manuals. Land applications require submission of break-up details across government, revenue, private, and patta categories along with acquisition status and any GoAP support required, with toposheet and revenue maps including boundaries and survey numbers. Grid prerequisites involve submission of evacuation feasibility at the application stage, with full grid connectivity not required upfront; STU processes and grants connectivity, publishes substation capacities quarterly on the NREDCAP website, and grid connectivity is pursued during the construction phase with 50% land possession.

Table 68 : Andhra Pradesh Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		- Yes, Single unified portal - No flow chart - user manuals			Online portal
Digital Portal Interface		Yes, Single unified portal			Online portal
Documentation	Pre-Requisites for land	- Submits land break-up (government/revenue/private/patta), acquisition status, GoAP support needed - Topo-sheet and revenue maps with boundaries and survey numbers required - Developer specifies land requirement in capacity allotment application.			Andhra Pradesh Integrated Clean Energy Policy 2024 - Orders Issued -
	Pre-Requisites for grid	- Evacuation feasibility submitted at application stage - full grid connectivity not required upfront - STU processes and grants grid connectivity; publishes substation capacities quarterly on NREDCAP website - Grid connectivity pursued during construction phase with 50% land			Clauses 5.3, 5.4, 5.13, 5.5 clause a-g, 17.12 (Allotment milestone a5); Operational

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
		possession - full land ownership not required at application			<u>Guidelines</u> <u>Cl</u> <u>7.1, 7.2,</u> <u>7.3,</u> <u>7.4(b)(iii),</u> <u>7.5, 7.6,</u> <u>8(a)</u>

B. Land Acquisition

Andhra Pradesh supports four land categories — government/revenue, private/patta, forest, and waterbody — with a 2.5 acres/MW area norm. Government land follows a multi-stage allotment via NREDCAP, District Collector, Energy Department, CCLA, and APLMA on first-come-first-serve basis with lease terms up to 30 years; private land is developer-procured with SNA approval. Deemed non-agricultural status is automatic with no conversion fee. Wind projects are exempt from APPCB NOC, with forest diversion facilitated by NREDCAP at developer cost through the single desk portal.

Table 69 : Andhra Pradesh Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment	-	4 eligible land categories: Government/Revenue, Private/Patta, Forest, Waterbody (floating projects) - Area norm: 2.5 acres/MW for wind projects - Private/Patta land: developer-procured directly, SNA approval required - Government land: NREDCAP application, multi-stage allotment via District Collector, Energy Department, CCLA, APLMA; advance possession granted for initial construction - Allotment basis: first-come-first-serve, lease term up to 30 years		NREDCAP, District collector, Chief Commissioner,	<u>Andhra Pradesh Integrated Clean Energy Policy 2024</u> <u>- Cl</u> <u>5.3, 5.4,</u> <u>and 17.12,</u> <u>5.13, 5.14,</u> <u>17.3(i)</u> <u>-</u> <u>Operational Guidelines</u> <u>2025,</u> <u>Cl</u> <u>7.1, 7.2,</u> <u>7.5, and</u> <u>7.6, 7.3</u>
Land use conversion	-	- Deemed non-agricultural status: automatic for Clean Energy Projects - One-time application to Revenue Department for conversion - No land conversion fee payable			<u>Andhra Pradesh Integrated Clean Energy Policy 2024</u> <u>- Cl</u> <u>5.14 and</u> <u>17.3(i),</u> <u>No change to this</u> <u>Clause in</u> <u>Latest</u> <u>Amendment to the AP</u> <u>ICE policy</u> <u>2024</u> <u>-</u> <u>Operational Guidelines</u> <u>2025 -</u> <u>Cl</u> <u>5,</u>
Statutory Approvals	Forest and environmental clearance	- Wind projects exempt from APPCB NOC and Consent for Establishment - Applications routed through SNA; NREDCAP facilitates diversion under Forest Conservation Act; costs borne by developer		Andhra Pradesh Pollution Control Board, NREDCAP, State Nodal agency	<u>Andhra Pradesh Integrated Clean Energy Policy 2024</u> <u>- Cl</u> <u>5.14 and</u> <u>17.3(i),</u> <u>No change to this</u> <u>Clause in</u> <u>Latest</u> <u>Amendment to the AP</u> <u>ICE policy</u> <u>2024</u> <u>-</u> <u>Operational Guidelines</u> <u>2025 -</u> <u>Cl</u> <u>5,</u>
	NOC requirements and approval structure	- Single window clearance via NREDCAP Unified/Single Desk Portal - Permissions to be taken not mentioned in policy		NREDCAP, APTRANS CO, APDISCO Ms, State	<u>Andhra Pradesh Integrated Clean Energy Policy 2024</u> <u>- Cl</u> <u>5.14 and</u> <u>17.3(i),</u> <u>No change to this</u> <u>Clause in</u> <u>Latest</u> <u>Amendment to the AP</u> <u>ICE policy</u> <u>2024</u> <u>-</u> <u>Operational Guidelines</u> <u>2025 -</u> <u>Cl</u> <u>5,</u>

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy Clause &
				Nodal agency	6.2, and 6.3. Single Portal

C. Grid Connectivity

Connectivity applications are routed through the NREDCAP single desk portal to APTRANSCO, with a unique project ID issued for tracking and quarterly substation availability published online. Evacuation feasibility is assessed based on capacity, location, pooling substation, grid point, and voltage level. Developers may either lay the connecting line at own cost with asset transfer before commissioning, or fund full external evacuation to CTU, paying ₹25 lakh/MW or actual cost whichever is higher, with transmission charges exempted for project life. Connectivity transfer is permitted unlimited times to subsidiaries, parents, or affiliates via NREDCAP with no transfer fee, with the original allottee retaining step-in obligation on affiliate default

Table 70 : Andhra Pradesh Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy Clause &
Connectivity Application and Eligibility	Single Window Portal	- NREDCAP Unified/Single Desk Portal: single window for grid connectivity approvals - Applications routed to APTRANSCO (STU/nodal agency) for processing - Unique Project Identification Number issued for tracking - Quarterly substation availability published on NREDCAP website - RE Park: provision exists but limited to solar energy		APTRANSCO	Andhra Pradesh Integrated Clean Energy Policy 2024 -Clauses 5.5 and 5.16, 17.1.17.11 Operational Guidelines 2025 -Clauses 5.8(a), 5.5(g)(e), 17.12, 8(e), 8(f), 8(i), 8(b), 8(d), and 8(l), 12(a) to 12(i), APERC Regulation 3 of 2017, Clause 13. Portal Link
Feasibility Assessment and Connectivity Grant	Connectivity Grant	- APTRANSCO/APDISCOMs assess evacuation feasibility based on capacity, location, pooling substation, grid point, line, and voltage level - Option 1: Developer lays connecting line to STU at own cost, transfers asset before commissioning (or STU builds at developer's cost); transmission charges and losses per APERC Tariff Order - Option 2: Developer funds full external evacuation to CTU under STU supervision, handed over before commissioning, or pays ₹25 lakh/MW or actual cost (whichever higher); O&M charges for bays apply, transmission charges exempted for project life, energy losses not exempted		APTRANSCO, APDISCOMs	
Transfer of Connectivity		- Project/SPV transfer: full or partial, unlimited times, to 100% subsidiaries/parent/affiliates via NREDCAP, no transfer fee - Affiliate must have requisite technical and financial capability - Original allottee retains step-in obligation if affiliate defaults - Applies to all Clean Energy Projects under the policy	Transfer is intimated to the Developers within 7 working days	State Nodal agency, State Investment Promotion Board, State Investment Promotion Committee,	Amendment to AP ICE Policy, 2024, Point 4 No change to the clause in Amendment to

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
					<u>Operational Guidelines AP ICE Policy 2024</u>

D. Right of Way

Andhra Pradesh has not prescribed a state-specific interconnection framework for clearances, RoW permissions, or dispute resolution; all three default to the Telegraph Act, 1885. Compensation follows central policy under the Electricity Act, 2003 and Indian Telegraph Act, 1885, with state governments permitted to adopt these guidelines in entirety or issue modified guidelines; where no state specification exists, central guidelines govern land value determination.

Table 71 : Andhra Pradesh Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	No State Specified framework, Mainly Follows Telegraph Act, 1885			<u>Order Referring to approval needed as per telegraph act, 1885, Clause 4(a)</u>
	RoW Permissions and Approvals	No State Specified framework, Mainly Follows Telegraph Act, 1885			
Compensation Framework and Payment		- As per the Central Policies- Electricity Act, 2003 and Indian Telegraph Act, 1885 - State Governments may adopt these guidelines in their entirety or issue their own modified guidelines. These guidelines shall apply in cases where State Governments have yet to specify the manner of determination of market value of land.			<u>Compensation Guidelines for Transmission Lines</u> <u>Central Guidelines for RoW compensation, Section 1, Clause 1</u>
Dispute Resolution and Closure		No State Specified framework			

E. Commissioning

Andhra Pradesh requires CEIG certification up to the pooling substation, with APTRANSCO/APDISCOMs inspecting evacuation infrastructure before energisation. Metering follows CEA Metering Regulations 2006 with NABL-accredited testing; cluster-based 33 kV wind projects require both common feeder and individual metering, with real-time generation data supplied to SLDC. Synchronisation approval is issued post-inspection, with forecasting tools mandated before commissioning and grid power during testing charged at Commission-determined tariffs. COD is the date of first grid synchronisation, with day-ahead schedules required from 00:00 hours and project completion subject to statutory authority certification.

Table 72 : Andhra Pradesh Commissioning

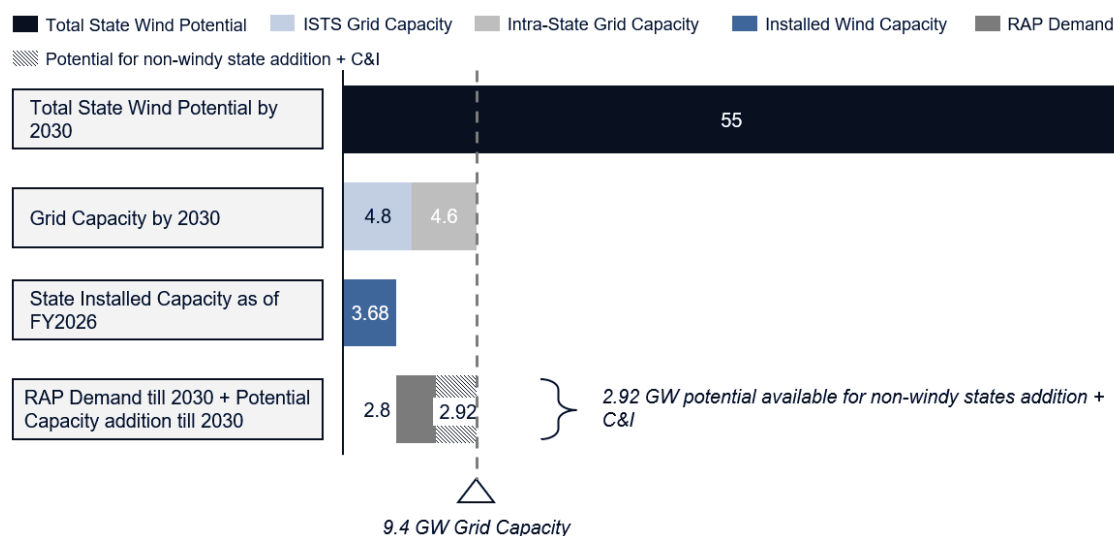
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		- CEIG certification required for all electrical installations up to pooling substation - APTRANSCO/APDISCOMs inspect evacuation infrastructure before energisation - Developer obtains temporary power supply from APDISCOM for construction		Chief Electrical Inspector General, APTRANSCO, APDISCOMs	<u>Andhra Pradesh Integrated Clean Energy Policy 2024</u> - <u>Clauses 5.5.</u>
Metering, Protection and SCADA		- Metering per CEA Metering Regulations 2006; NABL-accredited testing - Installation/sealing by authorised APTRANSCO/APDISCOM officers - Cluster-based wind projects on 33 kV: common feeder metering + individual project metering - Developers must provide unit specifications, real-time generation parameters, and weather data to SLDC		APTRANSCO, APDISCOMs	<u>APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation)</u> - <u>Clauses 4.2(a) and 4.2(b), 4.8(a), 4.8(b)</u>
Grid Synchronisation and Trial Run		- APTRANSCO/APDISCOM inspect evacuation, witness testing, issue synchronisation approval for COD - Grid power during testing/commissioning charged at Commission-determined tariffs - Forecasting tools required before commissioning — directly or through QCA		APTRANSCO, APDISCOMs	<u>APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation)</u> - <u>Clause 4.4</u>
Commissioning Certificate and COD		- APTRANSCO/APDISCOM grants synchronisation approval; COD = date of first grid synchronisation - Day-ahead schedules required from 00:00 hours on COD - Project completion only after inspection, testing, and issuance of completion certificate by statutory authority	Day-ahead scheduling from COD	APTRANSCO, APDISCOMs	<u>APERC (Forecasting, Scheduling and Deviation Settlement of Solar and Wind Generation)</u> - <u>Clause 4.4</u> <u>NREDCA Operational guidelines for ICE 2024, Article 6.1</u>

5.6 Madhya Pradesh

5.6.1 Demand Enablement

Madhya Pradesh holds 55 GW wind potential, with 9.4 GW grid capacity supporting 2.8 GW RAP demand and 2.92 GW additional potential for C&I and non-windy states in addition to existing installed capacity of 3.68 GW.

Figure 15 : Madhya Pradesh wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Madhya Pradesh relies on NIWE's national-level wind resource mapping at the state level, with no state-sponsored assessment conducted and no defined frequency. The state's energy plan operates on a five-year cycle (2025–2030), with planned and additional wind capacity defined in the RAP document.

Table 73 : Madhya Pradesh Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment (State/NIWE)	Wind Resource Mapping	• State yet to release a specific wind resource mapping carried out, relies on NIWE study	NIWE Prepared report for Madhya Pradesh
	Frequency of assessment	• No particular frequency is defined	
	Geographical Level of depth of assessment	• Wind resource mapped at State level	
Wind in long term energy plan	Frequency of plan	• 5 Years, 2025-2030	Madhya Pradesh Renewable Energy Policy-2026
	Wind capacity defined in RAP document	• Yes, wind capacity planned and additional defined in RAP document	CEA RAP document for Madhya Pradesh, table 12

B. Grid Plan

Madhya Pradesh releases a 5-year rolling transmission plan covering 2024-25 to 2028-29 containing grid expansion plans, with a substation list and indicative available margins published for RE integration.

Table 74: Madhya Pradesh Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	• Yes, 5-year rolling plan, 2024-25 to 2028-29	Capital Investment Plan for transmission, 2024-25 to 2028-29 <u>List of substations with available margins</u>
	Substation list for RE integration with annual progress	• Substation list and indicative available margin is published	

C. Utility Allocation, and RPO Compliance

Madhya Pradesh's RPO targets align with centrally prescribed MoP levels. DISCOMs narrowly missed the wind RPO target of 3.36% in FY2025-26, achieving 3.26%. Wind-specific and overall RE-level RPPO compliance is publicly reported annually.

Table 75: Madhya Pradesh Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	• State is aligned with MOP	<u>AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025-26 - Table 28</u>
	DISCOM compliance	• RPO target was 3.36% for FY2025-26, state achieved 3.26%.	<u>AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025-26 - Table 28</u>
	Public availability of compliance document	• Overall, RE level RPPO compliance is visible in public documents • Wind specific RPO compliance included	<u>AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025-26 - Table 28</u>

D. C&I and Open Access rules

Madhya Pradesh permits open access from 100 kW and above under GEOA, 1 MW and above for conventional intrastate, and no capacity limit for RE generators. GEOA is granted within 15 days via CNA portal; LTOA/MTOA follow 30 and 45-day study timelines respectively, with STOA processed in 24–72 hours. STU is nodal agency for LTOA/MTOA and SLDC for STOA, with processing at minimum Superintending Engineer rank. Captive criteria, audit, and SPV transfer provisions remain undefined.

Table 76 : Madhya Pradesh C&I and Open Access rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	• Consumer 100 kW and above for GEOA (contracted demand or sanctioned load) • No load limit for captive consumers • Conventional intra-state OA: 1 MW and above • RE generators/users: no capacity limit, subject to operational constraints	<u>MPERC TC for OA 2021, Regulation 3.3;</u> <u>MPERC GEOA Regulation 2023 (G-46 of 2023), definition of GEOA Consumer</u>
	Contract demand	• OA options: up to CD, above CD, or combination • No notional CD multiplier • Demand beyond OA + CD billed by Discom at applicable tariff and STOA (non-green) disallowed if prior FY RPO not met	<u>MPERC TC for OA 2021 (Sixth Amendment, 2026), Regulation 13.2 + Annexure-II;</u> <u>Sixth Amendment, 2025, MPERC</u>

Parameter	Sub-parameter	State Practice	Policy Name & Clause
			<u>Regulation Clause-13.2, Annexure-II-Clase-II</u>
Approvals	Alignment with GEOA	- Granted/deemed granted within 15 days 100 kW threshold under central GEOA framework - CNA portal filing	<u>MPERC GEOA Regulation 2023 (First Amendment, 2023), Regulation 3.3, 8.1.1;</u> <u>The latest GEOA amendment doesn't contain any clause for this provision-2024</u> <u>Electricity (Promoting RE Through GEOA) Rules 2022 r/w Amendment Rules 2023</u>
	Timeline	- LTOA/MTOA: feasibility in 30 days, system study in 45 days; STO: 24–72 hrs based on duration; deemed granted if timeline exceeded - GEOA: 15-day Nodal Agency approval	<u>MPERC TC for OA 2021, Regulation 9.1 (Time Schedule Table); Latest amendment doesn't contain any clause for this provision-2025</u> <u>GEOA Reg. 2023, Reg. 8.5.1(ii)</u>
Captive/Group Captive	Additional approval required in the state	- Copy filed with Distribution Licensee; insolvent/bankrupt or >2 months arrears ineligible - Application fees: ₹1,00,000 (LTOA), ₹50,000 (MTOA), ₹5,000 (STOA); non-refundable	<u>MPERC TC for OA 2021, Regulation 8.3; Regulation 3.3</u> <u>The latest GEOA amendment doesn't contain any clause for this provision-2024</u>
	Additional stakeholder required in the state	- STU: Nodal Agency for LTOA/MTOA; SLDC: Nodal Agency for STO - Processing by officer not below Superintending Engineer rank - Distribution and Transmission Licensees nominate coordinating officers - Captive criteria, audit process, SPV transfer process: not mentioned	<u>MPERC TC for OA 2021, Regulation 8.1</u> <u>The latest GEOA amendment doesn't contain any clause for this provision-2024</u>

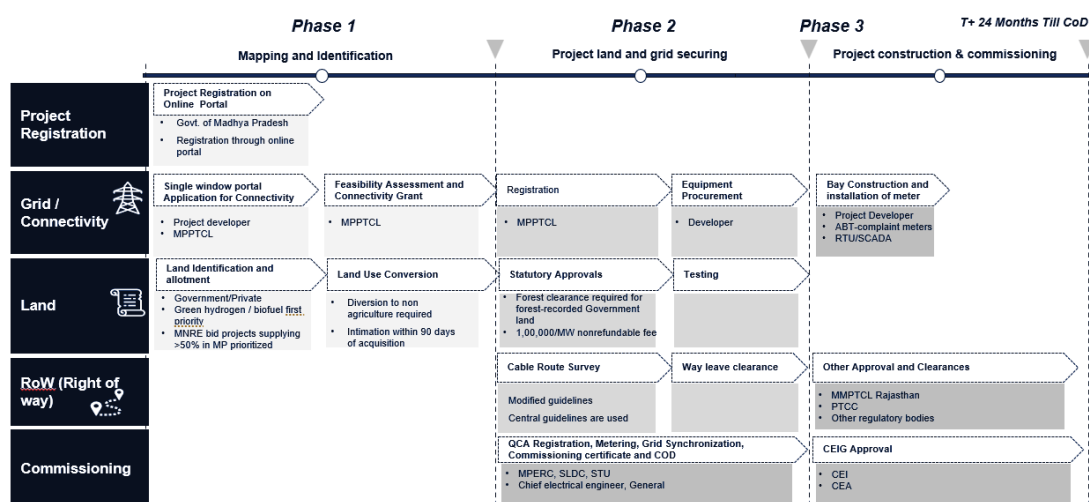
Table 77: Madhya Pradesh DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	MPPKVCL (East DISCOM)	MPPKVCL (West DISCOM)	MPMKVCL (Central DISCOM)	Source
Transmission	Transmission Charge	INR/Unit	0.410	0.410	0.410	<u>MP SLDC portal</u>
	Transmission losses	INR/Unit	0.010	0.010	0.010	<u>MP SLDC portal</u>
Wheeling	Wheeling Charges	INR/Unit	0.180	0.180	0.180	<u>MP SLDC portal</u>
	Wheeling losses	INR/Unit	0.008	0.008	0.008	<u>MP SLDC portal</u>
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	1.430	1.430	1.430	<u>AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY</u>

Category	Sub-category	Unit	MPPKVCL (East DISCOM)	MPPKVCL (West DISCOM)	MPMKVCL (Central DISCOM)	Source
	CSS Charges- Commercial	INR/Unit	1.430	1.430	1.430	TARIFF ORDER FOR FY 2025- 26- Table 89 AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025- 26- Table 89
Additional Surcharge		INR/Unit	1.240	1.240	1.240	AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025- 26- Table 97
SLDC		INR/Unit ($\times 10^{-6}$)	0.090	0.090	0.090	AGGREGATE REVENUE REQUIREMENT AND RETAIL SUPPLY TARIFF ORDER FOR FY 2025- 26- Clause 2.114

5.6.2 Project Execution

Figure 16: Madhya Pradesh Project Execution Pathway



A. Project Registration

Madhya Pradesh lacks a single window clearance mechanism and published process flowchart; registration is handled through an online portal, with offline registration permitted until the portal is operational, at a fee of ₹1 lakh/MW for projects above 1 MW. Land applications require a valid PPA, LoA, work order, or LUPA registered with the nodal agency, with government land allotted on a defined

priority hierarchy. Grid prerequisites require submission of the nearest substation name, distance from the project site, and proposed connection voltage.

Table 78 : Madhya Pradesh Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		- No single window for clearance exists. - No flowchart for process/user manual			<u>MP RE policy, 2.2.2, 3.1.2, 3.1.3, 3.1.4, 3.2.3, 3.1, annexure 2</u>
Digital Portal Interface		The registration is done through an online portal			
Documentation	Pre-Requisites for land	- RE projects with valid PPA/LoA/ work order or LUPA registered with Nodal Agency - Online portal to be used; offline registration until portal is functional - Registration cum facilitation fee: ₹1 lakh/MW for projects >1 MW		Nodal agency, LUPA	
	Pre-Requisites for grid	Developer must submit – Name of the nearest substation, distance of nearest substation from project site, capacity of substation voltage at which project is proposed to be connected			

B. Land Acquisition

Madhya Pradesh allocates government land through a defined priority framework, with Green Zones receiving a 50% rebate on DLC rates on a first-come-first-serve basis and MPPTCL/DISCOMs prioritising grid augmentation within these zones. Agricultural land diversion requires application before the Sub-Divisional Officer with premium payable under Diversion Rules, with a 90-day intimation period, one-year diversion deadline, and three-year commencement requirement; 50% stamp duty reimbursement applies on private land purchase. Forest clearances follow central processes under the Forest Conservation Act, 1980 through MoEFCC, and revenue land use is governed through a LUPA between MPUVNL and the developer with a 25-year tenure.

Table 79 : Madhya Pradesh Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment	-	- Government land allotment process defined with priority framework: - green hydrogen/biofuels, - RUMSL/State entities, - MNRE-approved projects (>50% power within MP), - State captive projects, - projects >250 MW (up to 50% land), - projects 100–250 MW (up to 25%) — subject to PPA and CTU connectivity - Provision of government land for RE zones: Green Zones get concessional rate (50% rebate on DLC), first-come-first-serve basis - Grid augmentation and new substations/evacuation lines by MPPTCL/Discoms on priority for Green Zones		State Government, MPUVNL (Nodal Agency), MPIDC (Single Window Secretariat), District Collector, DLIC	<u>MP RE policy - 2025 clause 3.1, 12.2, 12.3</u>
Land use conversion	-	- Agricultural to non-agricultural land diversion required; application before Sub-Divisional Officer - Premium payable per Diversion Rules; Record of Rights updated post-diversion	Intimation: 90 days, Diversion: 1 year, Commence	Sub-Divisional Officer (SDO); Collector; Single	<u>Madhya Pradesh Land Revenue Code, 1959 - Sections</u>

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
		- Buyer must intimate authority within 90 days, complete diversion within 1 year, commence use within 3 years 50% stamp duty reimbursement on private land purchase - Priority for projects supplying >50% RE energy to MP DISCOMs	ment: 3 years	Window System (routing).	<u>59, 108, 114, 172, 258.</u> <u>rsion of Land Rules (notified under Section 59 and Section 258 of MPLRC).</u> <u>Latest Land revenue act amendment doesn't have any clause regarding this provision</u> <u>Madhya Pradesh Renewable Energy Policy, 2025 - Stamp Duty Reimbursement clause section 4, 3.2.2</u>
Statutory Approvals	Forest and environmental clearance	Forest land (or deemed forest): developer must obtain clearance under Forest Conservation Act 1980 before project implementation	Central timelines under FC Act and EIA Notification.	Ministry of Environment, Forest and Climate Change (MoEFCC)	<u>Madhya Pradesh Renewable Energy Policy, 2025 -3.1.6, (3.1.5), Annexure - 1.2</u>
	NOC requirements and approval structure	Revenue land use permission via LUPA between Nodal Agency and developer	LUPA tenure: 25 years	MPUVNL (Nodal Agency), MPIDC (Single Window), District Collector, DLIC, Chief Electrical Inspector, State Government	

C. Grid Connectivity

Madhya Pradesh has no single connectivity portal; applications are submitted via Format-I to MPPTCL with a non-refundable feasibility fee of ₹1 lakh for 132kV and above or 33kV dedicated feeders, exempt for TBCB licensees and DISCOMs. MPPTCL processes applications within 60 days through load flow studies covering bay requirements, transmission line assessment, and system strengthening, with applicants required to furnish data within 15 days. Connectivity transfers are permitted once before

issuance of a connectivity offer; post-offer changes require a fresh application, and withdrawals bar re-application for six months.

Table 80 : Madhya Pradesh Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	- No single portal; connectivity application via Format-I to STU/MPPTCL - Feasibility study fee: ₹1,00,000 (non-refundable) for 132kV+ or 33kV dedicated feeders; TBCB licensees/DISCOMs exempt	Formal offer-60Days	MPPTCL (STU)	Guidelines for Grant of Connectivity to InSTS (2023) - Clause 3.1 , 3.2 , 3.3 , 3.4 , 3.6 , Clause 5(i) , 4.1
Feasibility Assessment and Connectivity Grant	Connectivity Grant	- STU processes application within 60 days via load flow studies, bay requirements, transmission line and system strengthening assessment; conveys to Distribution Licensee with intimation to applicant - Applicant/users must furnish requested data within 15 days	Application process-60 Days	MPPTCL (STU)	
Transfer of Connectivity		- Transfers of capacity or change in project details before issuing a connectivity offer are allowed once. - Post-offer, changes require a fresh application; withdrawals bar re-application for 6 months.		MPPTCL (STU)	

D. Right of Way

Madhya Pradesh requires applicants to obtain clearances independently for line routes crossing forest, railway, aerodrome, defence, power line, or telecom areas from respective authorities. Compensation follows central policy under the Electricity Act, 2003 and Indian Telegraph Act, 1885, with state governments permitted to adopt or modify these guidelines; central guidelines govern where no state specification exists. Disputes between applicants and private landowners are referred to the District Magistrate, who determines compensation payable.

Table 81 : Madhya Pradesh Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	Applicant obtains clearances for line routes crossing forest, railway, aerodrome, defence, power line, or telecom areas from respective authorities			GoMP, Energy Department Order on transmission lines, Annexure -IV, clause iv
	RoW Permissions and Approvals	Line routes through forest, railway, aerodrome, defence, power line, or telecom areas: applicant obtains clearance from respective authority			
Compensation Framework and Payment		- Governed by Central Policies — Electricity Act 2003 and Indian Telegraph Act 1885 determination of market value of land. - States may adopt centrally or issue modified guidelines; central guidelines apply where state has not specified land market value determination			Central Guidelines for RoW compensation, Section 1, Clause 1
Dispute Resolution and Closure		Disputes between applicant and private landowners referred to District Magistrate; applicant pays compensation as determined			GoMP, Energy Department Order on transmissio

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
					n lines, Annexure -IV, clause iv

E. Commissioning

Madhya Pradesh requires CEIG approval for SLD and layout at DPR stage, a Connection Agreement before any power interchange, and mandatory MPNRED registration with final compliance clearance. Metering uses ABT-compatible special energy meters with AMR integrated to SLDC; RTU/DAS follows IEC 870-5-101 with dedicated VSAT communication, GPRS/GSM prohibited on cybersecurity grounds. Synchronisation date must be intimated to SLDC one month in advance and commissioning three months in advance, with QCA registration mandatory for wind projects of 10 MW and above at 33 kV and above. COD is declared post-commissioning, marking the start of the tariff period with depreciation applied pro-rata if mid-year.

Table 82 : Madhya Pradesh Commissioning

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Electrical and Safety Approvals		- CEIG approval for SLD and layout required at DPR stage - Connection Agreement before any power interchange with InSTS - MPNRED registration/WPDA/Comfort Letter with MP New and Renewable Energy Department mandatory - Final clearance from MPNRED compliance report required - Statutory clearances from State Government to be submitted	Connection agreement: 60 days from offer. Commissioning intimation: 3 months in advance	CEIG; STU (MPPTCL); SLDC; MPNRED; MPERC	Connectivity Guidelines 2023, Clauses 18.1, 16.2, 16.3, 16.4; Format-I Sl. No. 11, 13, 14, 16, 21
Metering, Protection and SCADA		- ABT-compatible Special Energy Meters (main + check) at all interface points; AMR integrated with SLDC server - RTU/DAS per IEC 870-5-101; dedicated VSAT/communication link mandatory — GPRS/GSM/internet prohibited on cyber-security grounds - Protection schemes per MPEGC Protection Code; disturbance recorders, event loggers, fault locators, WAMS/PMU with time synchronisation required	SEM reading communication: within 24 hours, Existing consumer SEM installation : 6 Months	MPERC; STU/MPP TCL; SLDC; QCA; Distribution Licensee	MPEGC 2019 (Revision-II); Connectivity Guidelines 2023 Clauses 8, 9.4, 10.9, 11, 14, 15; MPERC TC OA Regulations 2021 Clause 17; FSD Regulations 2018 (3rd Amendment) Clause 4.3; MPERC F&S 2018 Annexure-I
Grid Synchronisation and Trial Run		- Connection Agreement mandatory before transmission of electricity - Synchronisation date intimated to SLDC 1 month in advance; commissioning timeline 3 months in advance	Synchronisation intimation: minimum	SLDC; STU/MPP TCL; other InSTL; Distribution	Connectivity Guidelines 2023 Clauses

Policy harmony for 10 GW annual wind capacity additions

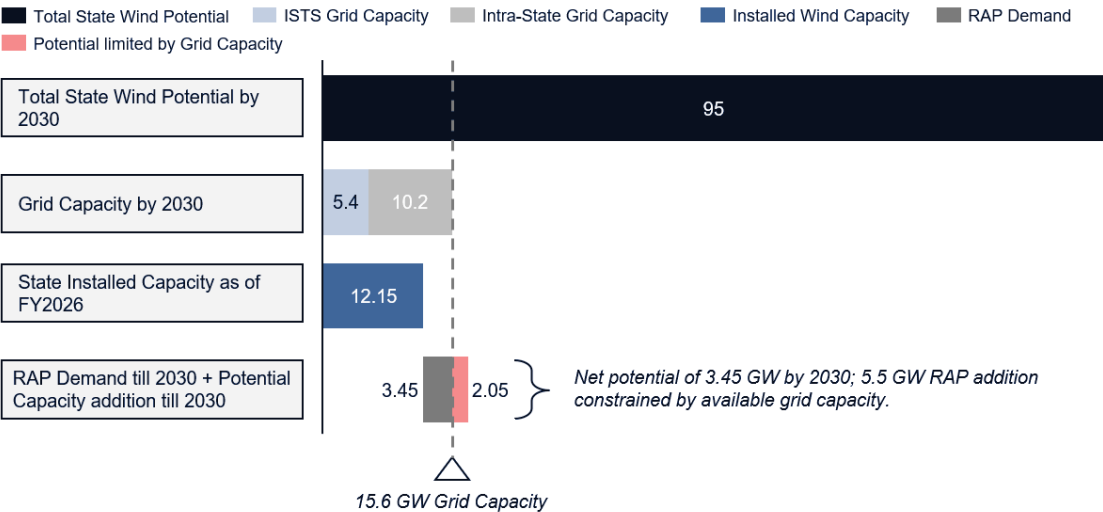
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
		- QCA registration with SLDC mandatory for wind ≥ 10 MW and solar ≥ 5 MW at 33 kV+ - Separate Distribution Licensee connection for synchronisation/auxiliary drawl during non-generation for REGS with ESS	1 month in advance.	n Licensee	<u>18.1, 20.5, 20.6;</u> <u>MPERC TC OA Regulations 2021;</u> <u>FSD Regulations 2018 (3rd Amendment) Clause 4.3(v)</u>
Commissioning Certificate and COD		- Pre-commissioning: meters installed and tested, SCADA and communication ready, cyber security and reactive power arrangements in place - STU informed 3 months before commissioning; SLDC informed 1 month before synchronisation for charging clearance - Commissioning Certificate per IEGC 2023 Chapter 5; compliance with Connection Agreement, CEA Regulations, MPEGC required - COD declared post-commissioning — start of Tariff Period and Useful Life; depreciation begins from COD, pro-rata if mid-year	STU intimation: 3 months, SLDC intimation: 1 month before synchronisation	SLDC; STU; MPERC	<u>Connectivity Guidelines 2023 Clause 20.1, 20.2, 20.3, 20.4, 20.5, 20.6;</u> <u>MPERC TC for Tariff Determination from RE Sources Regulations 2024, Regulations 2.1 (dd), 16.3</u>

5.7 Tamil Nadu

5.7.1 Demand Enablement

Tamil Nadu holds 95 GW wind potential, with 15.6 GW grid capacity supporting 3.45 GW RAP demand and 2.05 GW additional potential constrained by available grid capacity, in addition to existing installed capacity of 12.15 GW

Figure 17 : Tamil Nadu wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Tamil Nadu relies on NIWE's national-level wind resource mapping at the state level, with no state-sponsored assessment conducted and no defined frequency. No specific plan frequency is mentioned, and the RAP defines planned and additional wind capacity aligned with Tamil Nadu's 2030 RPO targets.

Table 83 : Tamil Nadu Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment (State/NIWE)	Wind Resource Mapping	• State yet to release a specific wind resource mapping carried out, relies on NIWE study with public access of the document	NIWE Prepared report for Tamil Nadu
	Frequency of assessment	• No frequency	NIWE Prepared report for Tamil Nadu
	Geographical Level of depth of assessment	• Wind resource mapped at State level	NIWE Prepared report for Tamil Nadu
Wind in long term energy plan	Frequency of plan	• No clause mentioned	
	Wind capacity defined in RAP document	• Yes, wind capacity plan and additional defined in RAP document	CEA RAP document for Tamil Nadu-Table 4
	Is RAP aligned with RPO	• Yes, RAP is aligned with 2030 RPO targets	CEA RAP document for Tamil Nadu-Table 4, Table 7

B. Grid Plan

Tamil Nadu publishes substation details up to 2026-27 containing grid expansion plans; it is yet to release wind-specific pooling substation details covering dedicated RE integration points.

Table 84 : Tamil Nadu Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	• Substation details available till 2026-27	<u>ENERGY DEPARTMENT POLICY NOTE 2025 - 2026</u>
	Substation list for RE integration with annual progress	• No wind specific pooling substations mentioned	

C. Utility Allocation, and RPO Compliance

Tamil Nadu's wind RPO targets align with centrally prescribed MoP levels. DISCOM wind RPO compliance is derived rather than directly stated, with a wind RPO target of 1.45%. Source-wise generation numbers and compliance are publicly available through the tariff order.

Table 85: Tamil Nadu Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	• Yes, wind RPO targets are aligned with MoP	<u>Tamil Nadu Electricity Regulatory Commission (Framework for Resource Adequacy) Regulations, 2025</u>
	DISCOM compliance	• DISCOM RPO compliance is derived and not directly stated, wind RPO target was 1.45%	<u>True up order FY2024, Table 2-44</u>
	Public availability of compliance document	• Yes, tariff order with source wise generation numbers is publicly available	<u>ENERGY DEPARTMENT POLICY NOTE 2025 - 2026</u>

D. C&I and Open Access rules

Tamil Nadu's open access framework permits EHT/HT consumers from 63 kVA contracted demand, lower than the MoP-prescribed 100 kW threshold, with no limit for captive consumers. No application timelines are defined; SNA coordinates with STU and transmission and distribution licensees to publish GEOA information on CNA and SNA portals. Captive generating plants hold open access rights under Section 9 of the Electricity Act. SPV transfer provisions are not specified.

Table 86 : Tamil Nadu C&I and Open Access Rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	• EHT/HT threshold: 63 kVA contracted demand • No threshold for captive consumers	<u>The Tamil Nadu Electricity Regulatory Commission (Terms and conditions for Green Energy open Access) Regulations, 2025-12(1), T&C (3), 8, 6(3), 12(2)</u>
	Contract demand	• MoP suggests GEOA threshold of 100 kW; no limit for captive • Tamil Nadu allows OA for EHT/HT consumers at 63 kVA contracted demand	
Approvals	Timeline	• No timeline mentioned in the document	
	Additional stakeholder required in the state	• SNA coordinates with STU, Transmission and Distribution Licensees to publish GEOA information on CNA and SNA portals	
Captive/Gro up Captive	Definition/Ve rification & Monitoring	• Every person, who is qualified as a Captive Generating Plant (CGP) shall have the right to open access as per the provisions of Section 9 of the Act read with rules and Regulations framed under the Act	

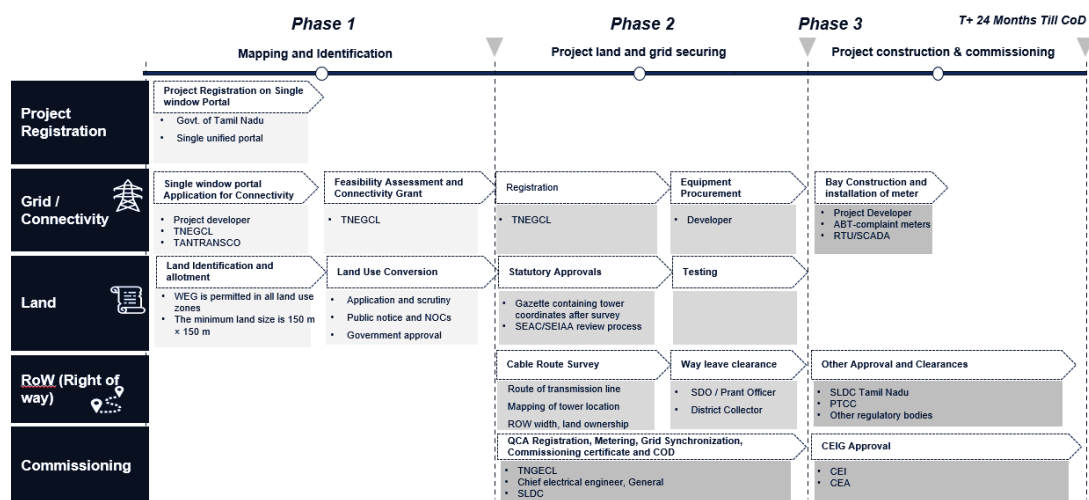
Parameter	Sub-parameter	State Practice	Policy Name & Clause
	Transfer of SPV	No clause mentioned	

Table 87: Tamil Nadu DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	TANGEDCO	Source
Transmission	Transmission Charge	INR/Unit	0.806	Transmission Charge
	Transmission losses	INR/Unit	0.000	
Wheeling	Wheeling Charges	INR/Unit	1.040	Determination of Tariff for Distribution for FY 2025-26
	Wheeling losses	INR/Unit	0.000	
Cross Surcharge	CSS Charges- Industrial	INR/Unit	1.990	Determination of Tariff for Distribution for FY 2025-26
	CSS Charges- Commercial	INR/Unit	2.490	Determination of Tariff for Distribution for FY 2025-26
Additional Surcharge		INR/Unit	N/A	
SLDC		INR/Unit (x10 ⁻⁶)	0.899	SLDC framework

7.5.2 Project Execution

Figure 18: Tamil Nadu Project Execution Pathway



A. Project Registration

Tamil Nadu has no single window clearance mechanism, no digital portal, no standard project registration guidelines for renewable energy developers, and no defined grid prerequisite process.

Table 88 : Tamil Nadu Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		No single portal			
Digital Portal Interface		No digital portal			
Documentation	Pre-Requisites for land	No standard guidelines for process of project registration for renewable energy developers issued			
	Pre-Requisites for grid	This step does not exist in Tamil Nadu as per policies			

B. Land Acquisition

Tamil Nadu permits wind energy generation in all land-use zones under Rule 45, requiring a minimum land area of 150m × 150m and 7m public road access, with applicants required to be owners, leaseholders, or power-of-attorney holders. Land use conversion follows a multi-stage process involving site inspection, newspaper advertisement, a 30-day public objection period, NOC from relevant departments, and final Government Order with gazette publication. Forest and environmental clearances are processed through the Parivah portal and seiaa.tn.gov.in, with SEAC screening in 30–40 days and SEIAA final decision within approximately 70 days. NOC requirements mandate declaration of absolute land rights, site and topo plans by a registered professional, and confirmation that the site is free from water body, poromboke, or land acquisition encumbrances.

Table 89 : Tamil Nadu Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment	-	- Applicant must be owner, leaseholder, or power-of-attorney holder - WEG permitted in all land-use zones under Rule 45; minimum land 150m × 150m; minimum public road/access width 7m - Schedule I application with supporting documents required - Clearances: CEIG, TANGEDCO location clearance, civil aviation/defence (where applicable)		CEIG, TANGEDCO	<u>Combined development and building rules</u>
Land use conversion	-	- Application submission - Site inspection - Scrutiny and call for particulars - Newspaper advertisement 30-day public objection/suggestion period - NOC from respective departments (if applicable) - Local body remarks - Submission to Director, then Government - Government Order issued - Gazette publication			<u>Tamil nadu single window portal for planning permission</u>
Statutory Approvals	Forest and environmental clearance	- Application via Parivah portal - Fee payment via seiaa.tn.gov.in - File verification by unit - Screening before SEAC: 30–40 days - SEAC minutes upload: ~5 days - Placement before SEIAA: 20–30 days - SEIAA minutes upload: ~10 days - Final decision: 5 days			<u>SEIAA portal</u>
	NOC requirement	Declaration of absolute land rights and no government land encroachment			<u>Change of Land Use</u>

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
	s and approval structure	- Site and topo plans prepared by Registered Architect/Engineer/Town Planner per Tamil Nadu Combined Development and Building Rules 2019 - Undertaking to pay excess costs for newspaper publication, gazette notification, and other authority-levied charges - Site not a water body, poromboke, or covered under Land Ceiling Act, Land Reforms Act, or Land Acquisition Act			(CLU) - <u>Amendments to the Tamil Nadu Combined Development and Building Rules, 2019 – Section 9</u>

C. Grid Connectivity

Tamil Nadu requires contracted demand of 10 MW and above or supply at 66 kV and above for STU connectivity, with generating stations of 15 MW and above; applications are submitted to STU with a non-refundable fee, at 50% for RE and cogeneration sources. Connectivity is granted within 30 days of a complete application, with a Connectivity Agreement executed with STU or the distribution licensee, and a tripartite agreement required where connectivity is via a non-STU licensee. Fresh applications are required for material location changes or power quantum changes exceeding 10%.

Table 90 : Tamil Nadu Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	Eligibility: - Contracted demand ≥ 10 MW or supply at ≥ 66 kV; generating stations ≥ 15 MW or requiring connectivity at ≥ 66 kV - Application submitted to STU with non-refundable fee; 50% fee for cogeneration and RE sources - Fresh application required for material change in location or $>10\%$ change in power quantum	Connectivity-30 days Advance intimation of commissioning – 3 months earlier	STU, SLDC	<u>TAMIL NADU ELECTRICITY REGULATORY COMMISSION, GRID CONNECTIVITY AND INTRA-STATE OPEN ACCESS REGULATIONS, 2014 Section-4, 5</u> <u>TNERC Grid code-2026, 2014 – 7.2 (C) Latest amendment doesn't have any clause regarding this provision</u>
Grid Feasibility Assessment and Connectivity Grant	Connectivity Grant	- Application: submitted to STU (≥ 66 kV) or Distribution Licensee (≤ 33 kV) with non-refundable fee covering load flow/system study charges - Decision: connectivity granted within 30 days of complete application; fresh		STU	<u>TAMIL NADU ELECTRICITY REGULATORY</u>

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
		application required for material location change or >10% power change • Agreement: Connectivity Agreement with STU/licensee; tripartite agreement if connectivity via non-STU licensee			COMMISSION, GRID CONNECTIVITY AND INTRA-STATE OPEN ACCESS REGULATIONS, 2014 Section-6
Transfer of Connectivity		• No provision defined			

D. Right of Way

Tamil Nadu has no prescribed framework for crossing approvals, with RoW permissions handled without fixed timelines by District Magistrate, TANTRANSCO, and District Collectors. Compensation covers tower base area at 100% of assessed land value with a minimum of ₹50,000 for the first 3 cents, and RoW stringing corridor at 20% of assessed land value; beyond 3 cents, ₹10,000 per additional cent applies for lower slabs. No explicit dispute resolution mechanism exists; the revised policy relies on enhanced compensation and negotiated land value to avoid litigation.

Table 91 : Tamil Nadu Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	• No clause mentioned			
	RoW Permissions and Approvals	• No fixed timeline-based approval process prescribed		District Magistrate, TANTRANSCO, Revenue authorities, District Collectors	
Compensation Framework and Payment		• Tower base area (between four legs): 100% of assessed land value (Circle rate/Guideline value/Stamp Act) • RoW stringing corridor: 20% of assessed land value for diminution • Minimum payable for tower base: ₹50,000 for first 3 cents if assessed value < ₹50,000 • Beyond 3 cents: ₹10,000 per additional cent (lower slab); assessed value × cents for higher slab (> ₹16,667/cent)		District Magistrate, TANTRANSCO, District Collectors, Principal Secretary (Energy Department)	G.O. (Ms) No. 86 Energy (A1) Department dated 30.10.2019 - Clause 4(i) to 4(v)
Dispute Resolution and Closure		• No explicit dispute resolution mechanism; revised policy avoids litigation via enhanced compensation and negotiation, with negotiated land value as compensation basis		Revenue and Disaster Management Department, District Magistrate,	G.O. (Ms) No. 63 Energy (A1) Department dated 22.12.2017 - Clause 2; G.O.

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
				TANTRANSCO	(Ms) No. 281 Revenue and Disaster Management Department dated 07.09.2017

E. Commissioning

Tamil Nadu requires CEI/CEIG inspection with CON-4 report, developer affidavit, and a CMD/CEO/MD-signed compliance certificate to SLDC and STU before COD. ABT-compliant 0.2S class meters with protection settings are submitted for approval 30 days before trial run. Synchronisation requires 60-day preliminary and 30-day final notice to SLDC, TANTRANSCO, and TNGECL. Early commissioning before SCOD is at developer's risk, with TNGECL holding purchase rights at PPA tariff or the developer selling to third parties under a provisional commissioning certificate.

Table 92 : Tamil Nadu Commissioning

Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		- CEI/CEIG inspection of all components (modules, WTGs, inverters, transformers, transmission, protection); CON-4 Report submitted to STU - Developer affidavit certifying approvals obtained, indemnifying TNGECL against discrepancies - Pre-synchronisation: acceptance/performance test per CEA or identified agency - Pre-COD: CMD/CEO/MD-signed certificate to SLDC and STU confirming compliance with CEA Technical Standards and Grid Code			<u>Tamil Nadu Green Energy Corporation Limited-Section 1.1.5, 1.1.21, 4.9.1, 5.1.5, 5.1.3, 1.1.17, 9.18</u>
Metering, Protection and SCADA		- Developer installs ABT-compliant Main/Check/Standby meters (0.2S class), protection relays, SCADA/DAS at interconnection and plant end - Metering arrangement submitted to STU/GRID-INDIA for approval - Protection settings submitted to PCC; coordination approval required - All approvals/invoices submitted 30 days before trial run			<u>Tamil Nadu Green Energy Corporation Limited-Section 7.1.1, 7.2, 7.3</u> <u>The Tamil Nadu Electricity Regulatory Commission (Forecasting, Scheduling and Deviation Settlement)</u>

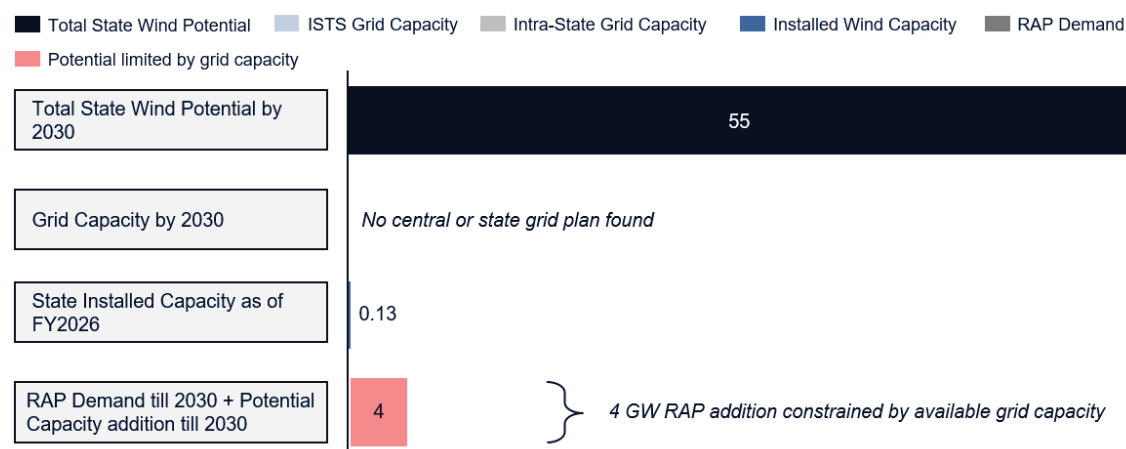
Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
					t and Related Matters for Wind and Solar Generation) Regulation, 2024.- 5.22, 8
Grid Synchronisation and Trial Run		- Developer issues 60-day preliminary and 30-day final written notice to SLDC, TANTRANSCO, TNGECL before synchronisation - Synchronisation permitted only after all connection conditions are met - Developer installs synchronisation equipment, scheduling and data transmission arrangements at own cost - Synchronisation executed only after approval of synchronisation scheme by head of concerned substation/Grid System	Notice to SLDC-60 days preliminary and 30 days final written		Tamil Nadu Green Energy Corporation Limited- Section 5, 5.4
Commissioning Certificate and COD		- Full commissioning permitted before SCOD; early commissioning at Developer's risk and cost - TNGECL may purchase early commissioned capacity at PPA Tariff 15-day prior intimation to TNGECL required per Commissioning Procedure - If TNGECL declines, Developer may sell to third party at own risk until SCOD; Provisional Commissioning Certificate issued up to SCOD	Early commissioning intimation: 15 days prior to SCOD		

5.8 Telangana

5.8.1 Demand Enablement

Telangana holds 55 GW wind potential, with no central or state grid capacity plan identified by 2030, supporting 4 GW RAP demand addition constrained by available grid capacity, in addition to existing installed capacity of 0.13 GW

Figure 19 : Telangana wind capacity potential 2030 (GW)



A. Demand Assessment & Energy Planning

Telangana relies on NIWE's wind potential atlas covering the state at district level, with no state-sponsored assessment conducted and no defined frequency. The state's energy plan operates on a ten-year cycle (2025–2035), with wind capacity addition defined in the RAP aligned with Telangana's 2030 RPO targets.

Table 93 : Telangana Demand Assessment & Energy Planning

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind resource assessment (State/NIWE)	Wind Resource Mapping	State is yet to sponsor a wind resource assessment, wind potential atlas study conducted by NIWE covers Telangana with public access to the document	<u>NIWE</u>
	Frequency of assessment	No particular frequency	
	Geographical Level of depth of assessment	District wise	<u>NIWE</u>
Wind in long term energy plan	Frequency of plan	10 years from 2025-2035	<u>Telangana clean and green energy policy 2025</u>
	Wind capacity defined in RAP document	Yes, Wind capacity addition mentioned in the RAP	<u>Resource Adequacy Plan (Generation) for the state of Telangana</u>
	Is RAP aligned with RPO	Yes, RAP is aligned with 2030 RPO targets	<u>Telangana clean and green energy policy 2025 – Table 4, Table 12</u>

B. Grid Plan

Telangana requires distribution licensees to file a Resource Plan covering both the Distribution Plan and Power Procurement Plan for two ensuing control periods; substation-wise details for RE integration are not specified.

Table 94 Telangana Grid Plan

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Transmission planning for wind	5-year rolling plan	Distribution licensee is required to file the Resource Plan which consists of both Distribution Plan (Business Plan) and Power Procurement Plan for a period of ensuing two (2) control periods	<u>Southern power distribution company of Telangana- page 11</u>
	Substation list for RE integration with annual progress	Substation -wise details are not mentioned	

C. Utility Allocation, and RPO Compliance

Telangana's wind RPO targets align with centrally prescribed MoP levels. DISCOMs have complied with the stated RPO target for FY2024-25, with compliance directly stated in publicly available tariff documents.

Table 95: Telangana Utility Allocation, and RPO Compliance

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Wind RPO architecture	Alignment with MoP	Yes, wind RPO targets are aligned with MoP	<u>Resource Adequacy Plan (Generation) for the state of Telangana</u>
	DISCOM compliance	DISCOM Have Complied with Stated RPO Target for the year FY2024-25	<u>TERC POWER DISTRIBUTION COMPANY OF TELANGANA LIMITED- 3.26.12</u>
	Public availability of compliance document	RPO compliance is directly stated in tariff documents	

D. C&I and Open Access rules

Telangana's open access framework permits general OA above 1 MVA, green energy OA from 100 kW, and future expansion OA up to 1 MW, with no load limitation for captive consumers. GEOA status is communicated within 12 working days, agreement submission required within 20 working days, and SNA forwards signed agreement to licensees within 25 working days from zero date. SNA and NIWE are the key stakeholders. Captive generating plants require 26% equity with voting rights maintained throughout the year, verified annually; ownership changes require documentary evidence submitted with the CGP verification application.

Table 96 : Telangana C&I and Open Access Rules

Parameter	Sub-parameter	State Practice	Policy Name & Clause
Eligibility	Threshold	- General OA: >1 MVA contracted capacity - Green Energy OA: ≥100 kW contracted capacity - Future expansion OA: ≤1 MW contracted capacity	<u>TGERC (Terms and conditions of Open Access). Regulation, 2023 clause 8.1, 24.3.8.1</u>
	Contract demand	- No load limit for captive consumers - OA Generator's total capacity allocation across consumers per time block cannot exceed	

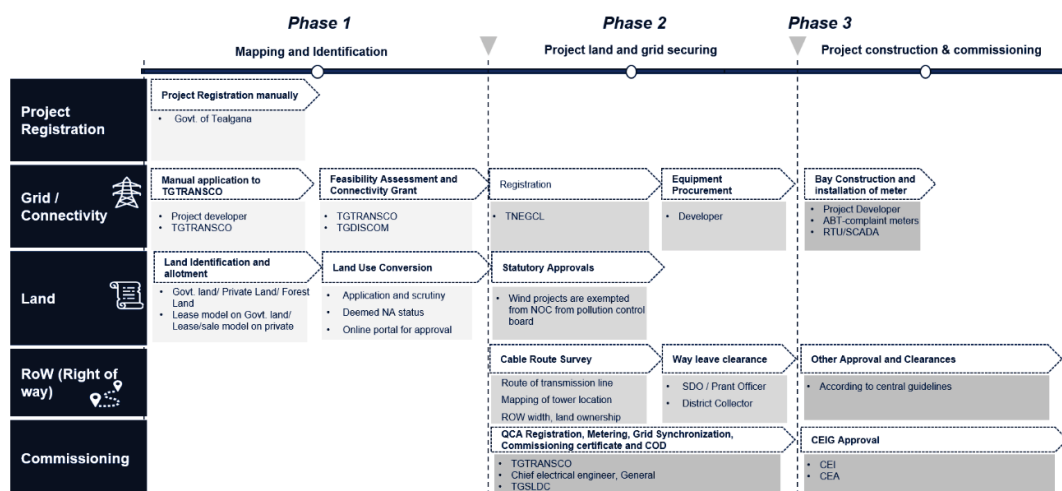
Parameter	Sub-parameter	State Practice	Policy Name & Clause
Approvals	Timeline	available capacity, capped at installed capacity or contracted OA capacity (whichever lower) - SNA grants or communicates GEOA status within 12 working days from zero date - Applicant submits GEOA agreement within 20 working days - SNA forwards signed agreement to licensees within 25 working days from zero date - Effective wheeling date: as specified in agreement, or date of signed agreement submission to SNA if unspecified	<u>Terms and Conditions of Open Access, Regulation, 2024</u> <u>Clase- Clause-14.2</u>
	Additional stakeholder required in the state	SNA, NIWE	<u>Telangana Clean and green energy policy – Clause 9.2.</u>
Captive/Group Captive	Definition/Verification & Monitoring	- Captive Generating Plant (CGP): power plant set up by a person, cooperative society, or association primarily for own/member use - Verification of CGP and captive user status: annual basis - Equity threshold: 26% of equity share capital with voting rights throughout the year	<u>Procedure for verification of captive status of such generating plants – Section 4.1-2(8), 7.1, 8.2 (a), 6.4, 6.5</u>
	Transfer of SPV	- Ownership changes during the year: details with documentary evidence submitted to distribution licensee with CGP/captive user verification application (Format I(i), IA(i) or IB(i)) - CGP and captive users must ensure ≥26% ownership with voting rights held by captive users at all times	

Table 97: Telangana DISCOM-wise open access charges (FY2025-26)

Category	Sub-category	Unit	TGSPDCL	TGNPDCL	Source
Transmission	Transmission Charge	INR/kW/month	68.64	68.64	<u>TG Transco MYT Table 4.28</u>
	Transmission losses	%	2.46%	2.46%	<u>TG Transco MYT order</u>
Wheeling	Wheeling Charges (33kV)	INR/KVA/hr	0.0647	0.0441	<u>TG Transco MYT order-3.69</u>
	Wheeling losses (33kV)	%	3.16%	2.97%	<u>TG Transco MYT order-3.69</u>
Cross Subsidy Surcharge	CSS Charges-Industrial	INR/Unit	1.56	1.69	<u>TG Transco MYT order-3.50</u>
	CSS Charges-Commercial	INR/Unit	1.86	2.06	<u>TG Transco MYT order-3.50</u>
Additional Surcharge		INR/Unit	0.35	0.35	<u>TG Transco MYT order-2.49</u>
SLDC		INR/MW/month	2938.5	0.670	

5.8.2 Project Execution

Figure 20: Telangana Project Execution Pathway



A. Project Registration

Telangana has no single window clearance mechanism but provides an online portal for project registration. Land prerequisites vary by category: government land requires a lease post-PPA, forest land follows forest department allocation guidelines, and private land must be owned or leased by the developer for the PPA period with a copy of sale deed. Grid prerequisites require submission of proposed coordinates and nearest substation details.

Table 98 : Telangana Project Registration

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Single Window Interface		No single portal, multiple portals are used for a project		TNEDCL	THREDCO
Digital Portal Interface		Online portal for project registration			Online portal
Documentation	Pre-Requisites for land	Copy of sale deed			Telangana Clean and green energy policy – clause 9.1
	Pre-Requisites for grid	Proposed coordinates, Nearest substation details			Online portal Online portal

B. Land Acquisition

Telangana allocates government land on a nominal lease at 10% of market value per annum with 5% escalation every two years for the PPA period, while forest land follows Forest Department guidelines and private land must be owned or leased by the developer. Deemed non-agricultural status is accorded to project land, with land ceiling limits under the Land Ceiling Act not applicable for wind projects; clearances are facilitated through TG-iPASS. NOC for land use change is issued within 7 days, land use conversion in 14–30 days, land use certificate in 7 days, and land mutation within 15 days.

Table 99 : Telangana Land Acquisition

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Land allotment	-	- Government land: nominal lease for PPA period at 10% of market value per annum (prevailing rate at bidding) with 5% escalation - Forest land: allocation per Forest Department guidelines - Private land: owned or leased by developer for PPA period	Escalation for every 2 years	District collector/Govt authority	Telangana Clean and green energy policy – section 9.1, 9.7
Land use conversion	-	- Deemed non-agricultural status accorded to land used for projects - Nodal agency facilitates clearances via TG-iPASS or other single window mechanism - Land ceiling limit under Land Ceiling Act not applicable for wind project land acquisition		TG-iPASS	
Statutory Approvals	Forest and environmental clearance NOC requirements and approval structure	- Forest land allocation per Forest Department guidelines - Online portal for clearances - Change of land use: 14–30 days - NOC for change of land use: 7 days - Land use certificate: 7 days - Land mutation: 15 days	Change of land: 14–30 days Land mutation: 15 days	Telangana Pollution control board	

C. Grid Connectivity

Telangana has no single connectivity portal; applications are submitted via two formats — Format 1 as a notarised affidavit covering company details and Electricity Act compliance, and Format 2 as a detailed application covering connectivity capacity, generator details, land and environmental clearances, and nearest substation information. TGTRANSCO/TGDISCOMs process technical feasibility within 14 days, with a connection agreement concluded before synchronisation; the developer remains responsible for planning, design, construction, and safe operation of own equipment.

Table 100 : Telangana Grid Connectivity

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Connectivity Application and Eligibility	Single Window Portal	- No single portal; grid connectivity application uses two formats: - Format 1: notarised affidavit on ₹10 non-judicial stamp paper covering company details, Electricity Act compliance, and information accuracy - Format 2: detailed application — applicant info, contact, connectivity capacity/date, generator details (units, voltage), land/fuel/water/environmental clearances with copies, equity infusion, nearest substations, DD details		TGTRANSCO, TGDISCOM's	Grid Connectivity Application Form
Feasibility Assessment and Connectivity Grant	Feasibility study	- TGTRANSCO/TGDISCOM's will process the proposal for technical feasibility with 14 days, - Connection agreement concluded before synchronisation - Developer responsible for planning, design, construction, reliability, protection, and safe operation of own equipment per regulations and statutory provisions	14 days- Proposal processing	TGTRANSCO and TGDISCOM	

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Transfer of Connectivity		No clause mentioned			

D. Right of Way

Telangana has not prescribed state-specific guidelines for crossing approvals, RoW permissions, compensation, or dispute resolution; all default to central rules and guidelines. RoW clearance is processed through the TG-iPASS portal within 7 days.

Table 101 : Telangana Right of Way

Parameter	Sub-parameter	Process	Timeline	Approval Authority	Policy & Clause
Statutory Approvals	Clearances and Crossing Approvals	- No state guidelines issued, state follows rules and guidelines laid out by central, - RoW clearance through TG-Ipass portal – 7 days	7 Days	TR&B/ PR&RD / MA&UD (ULBs / UDAs) /I&C Forest/Tribal welfare/ Revenue (LA) Depts	<u>TGERC O.O no. 17 of 2016, clause 7</u> <u>TG-ipass clearance, other public delivery service, point 4</u>
	RoW Permissions and Approvals	No state guidelines issued, state follows rules and guidelines laid out by central			<u>TGERC O.O no. 17 of 2016, clause 7, 27</u>
Compensation Framework and Payment		No state guidelines issued, state follows rules and guidelines laid out by central			
Dispute Resolution and Closure		No clause mentioned			

E. Commissioning

Telangana requires CEIG approval through the TG-iPASS portal for electrical safety clearance. Metering at interconnection points follows the State Electricity Grid Code, maintained by TSTRANSCO/TSDISCOMs and NABL-tested for accuracy at least once every five years. Synchronisation requires DISCOM technical feasibility approval, SLDC clearance from TSTRANSCO, and a synchronisation memo, with physical synchronisation conducted in the presence of officials and monthly joint meter readings post-commissioning. Wind plants commissioned after July 2018 require mandatory forecasting tools — DAS, communication, and energy meters — operated directly or through a QCA.

Table 102 : Telangana Commissioning

Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Electrical and Safety Approvals		CEIG approval from TG-iPass portal for clearance and certificate	14 days	CEIG	<u>TG-ipass clearance, other public delivery service, point 17</u>

Parameter	Sub-parameter	Process	Timeline	Approving Authority	Policy & Clause
Metering, Protection and SCADA		• Metering at interconnection points per Metering Code under State Electricity Grid Code • Metering maintained by TSTRANSCO/TSDISCOMs • Meters tested by NABL for accuracy at least once every 5 years; recalibrated if required • Testing by user, conducted in presence of TSTRANSCO/TSDISCOMs			<u>CONNECTION AGREEMENT – 2.5</u>
Grid Synchronisation and Trial Run		• DISCOM technical feasibility approval • SLDC clearance from TSTRANSCO • DISCOM synchronisation memo • Physical synchronisation in presence of officials • Metering with monthly joint meter readings post-commissioning			<u>TERC electricity act</u>
Commissioning Certificate and COD		• Wind plants commissioned post-04.07.2018: forecasting tools (DAS, communication, energy meters) mandatory, self or via QCA • Application: plant/WTG details, COD certificate, developer and nodal contacts, NREDCAP/GoAP capacity approval, STU/Discom connectivity, pooling station and Grid SS details, line specifications, ABT meters, SVC/STATCOM			<u>Forecasting, Scheduling, Deviation Settlement and Related Matters for Solar and Wind Generation Sources) Regulations, 2018 – 10.3(b), Annexure-VI</u>

Abbreviations

ABT	Availability Based Tariff	HESCOM	Hubli Electricity Supply Company
AO	Assessing Officer	ICE	Integrated Clean Energy
AP	Andhra Pradesh	IEC	International Electrotechnical Commission
APERC	Andhra Pradesh Electricity Regulatory Commission	IEGC	Indian Electricity Grid Code
ATL	Agreement to Lease	In-STS	Intra-State Transmission System
ATS	Agreement to Sale	IPP	Independent Power Producer
BESCOM	Bangalore Electricity Supply Company	ISTS	Inter-State Transmission System
BESS	Battery Energy Storage System	IWTMA	Indian Wind Turbine Manufacturers Association
BG	Bank Guarantee	KA	Karnataka
BOO	Build-Own-Operate	KERC	Karnataka Electricity Regulatory Commission
BoP	Balance of Plant	KREDL	Karnataka Renewable Energy Development Limited
BPTA	Bulk Power Transmission Agreement	kV	Kilovolt
C&I	Commercial and Industrial	kVA	Kilo Volt Ampere
CAPEX	Capital Expenditure	kW	Kilowatt
CCLA	Commissioner and Director of Land Administration	LoA	Letter of Award
CDCS	Central Data Communication System	LoI	Letter of Intent
CEA	Central Electricity Authority	LPS	Lightning Protection System
CEI	Chief Electrical Inspector	LT	Low Tension
CEIG	Chief Electrical Inspector to Government	LTA	Long-Term Access
CERC	Central Electricity Regulatory Commission	LTOA	Long-Term Open Access
CESC	Chamundeshwari Electricity Supply Corporation	LUPA	Land Use Permission Agreement
CGP	Captive Generating Plant	LVRT	Low Voltage Ride Through
CNA	Central Nodal Agency	MA&UD	Municipal Administration and Urban Development
COD	Commercial Operation Date	MEDA	Maharashtra Energy Development Agency
CRZ	Coastal Regulation Zone	MERC	Maharashtra Electricity Regulatory Commission
CSS	Cross Subsidy Surcharge	MESCOM	Mangalore Electricity Supply Company
CTU	Central Transmission Utility	MH	Maharashtra
CUF	Capacity Utilisation Factor	MNRE	Ministry of New and Renewable Energy
DISCOM	Distribution Company	MoP	Ministry of Power
DLIC	District Level Implementation Committee	MoU	Memorandum of Understanding
DLMS	Device Language Message Specification	MP	Madhya Pradesh
DPR	Detailed Project Report	MPCB	Maharashtra Pollution Control Board

DSM	Deviation Mechanism	Settlement	MPERC	Madhya Pradesh Electricity Regulatory Commission
EA	Electricity Act		MVA	Mega Volt Ampere
EHT	Extra High Tension		MW	Megawatt
EHV	Extra High Voltage		MYT	Multi Year Tariff
EIA	Environmental Assessment	Impact	NABL	National Accreditation Board for Testing and Calibration Laboratories
EMD	Earnest Money Deposit		NAP	National Adequacy Plan
EPC	Engineering, Procurement and Construction		NIWE	National Institute of Wind Energy
ESS	Energy Storage System		NOC	No Objection Certificate
FDRE	Firm and Dispatchable Renewable Energy		NREDCAP	Non-Conventional Energy Development Corporation of Andhra Pradesh
FMB	Field Measurement Book		OA	Open Access
FSD	Firm and Scheduled Dispatch		OEM	Original Equipment Manufacturer
FY	Financial Year		PAC	Project Approval Committee
GEDA	Gujarat Energy Development Agency		PBG	Performance Bank Guarantee
GEOA	Green Energy Open Access		PCC	Protection Coordination Committee
GERC	Gujarat Electricity Regulatory Commission		PMU	Phasor Measurement Unit
GESCOM	Gulbarga Electricity Supply Company		PPA	Power Purchase Agreement
GETCO	Gujarat Energy Transmission Corporation		RAP	Resource Adequacy Plan
GIS	Geographic Information System		RE	Renewable Energy
GJ	Gujarat		REC	Renewable Energy Certificate
GST	Goods and Services Tax		REIZ	Renewable Energy Integration Zone
GUVNL	Gujarat Urja Vikas Nigam Limited		REMC	Renewable Energy Management Centre
RERC	Rajasthan Electricity Regulatory Commission		SNA	State Nodal Agency
RJ	Rajasthan		SPV	Special Purpose Vehicle
RLDC	Regional Load Dispatch Centre		STOA	Short-Term Open Access
RLMM	Revised List of Models and Manufacturers		STU	State Transmission Utility
RoW	Right of Way		TC	Terms and Conditions
RPO	Renewable Purchase Obligation		TGERC	Telangana State Electricity Regulatory Commission
RPPO	Renewable Power Purchase Obligation		TGREDCO	Telangana State Renewable Energy Development Corporation
RREC	Rajasthan Renewable Energy Corporation		TL	Telangana
RTU	Remote Terminal Unit		TN	Tamil Nadu
SCADA	Supervisory Control and Data Acquisition		TNERC	Tamil Nadu Electricity Regulatory Commission
SECI	Solar Energy Corporation of India		TSTRANSCO	Telangana State Transmission Corporation Limited
SERC	State Electricity Regulatory Commission		VSAT	Very Small Aperture Terminal
SLDC	State Load Dispatch Centre		WAMS	Wide Area Measurement System
WTG	Wind Turbine Generator		WEG	Wind Electricity Generator



WPDA	Wind Power Development	WPDA	Wind Power Development
	Agreement		Agreement
WRA	Wind Resource Assessment	WRA	Wind Resource Assessment
WTG	Wind Turbine Generator		

Definitions

Act	Electricity Act 2003, including amendments	Developer	Entity investing in setup of RE (with/without BESS) or Standalone BESS for electricity generation; for an infrastructure-developed project subsequently transferred, refers to the transferor up to transfer and the transferee thereafter
Agricultural Land Ceiling Act	State enactment imposing ceiling on agricultural holdings	Power Producer	Person who sets up an RE Plant and generates electricity from RE per the Policy
CERC REC Regulations	CERC (Terms & Conditions for recognition and issuance of REC for RE Generation) Regulations, 2010, as amended	RE Park Developer	Public/private entity, JV, SPV, government agency or consortium undertaking planning, financing, development, implementation, coordination and/or operation of an RE Park (with minimum aggregate installed capacity as prescribed), responsible for common infrastructure, land aggregation, statutory clearances, grid connectivity, and facilitation of individual developers; develops and/or maintains RE parks and related common infrastructure
Connectivity Regulations	Procedure issued by the State Transmission Utility for grant of connectivity to RE projects to the intra-state transmission/distribution system, as amended	Public Entity	PSEs with public-sector ownership, role, or legal status — including government agencies, autonomous/non-autonomous public bodies, state-owned companies (Central/State), and divested companies, both administrative and business-oriented
Grid Code	State Electricity Grid Code Regulations and/or CERC (Indian Electricity Grid Code) Regulations, 2010, as amended	Related Party	Any entity that Controls, is Controlled by, or is under common Control with the original applicant institution/person/concern
Policy	The applicable State Renewable Energy Policy and amendments thereto	Control	Direct or indirect ownership of >50% of voting shares, or power to direct management/policies by operation of law, contract, or otherwise
Earlier RE Policy	Previously issued State policy for promoting generation of electricity through non-conventional energy sources, as amended	Power Purchase Agreement	Agreement for purchase of power
Central Agency	NLDC, designated by CERC vide Order dated 29.01.2010 for purposes of REC Regulations	Project Agreement	Agreement(s) between Developer(s) and Procurer(s) and/or Park Developer for supply of power drawn from a Project

Nodal Agency	State agency designated by the Government to act as the nodal authority for renewable energy	Wheeling and Banking Agreement	Agreement governing wheeling and banking of energy
State Agency	State renewable energy corporation, or any other agency designated by the State Commission, for accreditation and recommending RE Projects for registration with the Central Agency under CERC REC Regulations	Land Use Permission Agreement	Agreement governing permission for use of land for the project
State Load Dispatch Centre	Centre established by the State Government for exercising powers and discharging functions under Section 31 of the Act	Government Land	Revenue land that may be allotted/allowed for setting up RE Projects (Solar/Wind/Hybrid/Biomass/CBG/Green Hydrogen including energy-plantation land) or RE Parks per applicable revenue rules
Collector	Collector of a district as defined under the State Land Revenue law, including officers authorized to discharge the duties of Collector	Open Access	Non-discriminatory provision for use of transmission/distribution lines or associated facilities by any licensee/consumer/generator per regulations of the appropriate Commission
District Level Committee	Committee constituted by the State Government for a District under applicable State stamp/revenue rules	CAPEX Mode	Mode under which entire investment for installation of a solar power plant is incurred by the power consumer
Gram Panchayat	Panchayat established under the applicable State Panchayati Raj law	Net Metering	Methodology where electricity generated by Rooftop/Ground-mounted Solar PV / other RE on consumer premises (CAPEX/RESCO) is primarily for self-consumption; surplus is delivered to the licensee and off-set in the billing cycle
Licensee	Includes a person deemed to be a licensee under Section 14 of the Electricity Act, 2003	Gross Metering	Methodology where entire electricity generated by Rooftop/Ground-mounted Solar PV / other RE on consumer premises is delivered to the licensee's distribution system
Discom	Distribution licensee of the State	Contract Demand	Regular contract demand plus standby contract demand (if any) of the Consumer with the Discom
Renewable Energy Sources	Non-conventional renewable generating sources — mini hydel, wind, solar (including integration with combined cycle), biomass, biofuel cogeneration, urban/municipal waste, water, bagasse, MSW, and other sources approved by MNRE/MoEFCC	Project	Project other than conventional power projects that develops/generates/produces energy or electricity from RE Sources and includes an Energy Storage Project

RE Plant	Power plant or system utilizing Renewable Energy for generating electricity (incl. non-conventional plants generating grid-quality electricity as defined by MNRE)	Project Capacity	Total generation capacity of Green Hydrogen Project in KTPA and/or equivalent AC capacity (MW) of RE Plant required per KTPA at delivery points, subject to max 25 MW per KTPA
Hybrid Project	Project combining conventional and non-conventional, or two or more non-conventional sources, feeding the grid via a common pooling station; capacity = max AC injected into the grid (sum across source locations if applicable)	Power	Electricity produced using energy sources
Battery Energy Storage Systems	Systems/projects using electrochemical (Lead Acid, Li-ion, solid state, flow) and similar technologies that store chemical energy and deliver it as electricity, including ancillary facilities; may be co-located with RE plants or standalone	Tariff	Schedule of charges for generation, transmission, wheeling and supply of electricity, together with terms and conditions for application
Standalone Battery Energy Storage System	BESS installed standalone for storage of power and supply at a later stage	Pooled Cost of Power Purchase	Weighted average price at which the distribution licensee purchased electricity (incl. self-generation) in the previous year from all suppliers, excluding short-term and RE-based purchases
Energy Storage	Mechanisms/processes/technologies (mechanical, chemical, compressed air, hydrogen, pumped hydro, etc.) to store energy in any form and deliver it as energy or electricity	Renewable Energy Certificate	Certificate issued by the Central Agency under CERC (REC) Regulations, 201
Captive Power Plant	Captive Power Plant as defined in the Electricity Act, 2003 and Electricity Rules, 2005	Commercial Operation Date	Date when the Power Plant gets commissioned as per rules/provisions
Captive User	Person/member within Section 2(8) and Section 9 of the Act, being end-user of electricity from a Captive Generating Plant primarily for own use; "captive use" construed accordingly	Decommissioning	Permanent removal from service of a generating station/unit or transmission system (incl. communication system or element) after useful or project life as agreed, certified by an authorized agency, where the project cannot be operated due to any failure/commercial reason
Solar Park	Group of solar power plants at the same location used for electricity generation	Disposal	Operation that does not lead to recycling/recovery/reuse and includes physio-chemical/biological treatment, incineration, and deposition in secured landfill

RE Park	Group of Solar/Wind/Hybrid/Hydro including PSP/Storage Plants or combinations at the same location used for electricity generation; includes RE Source-based Park and/or RE Hybrid Park	Scheduled Commissioning Period	Scheduled period of project completion counted from the date of final approval issued by the State nodal agency to the date of COD per the Policy
Pooling Station	Sub-station developed by Developer/Power Producer for interface with the Receiving Sub-station of the distribution licensee/STU/CTU	Force Majeure	Event/circumstance beyond reasonable control and without fault/negligence of the Power Producer/Developer resulting in inability to perform obligations — includes rebellion, mutiny, civil unrest, riot, strike, fire, explosion, flood, cyclone, lightning, earthquake, act of foreign enemy, war, theft, burglary, ionizing radiation/contamination, government action/inaction/restriction, accidents, act of God
Receiving Station	EHV/HV Sub-Station developed by the STU/Discom for evacuation of power from biomass energy sources	Days	24-hour period from 00:00 to 23:59:59 IST
Receiving Sub-station	EHV/HV Sub-Station developed by the STU/Discom/CTU for evacuation of power from RE Sources	Month(s)	Calendar month per the Gregorian calendar
Interconnection Line	Transmission/distribution line connecting Generating Plant Sub-station/Pooling Sub-station of Developer/Power Producer to Receiving Sub-station of ISTS/STU/Discom	Financial Year	Period from 1st April of a calendar year to 31st March of the subsequent calendar year
Inter-connection Point	Point at EHV substation of Transmission Licensee or HV substation of distribution licensee where electricity from the RE station is injected into the grid	Year	365 days, or 366 days in a leap year when February is 29 days

