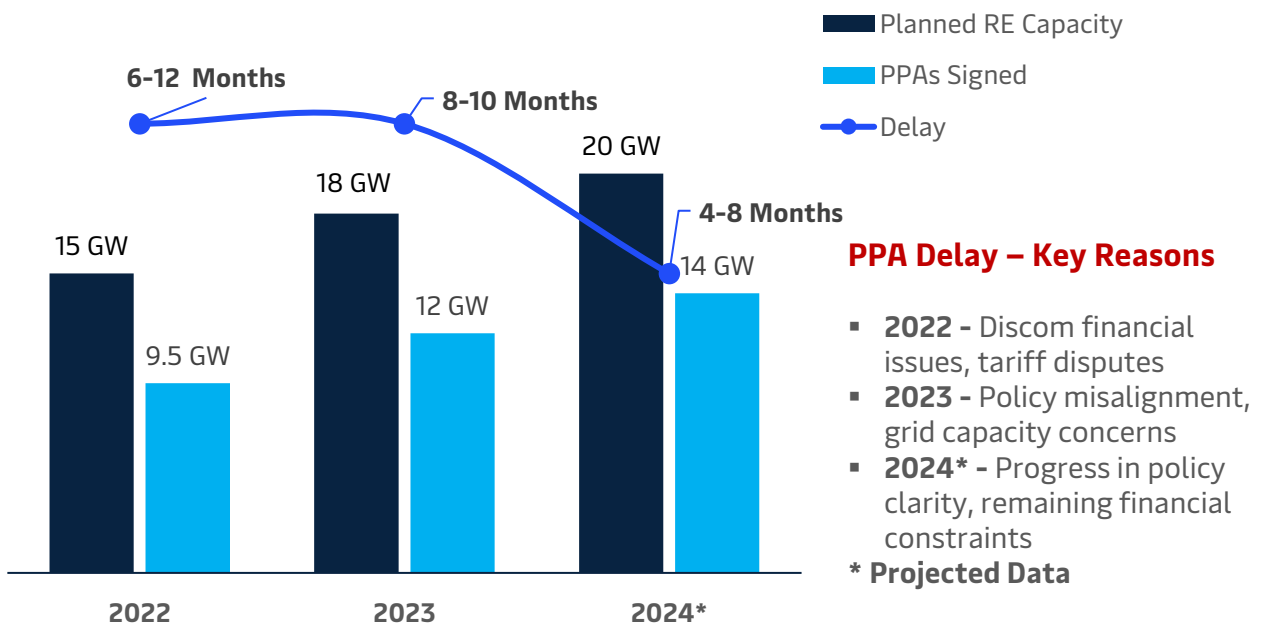


## PPA Renewable Trends - India

There is evidence suggesting delays in the signing of Power Purchase Agreements (PPAs) for renewable energy projects in India. These delays often stem from regulatory uncertainties, financial challenges faced by distribution companies (discoms), and occasional mismatches between state and central policies. Additionally, grid infrastructure constraints and disputes over tariff rates contribute to the lag.

### Delays in Signing of Power Purchase Agreements (PPAs) for Renewable Energy Projects in India

India's renewable energy sector, a cornerstone of its energy transition strategy, is grappling with delays in the signing of Power Purchase Agreements (PPAs). These delays, arising from various structural and operational challenges, have implications for project timelines and investor confidence.



Source: eninrac consulting

### Key Factors Contributing to Delay in PPAs

The key factors leading to the delays in PPAs for RE Projects are indicated as below:

#### 1. Discoms financial challenges

- Many state-owned discoms face significant debt, impacting their ability to commit to long-term PPAs.
- Payments for existing renewable projects are often delayed, adding to the hesitation in signing new agreements.

## 2. Tariff Disputes

- Regulatory differences between state and central governments over tariffs often lead to prolonged negotiations.
- Developers argue for higher tariffs to account for inflation and costs, while discoms push for lower rates.

## 3. Policy Misalignment

- Variations in renewable energy policies across states create confusion in PPA negotiations.
- For instance, while the central government pushes for solar and wind capacity addition, some states have lagged in facilitating the required agreements.

## 4. Grid Infrastructure Constraints

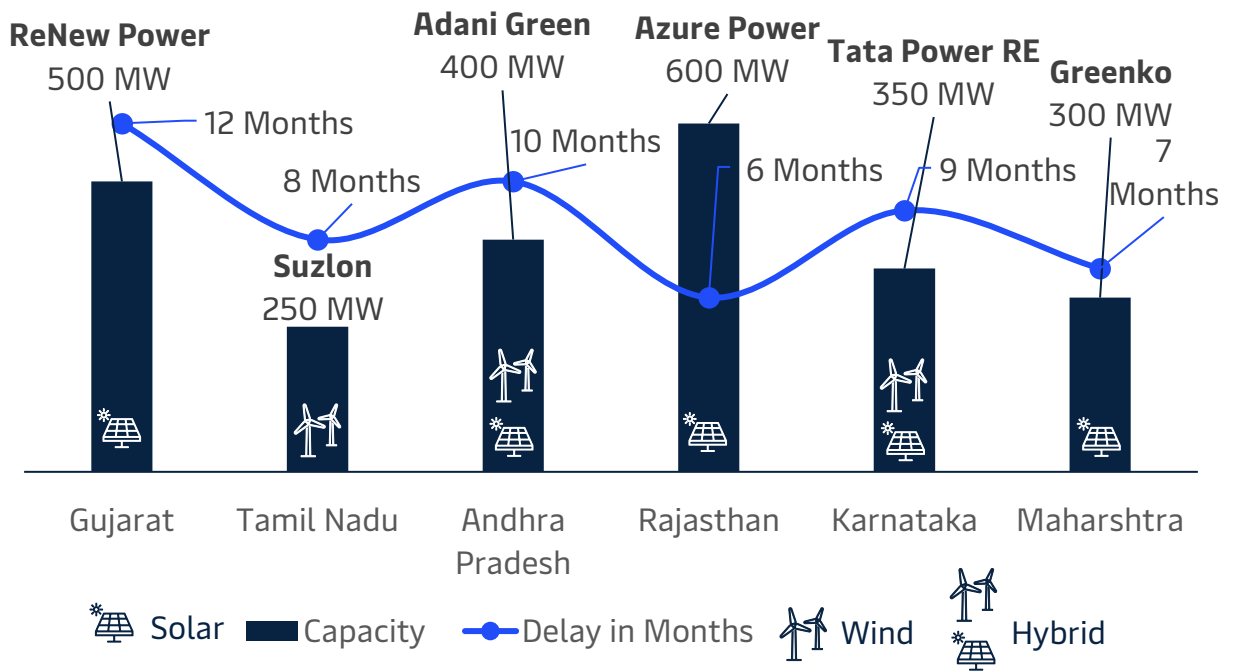
- The integration of large-scale renewable energy projects into the grid is limited by existing infrastructure.
- Concerns over grid reliability and stability make discoms cautious in committing to new capacity.

## Impacts of Delayed PPAs

| Aspect             | Impact  |
|--------------------|---|
| Project Timelines  | Delayed project commissioning, cost overruns                        |
| Investor Sentiment | Reduced confidence, increased risk perception                       |
| Policy Targets     | Challenges in meeting renewable energy goals (e.g., 450 GW by 2030) |

Source: eninrac consulting

## State-wise Delayed Key Projects - 2024



Source: eninrac consulting

### What India could do to avoid delays in PPA?

To address the delays in signing Power Purchase Agreements (PPAs) for renewable energy projects in India, it is important to address the specific challenges within the Indian context. The key recommendations are indicated as below:

#### I. Strengthening Discom Financial Stability

- Many delays in PPA signing stem from financially stressed state discoms. Measures like the **Revamped Distribution Sector Scheme (RDSS)** focus on improving the financial health of discoms by reducing aggregate technical and commercial (AT&C) losses and enabling smart metering system
- Expanding **payment security mechanisms** such as letters of credit or escrow accounts could build trust among developers, ensuring timely execution of PPAs.

#### II. Streamlining Policy and Regulatory Approvals

- **Unified National Renewable Energy Policy:** Harmonizing state and central policies can reduce procedural ambiguities. States like **Rajasthan and Gujarat**, which have clearer renewable energy mandates, often experience fewer PPA delays.
- **Single-Window Clearance:** A centralized system to fast-track approvals for renewable projects and PPA signing can significantly reduce procedural delays

### III. Enhanced Grid Infrastructure

- Many projects face delays due to inadequate grid infrastructure, particularly in **states like Tamil Nadu and Maharashtra**, where renewable generation exceeds grid capacity. Upgrading transmission lines and storage solutions is vital.
- **The Green Energy Corridor** Initiative supports integrating renewable energy with the grid, reducing risks that discourage PPA commitments.

### IV. Decentralized RE Projects

- Smaller, decentralized projects for captive use or localized grids may bypass some of the PPA bottlenecks faced by larger utility-scale projects. States like Uttar Pradesh and Karnataka have adopted policies to encourage rooftop solar and decentralized renewable energy initiatives.

### V. Risk Mitigation for Developers

- **Tariff Certainty:** Developers often face uncertainty over tariff rates, particularly when auctions result in aggressive bidding. Pre-defined tariff escalation formulas or guidelines can stabilize expectations.
- **Dispute Resolution Mechanisms:** Fast-tracked, binding arbitration frameworks for PPA disputes will foster confidence among stakeholders.

### VI. Capacity Building

- **Training for Discom Officials:** Many delays arise from the lack of expertise or resource capacity in state discoms to manage complex renewable energy procurement processes.
- **Support for New Developers:** Small and medium renewable energy developers often face disproportionate challenges in navigating the PPA process. Simplified onboarding and support mechanisms tailored to such developers could alleviate delays.

### VII. Introduction of Penalties for Delays

- Introducing penalties for unjustified delays in PPA signing at the regulatory level, monitored by entities such as the **Central Electricity Regulatory Commission (CERC)**, can enhance accountability.

### VIII. Implementing key learnings from Other States on pan India basis

- **Rajasthan and Gujarat:** These states have been relatively successful in reducing delays due to strong policy frameworks, proactive renewable energy corporations, and robust infrastructure development.
- Learning from such best practices could inform policy adjustments in states like **Andhra Pradesh and Tamil Nadu**, which have faced PPA challenges recently.