



ROOFTOP SOLAR IN INDIA

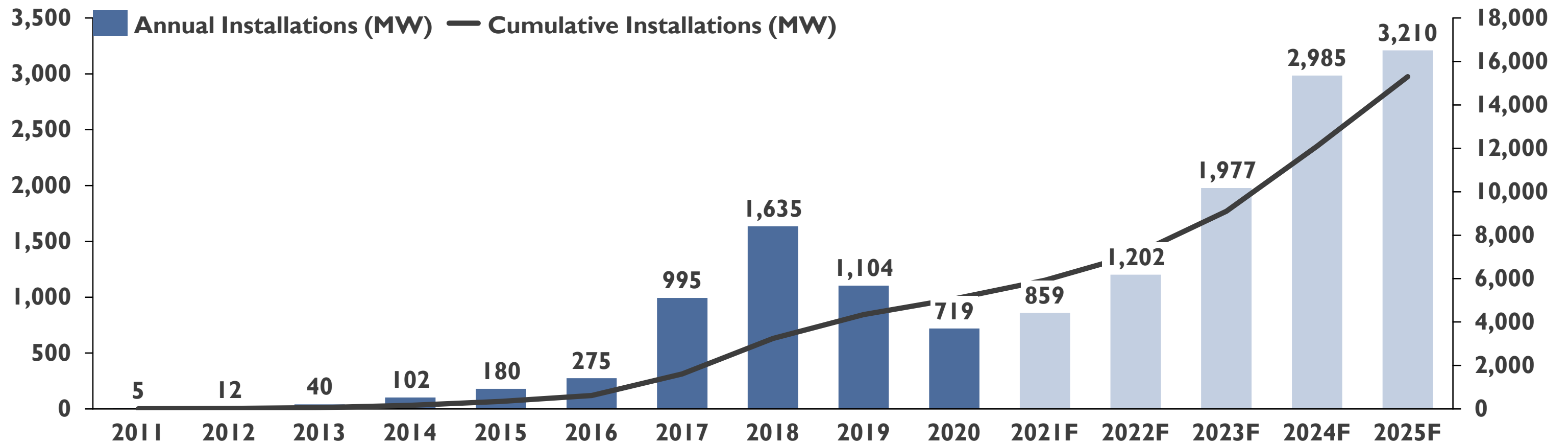
CHALLENGES AND WAY AHEAD

26-AUG-21



ROOFTOP SOLAR IS UNLIKELY TO MEET THE 40 GW TARGET IN TIME

Rooftop Solar Installations and Forecast, MW

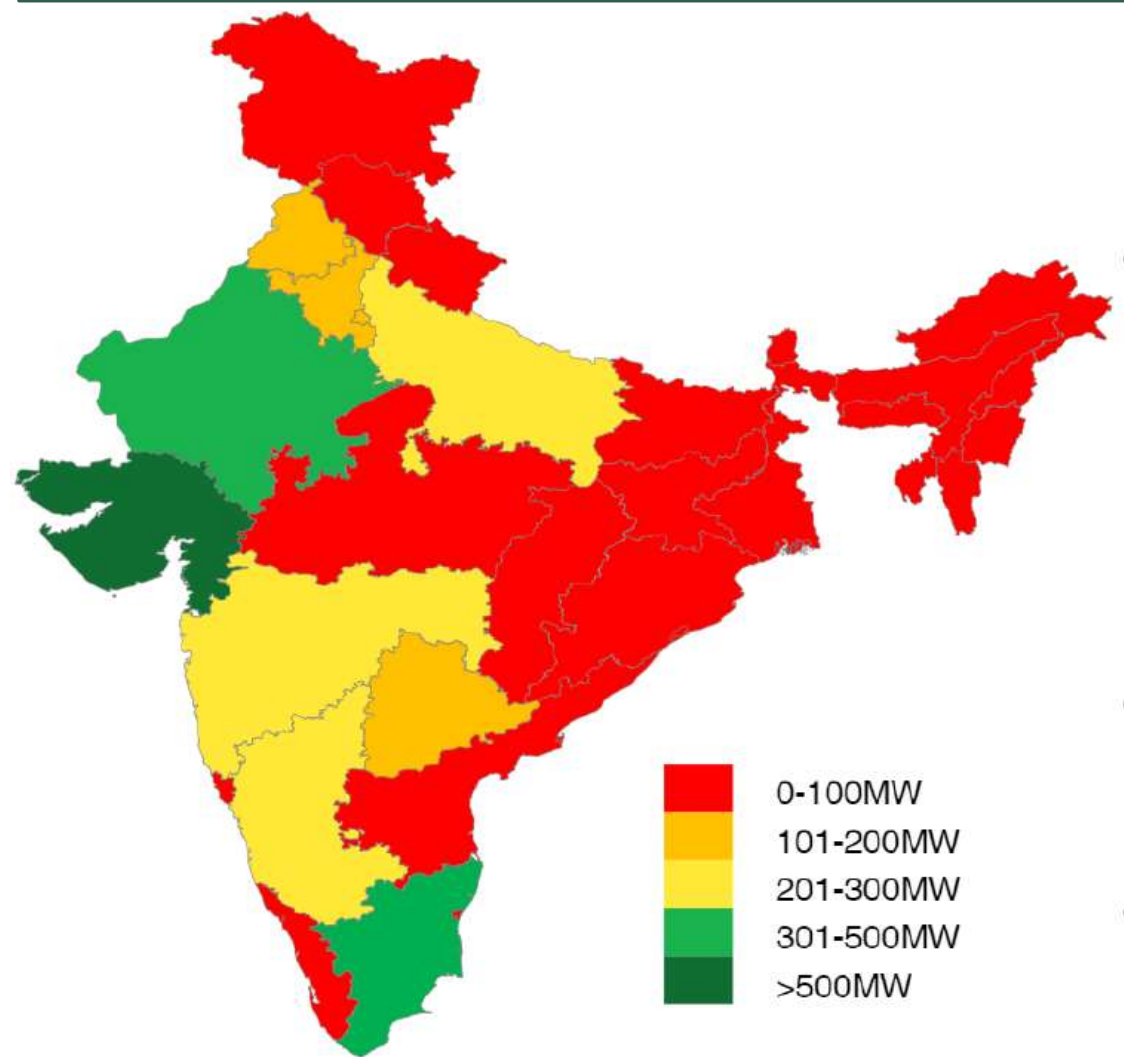


Source: Mercom

Rooftop solar is around 13% of the cumulative solar installations in the country and is quite far off from the ambitious target of 40 GW by 2022

UPTAKE ACROSS STATES IS NOT UNIFORM DUE TO VARYING POLICIES AND DEMAND/SUPPLY SIDE BARRIERS

State-wise Solar Rooftop Installations, MW



Source: Bloomberg

- Gujarat makes up for ~25% of the total rooftop capacity in the country according to MNRE on the back of the ambitious target of installing 800,000 residential RT systems by 2022.
- Rajasthan, Maharashtra, Tamil Nadu are the other top-ranking states
- Contribution of C&I sector in the cumulative rooftop installations is much higher as these consumers pay a higher grid tariff as compared to residential consumers.

STATE COMPARISON OF ROOFTOP SOLAR POLICIES AND OPEN ACCESS

State	Charges (including exemptions, waivers etc.)	Stance towards OA	Regulatory risks	Banking	Future Outlook	Current evaluation	Key highlights
Gujarat							Tariff framework for hybrid projects notified Low regulatory risks but charges could rise
Tamil Nadu							Although TN has one of the highest OA consumers, regulatory risks remain high
Maharashtra							Large growing market however High OA charges
Odisha							Favourable economics however cumbersome application process and high regulatory risks
Chhattisgarh							Favourable economics, low regulatory risks and relatively faster application process
Haryana							Large growing market, however regulatory risk mitigation plan required for market entry
Karnataka							Favourable regulations to promote RE
Jharkhand							Favourable policies and regulations to promote RE OA but small market size
Andhra Pradesh							High regulatory risks with most of benefits extended to OA being withdrawn
Rajasthan							Relatively moderate OA environment however current proposals will increase the cost

Favourable      Unfavourable

KEY CHALLENGES FOR ROOFTOP GROWTH

Key Challenges

1  **Policy Level Inconsistencies**

2 **Procedural Delays**

3  **Low Awareness and Lack of Knowledge**

4  **High upfront capital cost**

4  **Funding**

5  **Lack of technical capacity**

Impact

- Poor and piecemeal implementation of net metering policies at the sub-national scale
- Most state regulations on net metering set the maximum capacity limit at 10kW hindering large-scale deployment
- Procedures are lengthy and complicated as approvals from multiple government agencies are required
- Discoms are generally opposed to distributed solar for fear of losing revenue
- Poor understanding and information of the benefits of RTS by users have become the prime reasons for unwillingness to deploy such systems
- Substantial lack of knowledge about the specific products, processes, and approval systems inherent with these systems
- Despite the dramatic reduction of cost for RTS in recent years, the initial cost continues to be a major hurdle even for small projects.
- Funding from banks and lending institutions focus mainly on C&I segment
- Subsidy disbursement delays hitting IPPs and growth of rooftop PV
- Barrier to scaling up these interventions, particularly in rural settings
- Market eco-system has not been created
- Supply chain has not yet been established



THANK YOU

