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# INDIA RENEWABLES OUTLOOK 2024





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### Authors

**Sangeetha Suresh**, BRIDGE TO INDIA  
**Sugandha Chauhan**, BRIDGE TO INDIA  
**Vinay Rustagi**, BRIDGE TO INDIA

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## Preface

Looking into the future is a risky business, fraught with inherent error and uncertainty. In the context of renewable power sector, these risks are compounded by policy volatility, fragmented decision making and execution hold ups.

India has embarked on a bold path for adoption of renewable power. The Indian government is repeatedly affirming its resolve to achieve 175 GW capacity by 2022 and has also begun talking about 450 GW capacity by 2030. The sector holds a prominent position on the socio-economic horizon, but the narrative is usually too zealous, self-seeking and/ or lacking in intellectual rigour. The government targets have been set in isolation with little regard for operational, financial and regulatory constraints. Mega tenders are being pushed but actual progress is stagnating.

We have taken a dispassionate, holistic and analytical approach to form a view of future trajectory for renewable power. We have evaluated key demand-supply factors as well as competitive position of renewable power versus other generation sources.

We hope that this report ignites a fresh debate about the role of renewables in the Indian economy and the policy response needed to stimulate future growth. We welcome all criticism and feedback.

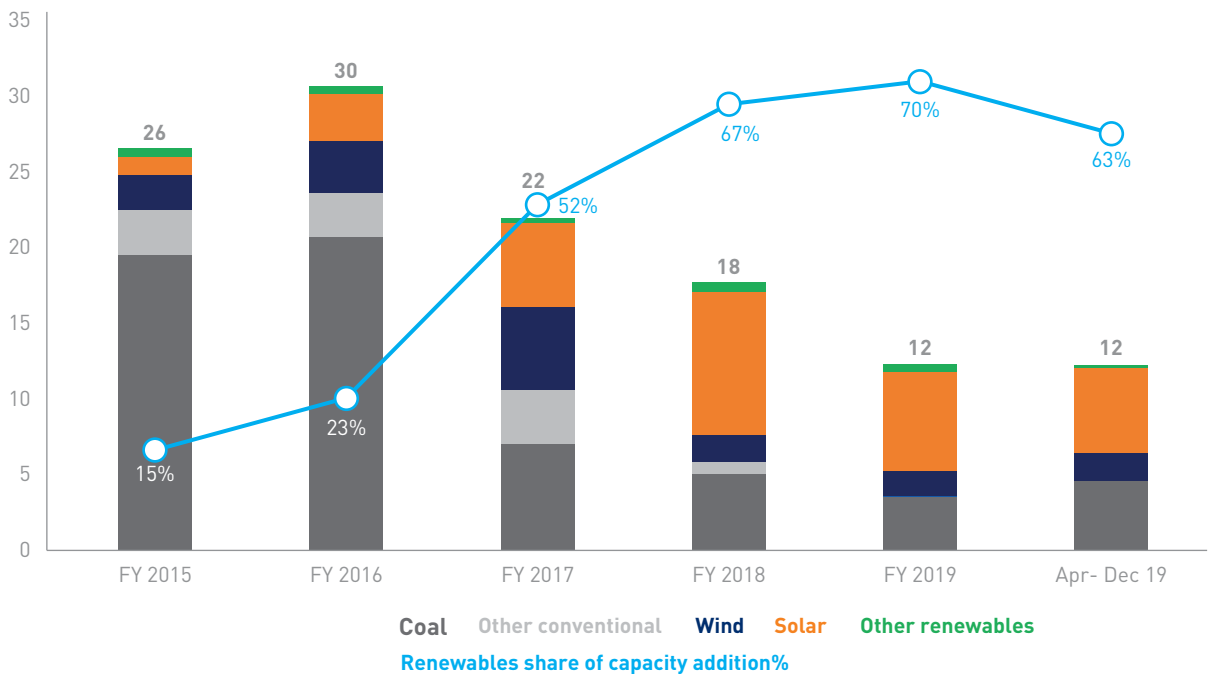
## Executive summary

The Indian renewable power sector has lots going for it. There are strong environmental and economical imperatives mandating push away from conventional sources to new sources of power. Costs are falling, technology is constantly improving, the government is supportive and the business community is keen to exploit the investment opportunity.

### Rapid historic growth

We have come a long way already with solar and wind power capacity addition far outpacing other sources. They are also now by far the two cheapest greenfield power sources. Renewable power penetration has grown from 3% to 10% in the last five years. But policy, execution and financial pressures have slowed sector activity and raised concerns about viability of projects under development. Capacity addition in the last two years has failed to match the record numbers in FY 2018.

Figure: Power generating capacity addition, GW



Source: CEA

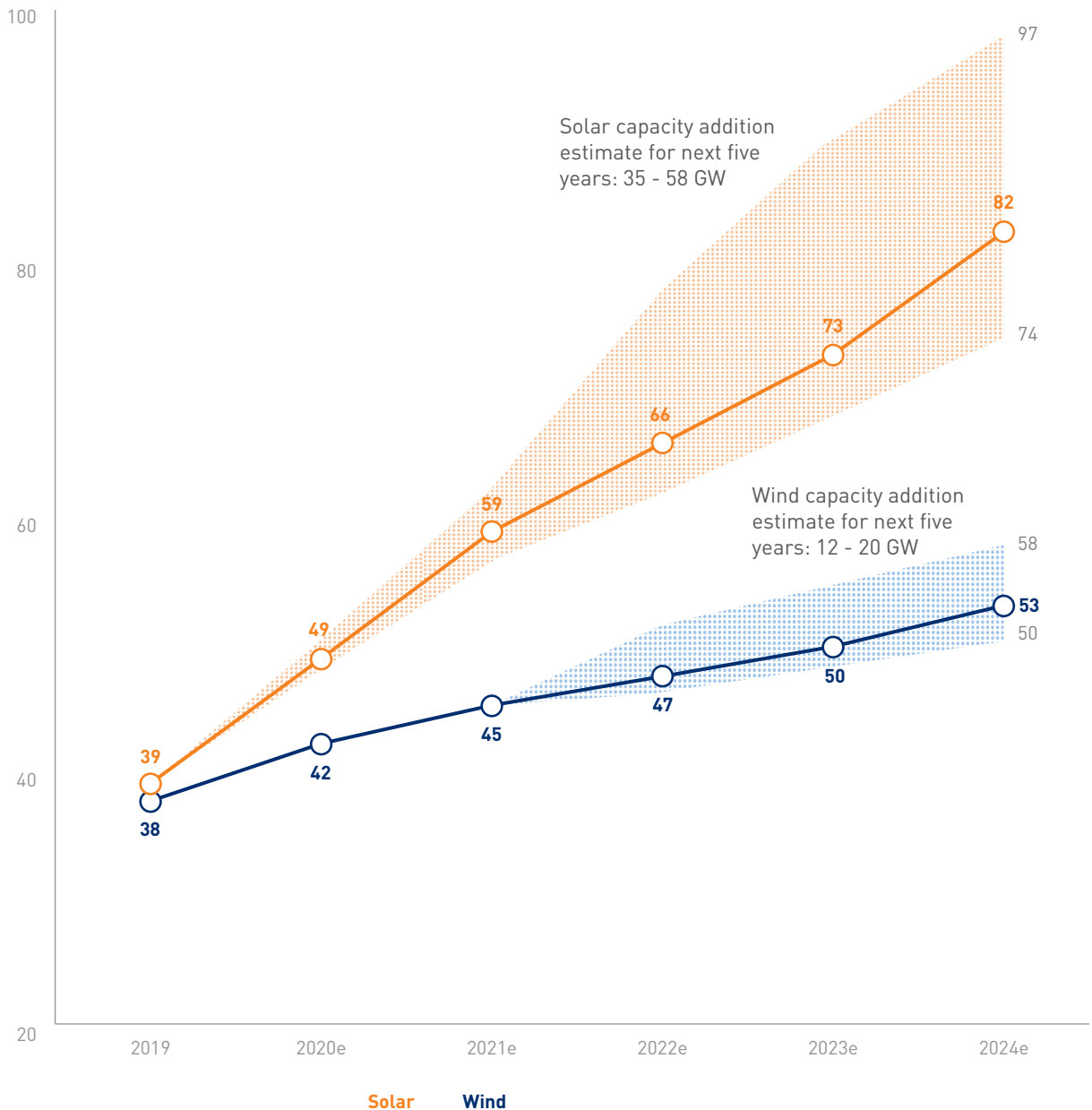
### Modest growth outlook

We believe that the three major variables affecting future trajectory for renewable power are policy support, power demand growth and thermal power PLFs. Unfortunately, policy friction between central and state government levels has increased risks for the sector. Most of the proposed reform initiatives in the last few years have made little progress.

The other growth constraint, usually unacknowledged, is that India has a massive surplus in power capacity but continues to add more conventional capacity. With demand not growing as rapidly as expected, annual coal PLFs have shrunk to 56% (from 65% five years ago) and there is little room to go down further.

We have assumed a largely status quo policy environment and drawn various scenarios for power demand growth and thermal power PLFs to estimate likely trajectory for renewable power. Our base case estimate is that solar and wind power capacity would reach 82 GW and 53 respectively by end 2024.

**Figure: Projected solar and wind capacity, GW**



Source: BRIDGE TO INDIA research

Note: Solar capacity includes utility scale, rooftop solar and open access capacity.

## Key trends

We envisage that following six trends would shape the renewable power sector over the next five years.

### **Tariffs to resume downward journey shortly**

Ongoing techno-economic improvements in module manufacturing and increase in competitive intensity should exert a downward pressure on tariffs. Notwithstanding the various operational and financial challenges and growing risk aversion, we expect the record low solar tariff level to be breached in the next 1-2 years.

### **Complex tender designs**

We expect a gradual move away from vanilla tenders to complex schemes including manufacturing-linked tenders, solar-wind-storage hybrid tenders and even completely technology agnostic tenders seeking firm 24x7 power. The higher complexity may bring down the number of active players and consolidate the industry further.

### **Large scale storage a few years away**

There is strong anticipation about growth of storage in view of the need to address intermittency and variability challenges associated with renewable power. Results of the first mega storage tender are just out and it remains to be seen if the DISCOMs are willing to buy firm power at a cost over INR 6.00 (USD 8 cents)/ kWh. We believe that the growth potential is huge but take-off stage is still another 2-3 years away.

### **Distributed solar market future uncertain**

C&I consumers, the main demand source for both rooftop solar and open access projects, would face increasingly strong resistance from the DISCOMs. Lack of policy visibility means that this market would be volatile with overall growth likely to be in low-flat territory. In contrast, residential rooftop solar prospects are expected to pick up due to clearer policy focus and improving availability of financing solutions.

### **Manufacturing prospects stay bleak**

Safeguard duty on cell and module imports is set to expire in July 2020. Prospects of extending it and/ or replacing it with customs duty are dim in our view. In absence of material tariff barriers, Indian manufacturers would struggle to compete with the Chinese giants.

### **Mixed financing environment**

Equity funding is expected to remain relatively easy as the sector is a magnet for leading global investors. However, the debt providers would remain extremely selective unless DISCOM bankability issues are resolved decisively.



## Conclusion

Our base case growth estimates are below most market expectations as well as government targets. Outperformance over these numbers is possible subject to drastic amends in policy formulation and implementation. There are three top priorities for the government to pave way for faster growth of the sector:

- i. Mitigate offtake risk by making DISCOMs financially sustainable;
- ii. Develop a long-term roadmap for land, transmission and debt provision;
- iii. Address non-firm nature of renewable power output;

Outperformance from our base case scenario is contingent on concerted push by the government to tackle various challenges afflicting the sector.



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