



Inter Solar Munich

# India Renewable Sector Update



June 2023

# About BRIDGE TO INDIA

# We are an independent clean energy consulting and research services company

CONSULTING



MARKET INTELLIGENCE

# We have worked across the value chain...



## Business strategy

Indian conglomerate

Complete business portfolio review and formulation of a new strategy for EPC, project development and manufacturing business



## Market assessment

International development FI

RE policy assessment, market review and identification of suitable investment prospects



## Business strategy

European IPP

Market entry strategy including target business segmentation, value chain review and competitive positioning



## Market assessment

European inverter manufacturer

Relative evaluation of India, China and other south Asian markets on solar industry growth prospects and government policy framework



## Business strategy

Utility scale project developer

Complete benchmarking and development of business strategy for rooftop solar OPEX business



## Tender design

International development bank

Contractual and financial comparison of various utility scale tenders and recommendations for future procurement



## Buy side advisory

PE investor

Technical, business and commercial due diligence of a rooftop solar investee company



## Bid advisory

International IPP

Financial bid advisory and competitive market assessment for multiple tenders

# ...on a wide range of projects



## Renewable power roadmap

Logistics company

Market entry strategy including target business segmentation, value chain review and competitive positioning



## Policy advisory

International development bank

Recommendations for improving net metering regulations for central and state electricity regulators



## JV partner search

Chinese module manufacturer

Identification of potential JV partners for cell and module manufacturing in India



## Financial modelling

European IPP

Financial modelling, viability assessment and risk mitigation strategy for wind projects



## RE procurement

Global technology major

Renewable sector policy and market analysis for five states



## Policy advocacy

International think tank

Technical partner to support adoption of C&I power procurement



## Agricultural solar

International oil and gas company

Examining market and financial viability of feeder-level agricultural solar projects



## Market sizing

Finance company

Market sizing of rooftop solar in select MSME clusters

# We have the most comprehensive research capability in the sector

## Annual subscriptions

Stay abreast of the latest developments



[India Renewable Weekly](#)



[India Solar Compass](#)



[India Renewable Market Brief](#)



[India Corporate Renewable Brief](#)



India Module Market Intelligence Brief



Analyst time

## Detailed market reports

Deep sector knowledge



## Databases

Comprehensive sector information

Project database

Rooftop project database

Tender tracker

Policy database

Equipment and EPC price indices, power prices



Online  
24x7

Tenders and projects

Policies

Equipment and EPC prices, power cost

Leading players

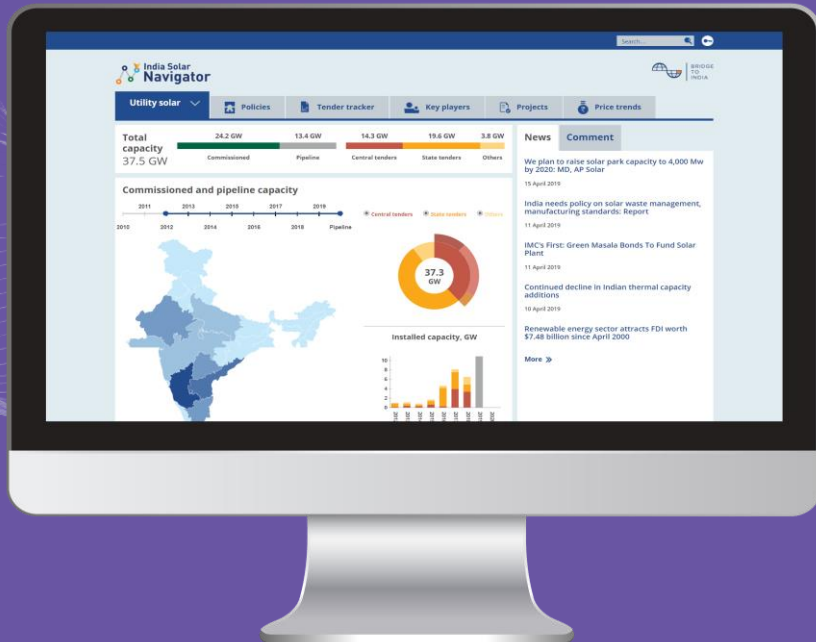
News and research



# India RE Navigator

Utility scale solar | Rooftop solar | Wind | Storage

[www.india-re-navigator.com](http://www.india-re-navigator.com)



- Tenders
- Projects
- Government policies
- Company profiles
- Equipment and EPC prices
- Power trading
- News



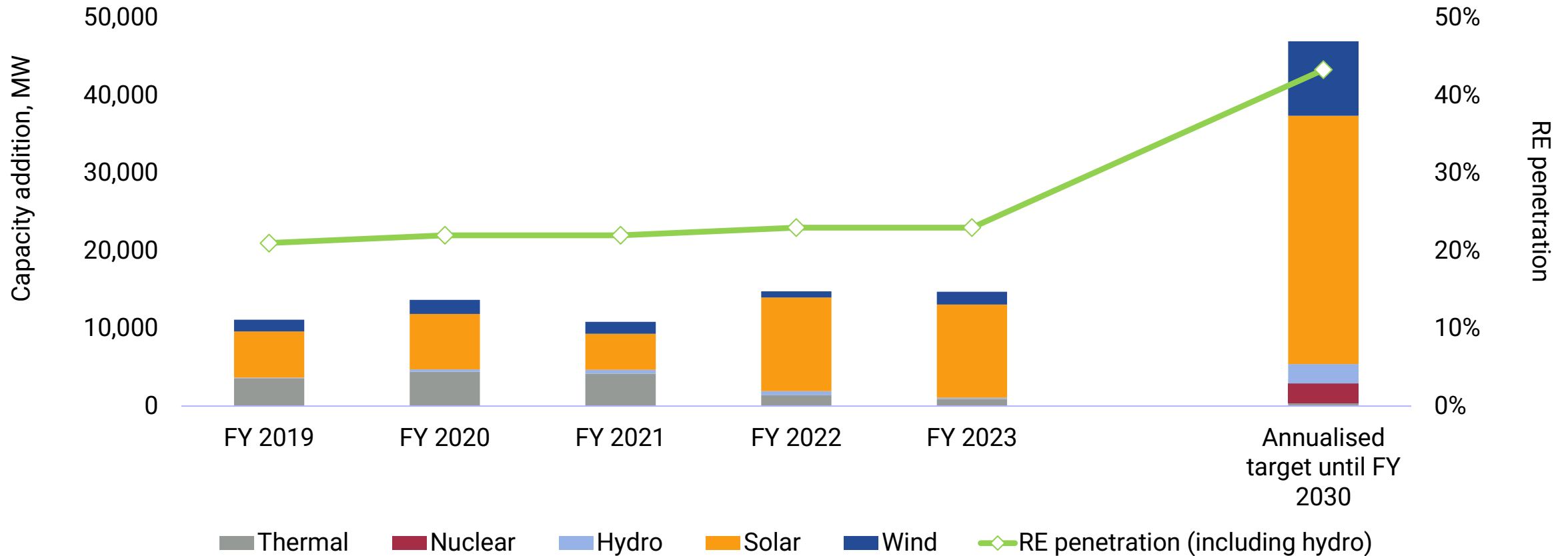


# India renewable sector update



# Execution progress has been slow in recent years

## Capacity addition and renewable penetration



# Corporate and residential market segments are still largely untapped

Total power consumption by consumer category

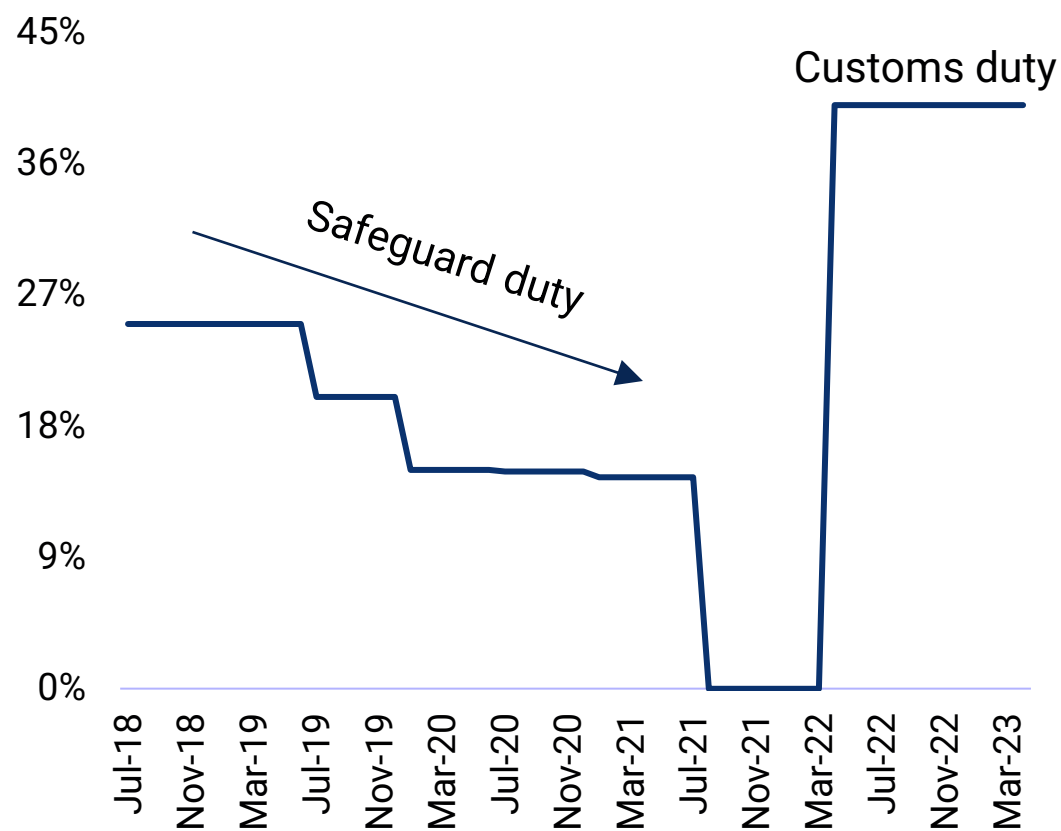


Total solar and wind power capacity by consumer category

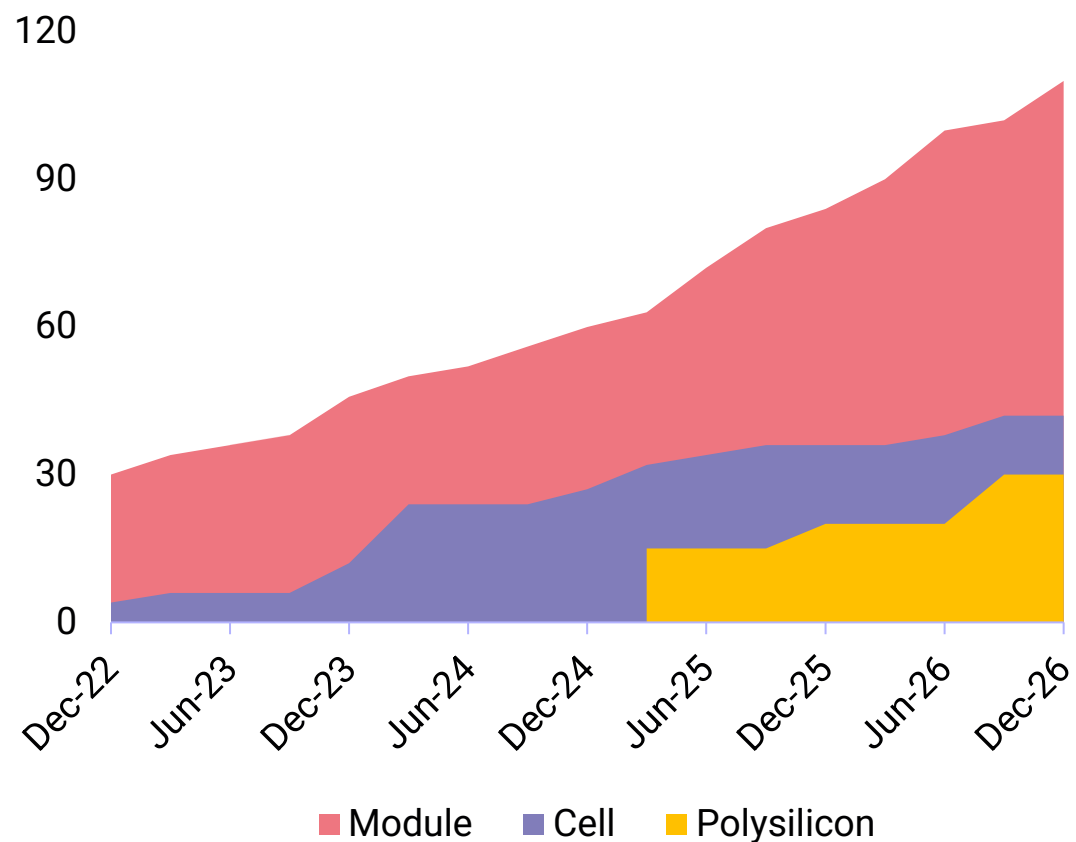


# Make in India is expected to scale up from next year onwards

## Module import duties



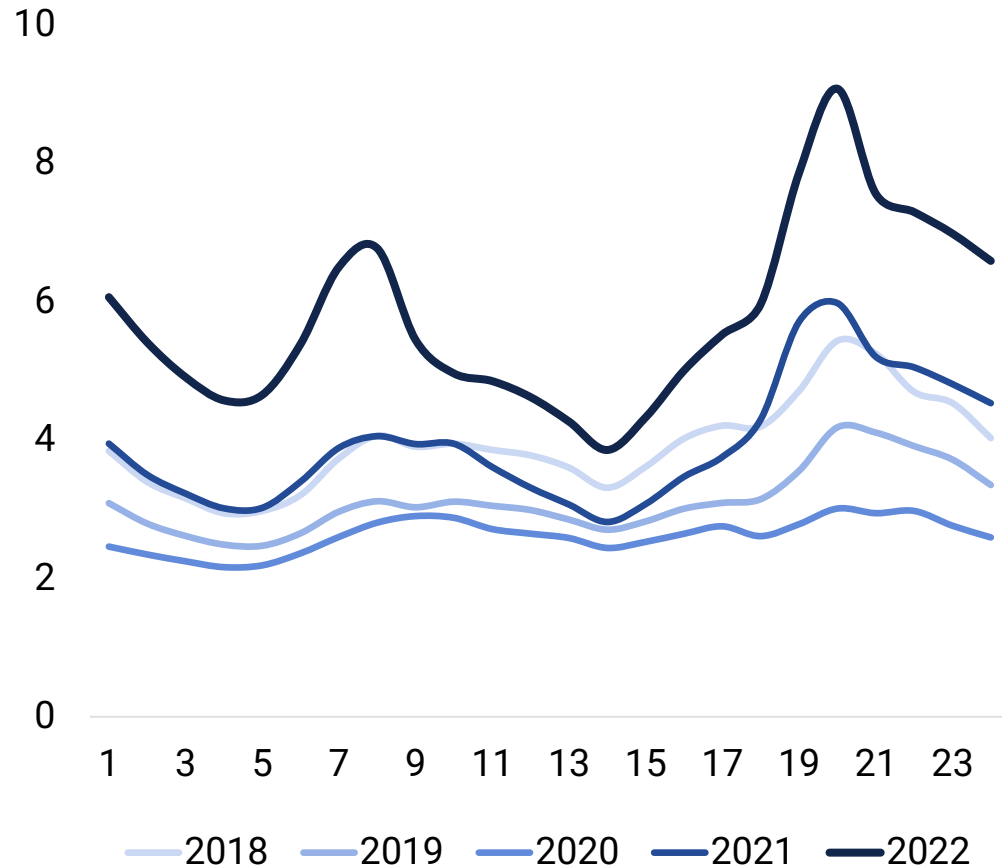
## Projected manufacturing capacity, GW



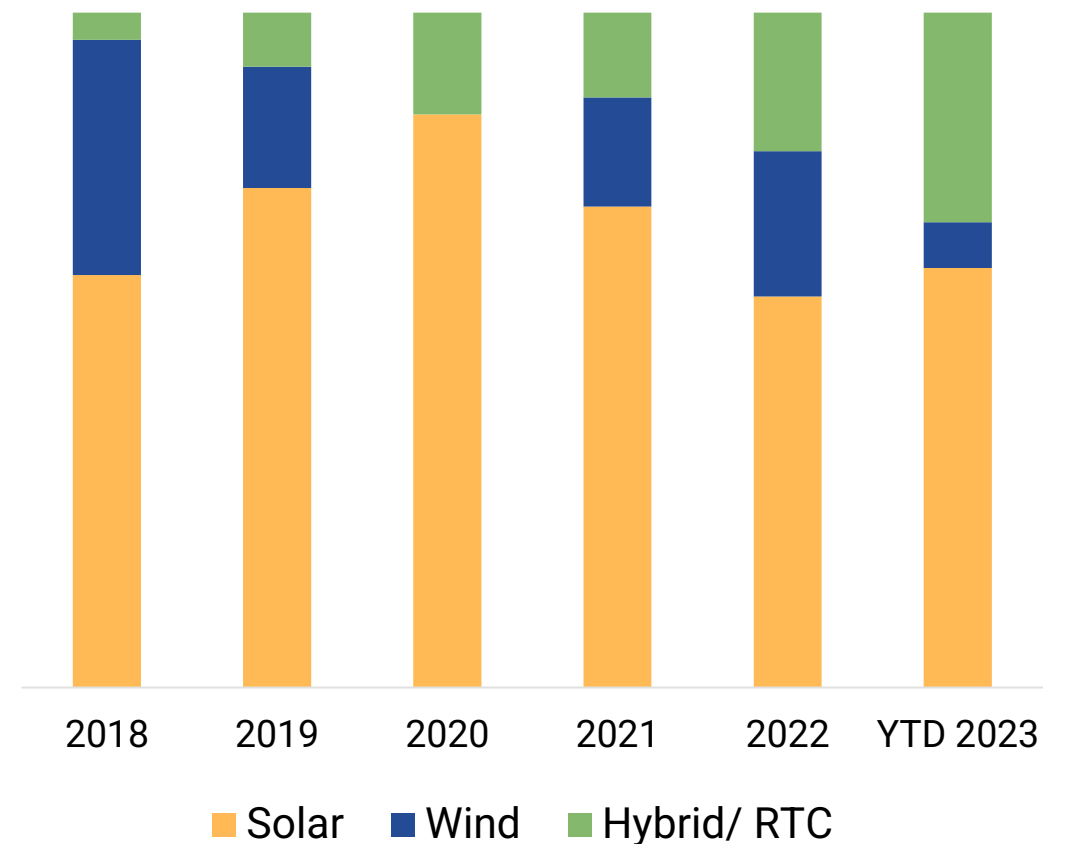
# Need for firm power solutions is getting more acute



Average hourly day-ahead prices, INR/ kWh

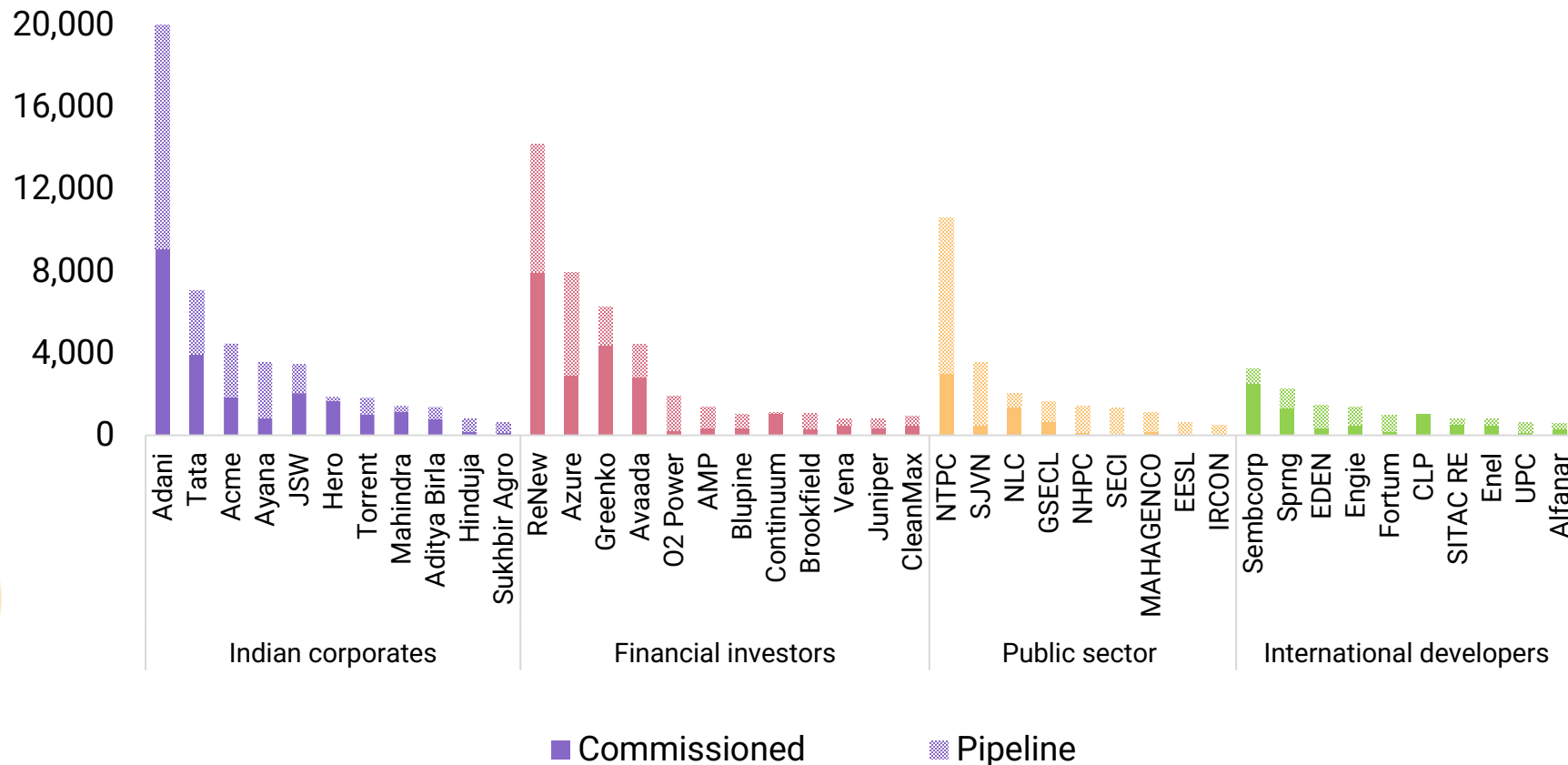


Project auction mix



# Fierce competition has driven down returns and value chain margins

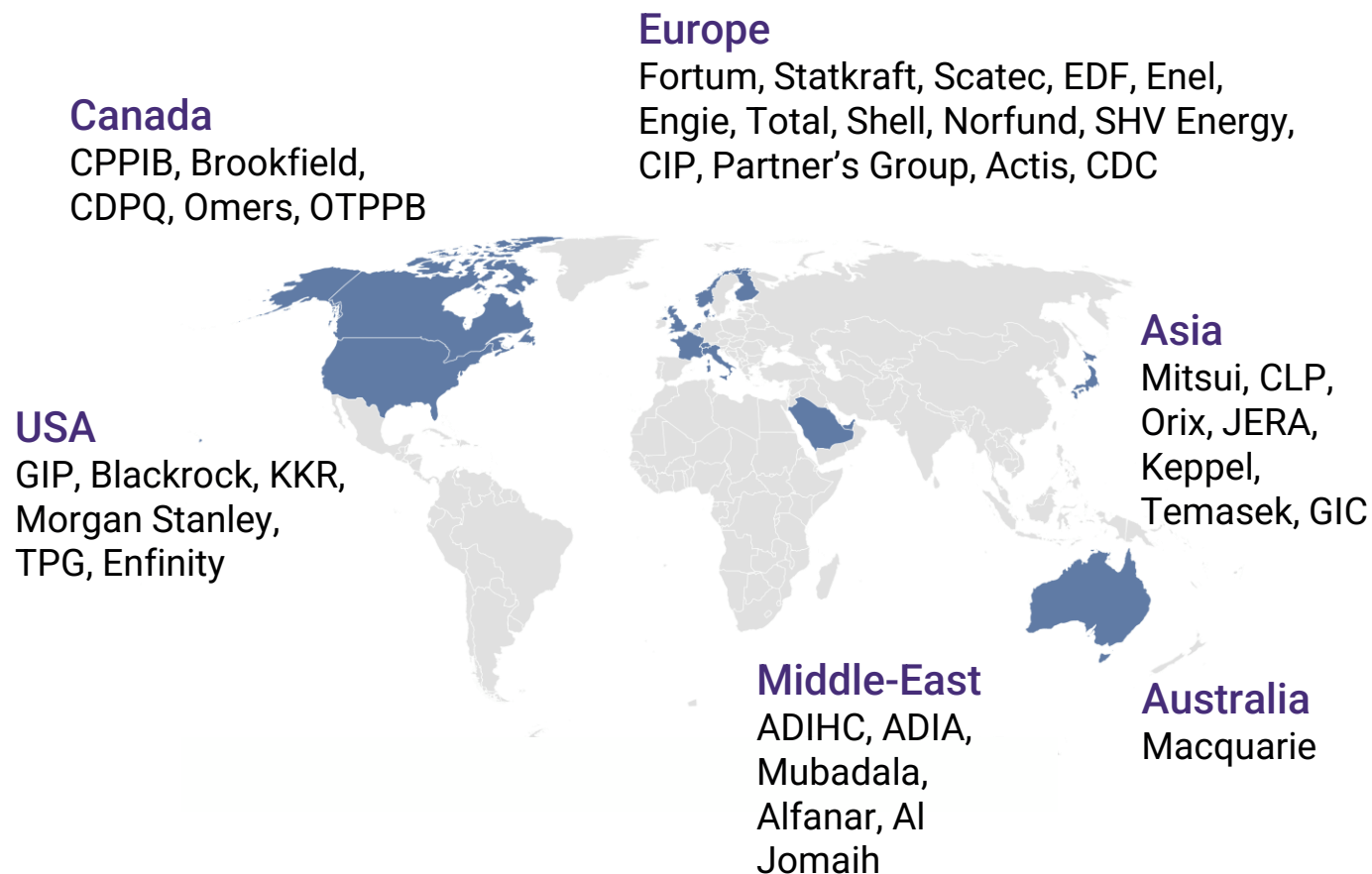
Leading developers as of March 2023, MW



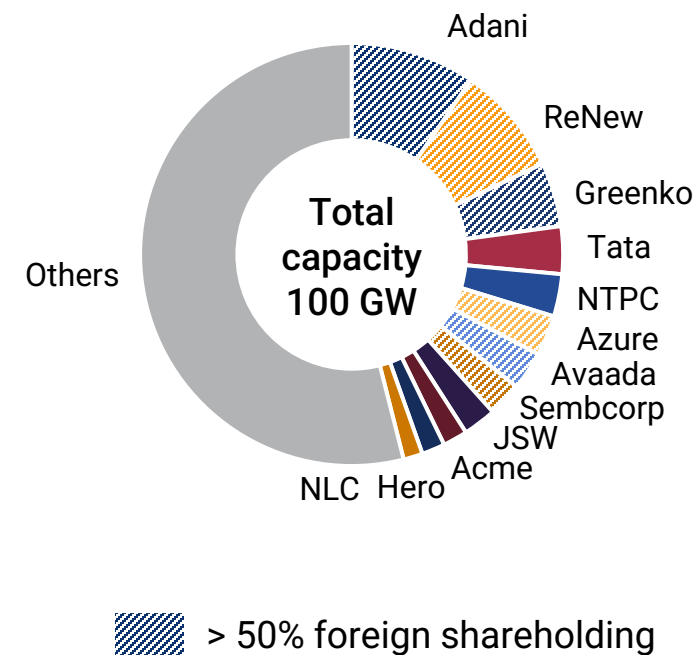
**51**

Unique winners in auctions > 100 MW in last three years

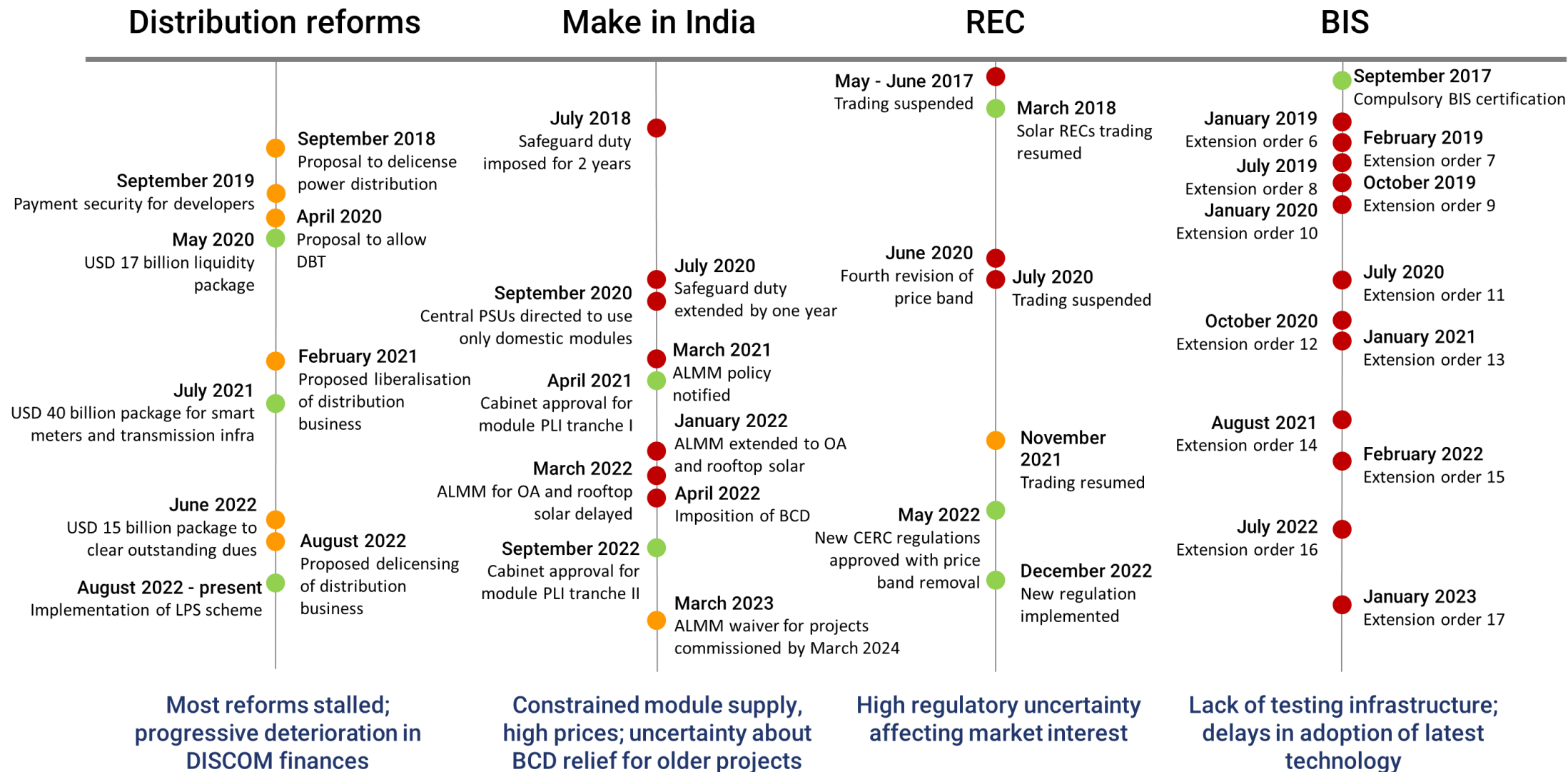
# Global investors have been hugely attracted to the sector



## Leading project developers, March 2023



# Lack of policy stability and visibility is a concern





# The sector is facing increasing conflicts on land use and environmental norms

## Residents of Gujarat village protest against windmills being set up on forestland

Natural resources have been destroyed in Kutch due to clean energy projects

## Villagers' stir against solar plants protects khejri trees

Agreement reached between energy firms and Bishnoi activists to save trees in western Rajasthan

Mongabay Series: Clean Energy, Just Transitions

## Land conflicts on the horizon as India pursues a clean energy future

TERRA NOVA | MAY 03 2022



## Solar Energy in India: Contestation of Land Rights

## How solar farms fuel land conflicts

10 min read • [Mridula Chari](#)

20 Sep 2020, 08:23 PM IST

## 'Orans' of Rajasthan in danger of being taken over by green energy projects

Those traditional diversity hotspots support wildlife, domestic animals, and human livelihoods.

## A flap away from extinction

Great Indian bustard is a critically endangered species whose Indian population is estimated to be 150, out of which less than 10 are in Gujarat.

# Strong green hydrogen push from the government...

## 2030 target

**5** MMT

Production per annum

**125** GW

Renewable capacity

**40** GW

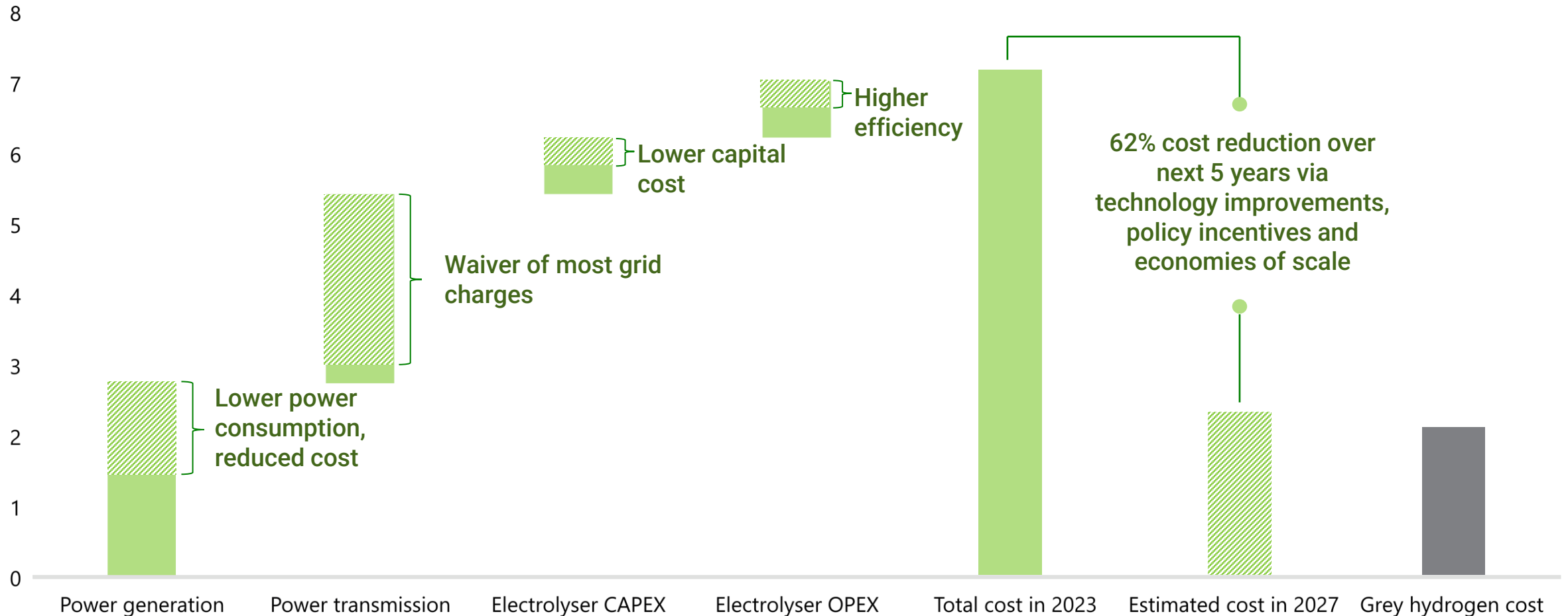
Electrolyser capacity

**USD 100** billion capital expenditure

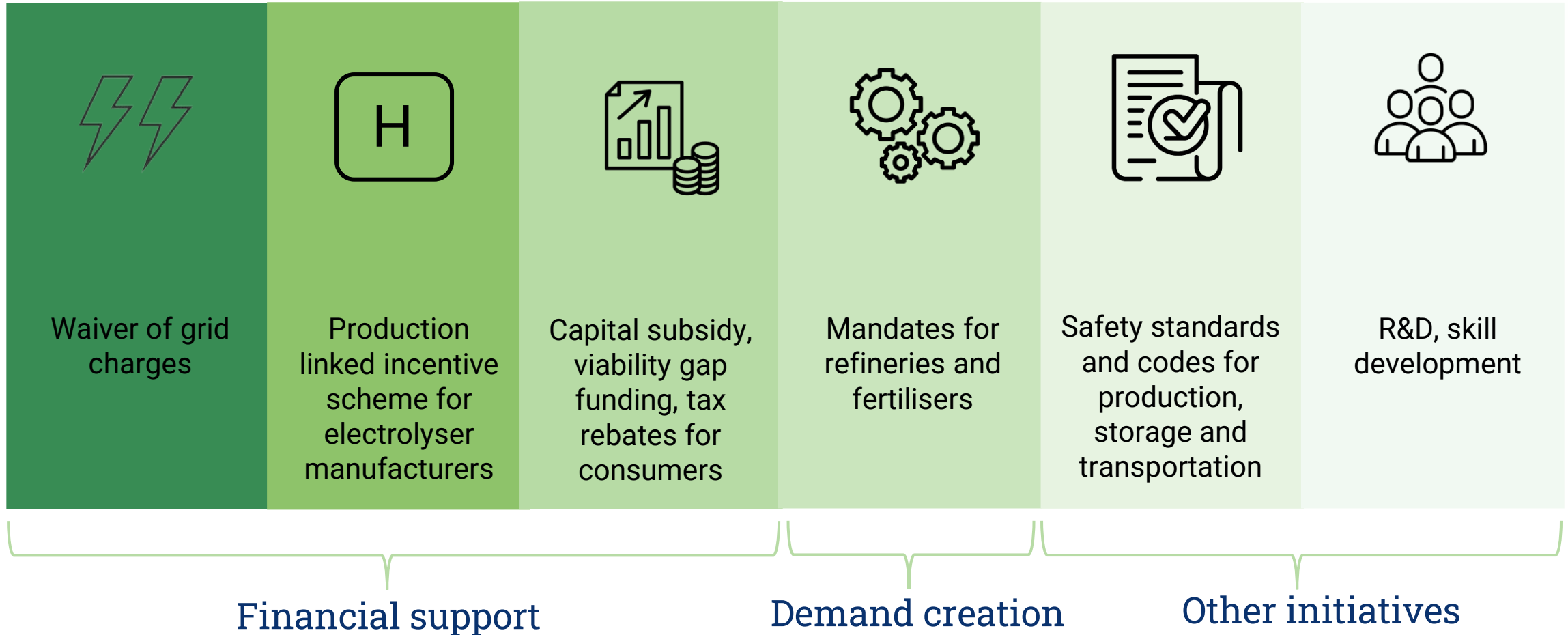
- USD 2.2 billion subsidy
- Waiver of inter-state transmission charges
- Power banking facility on a monthly basis
- Streamlined grid connectivity approval

# ...is contingent on improving cost viability

Estimated production cost, USD/ kg



# Green hydrogen needs stronger incentives and policy support measures



# Conclusion

- Strong growth drivers offset by multiple execution challenges
- Highly competitive marketplace
- Pivot required towards flexible RE
- Storage and green hydrogen emerging opportunities
- Heavy dependence on international capital and technology

Thank you.  
Get in touch  
with us.

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