

Anil Agarwal dialogue – Energy access and RE

Case for changing India's approach to solar



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Our business

BRIDGE TO INDIA specializes in supporting international solar companies and investors in India

About us

- Founded in 2008
- Based in New Delhi, Hamburg and Munich
- German competency and local expertise
- Entrepreneurial approach
- Solar PV as a core knowledge area
- Three mutually supportive business segments

BRIDGE TO INDIA's key fields of expertise are:



MARKET INTELLIGENCE

Policy
Projects
Financing
Industry



STRATEGIC CONSULTING

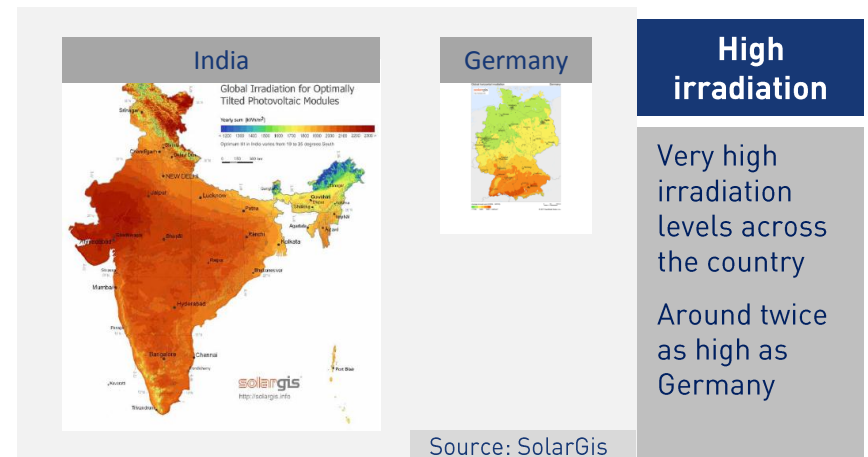
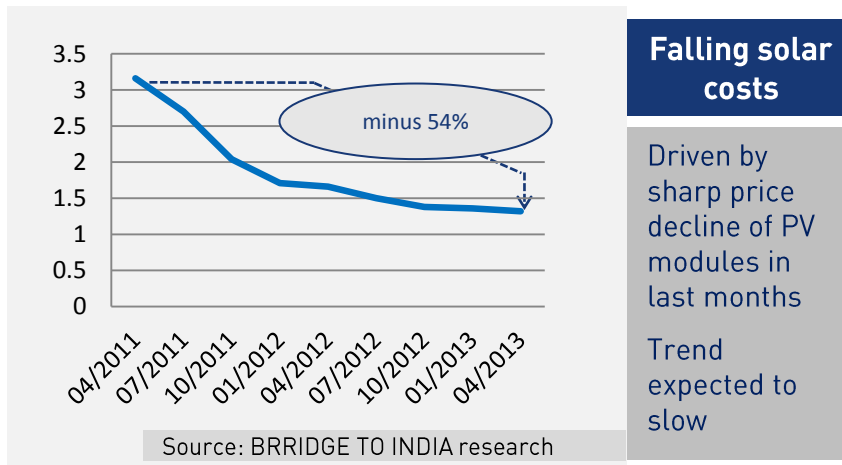
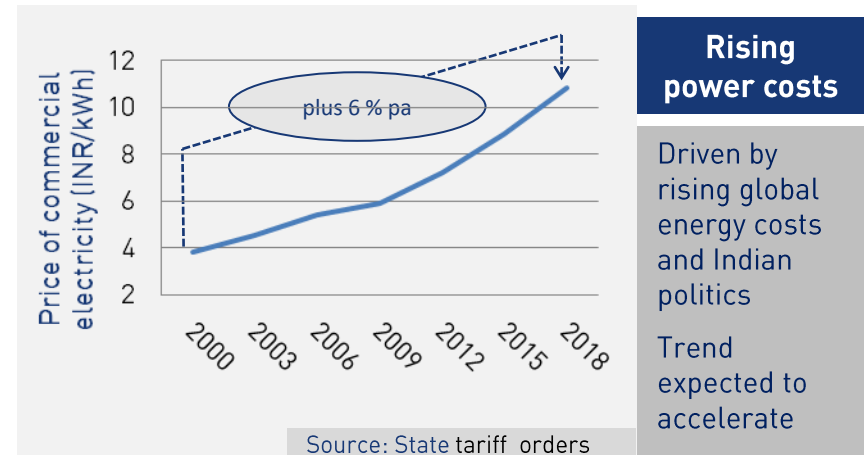
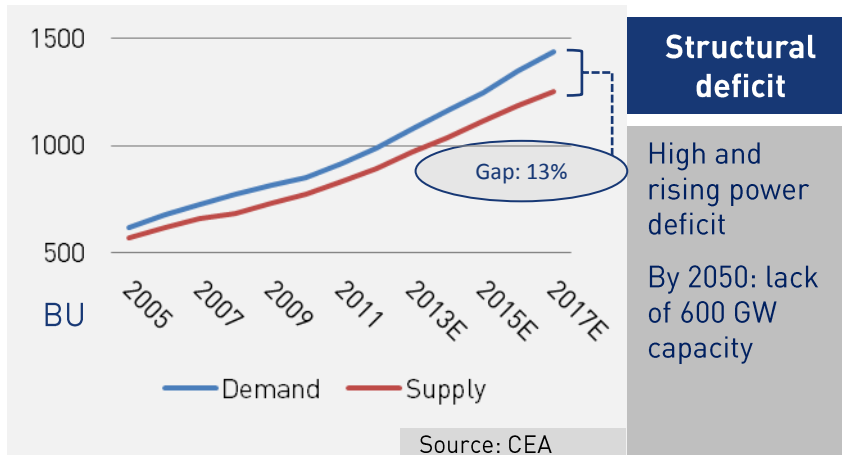
Market Entry
Market Potential
Competitor Landscape
Market Strategy



PROJECT DEVELOPMENT

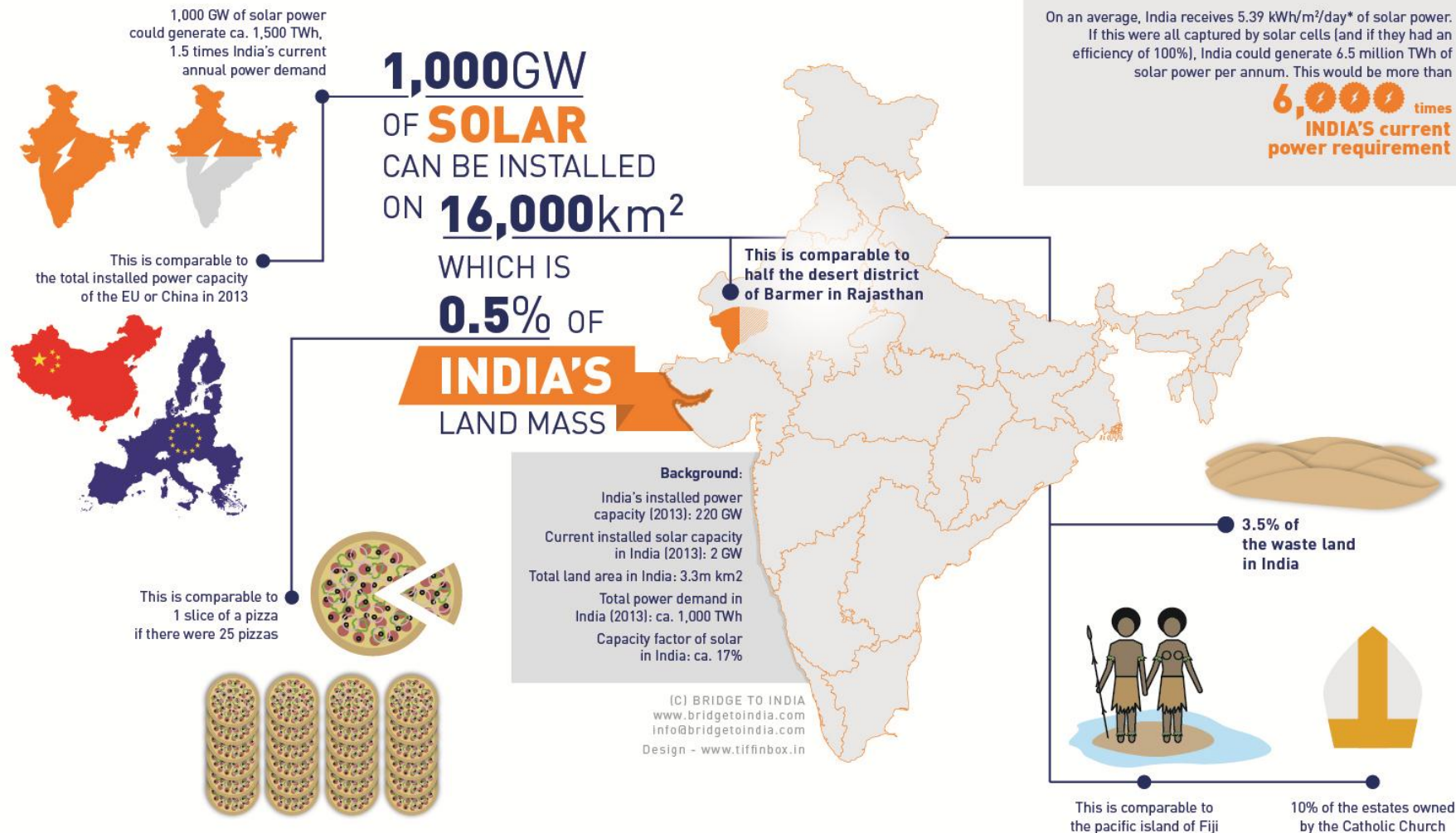
Capital Investments
Remittance PD
Due Diligence

Why solar? **Solar power makes fundamental sense in India**





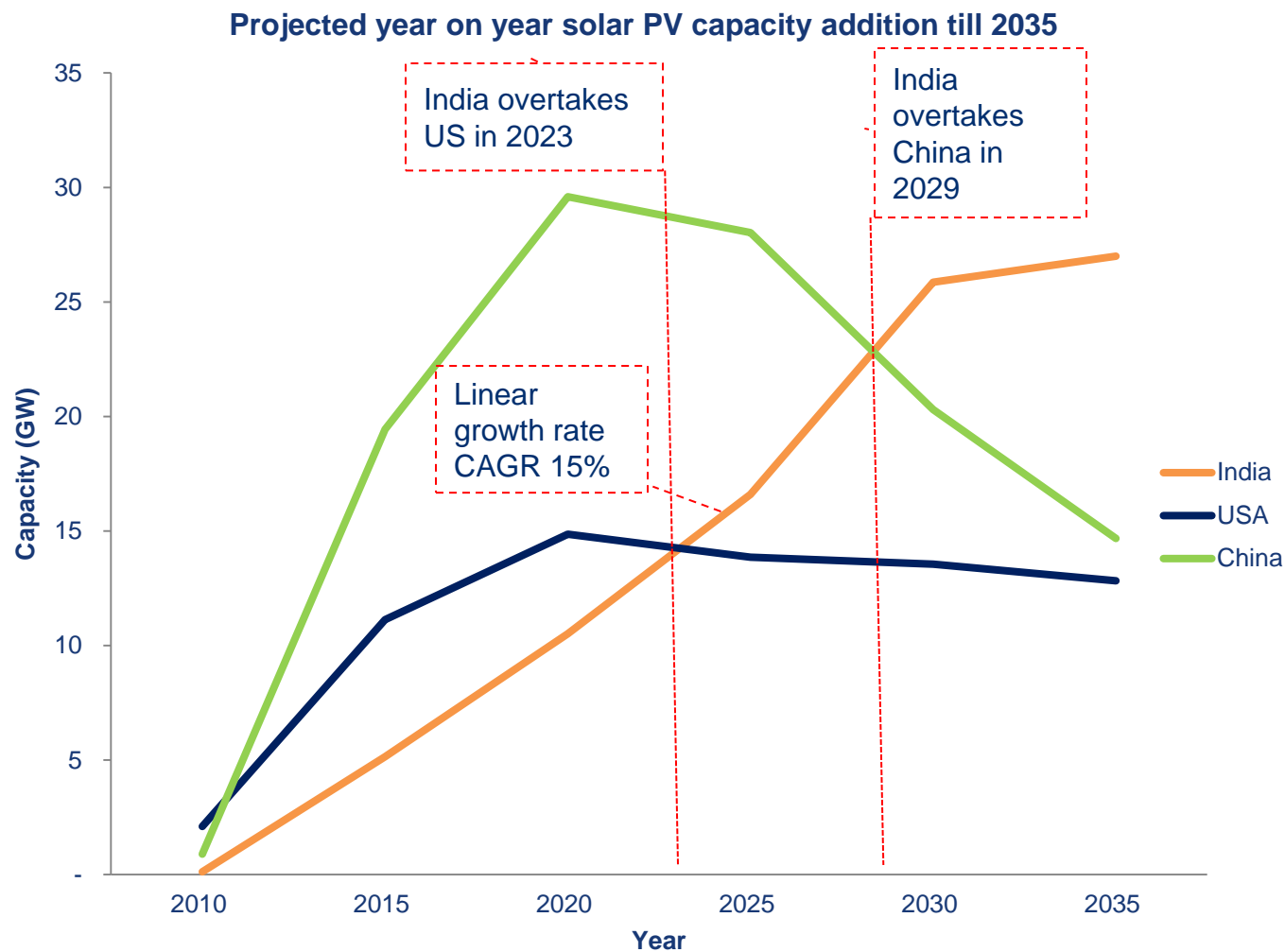
How much solar? India can easily be more ambitious: half the district of Barmer can produce 1.5x India's total power demand



Given our potential, the world expects the Indian PV market to be one of largest the world

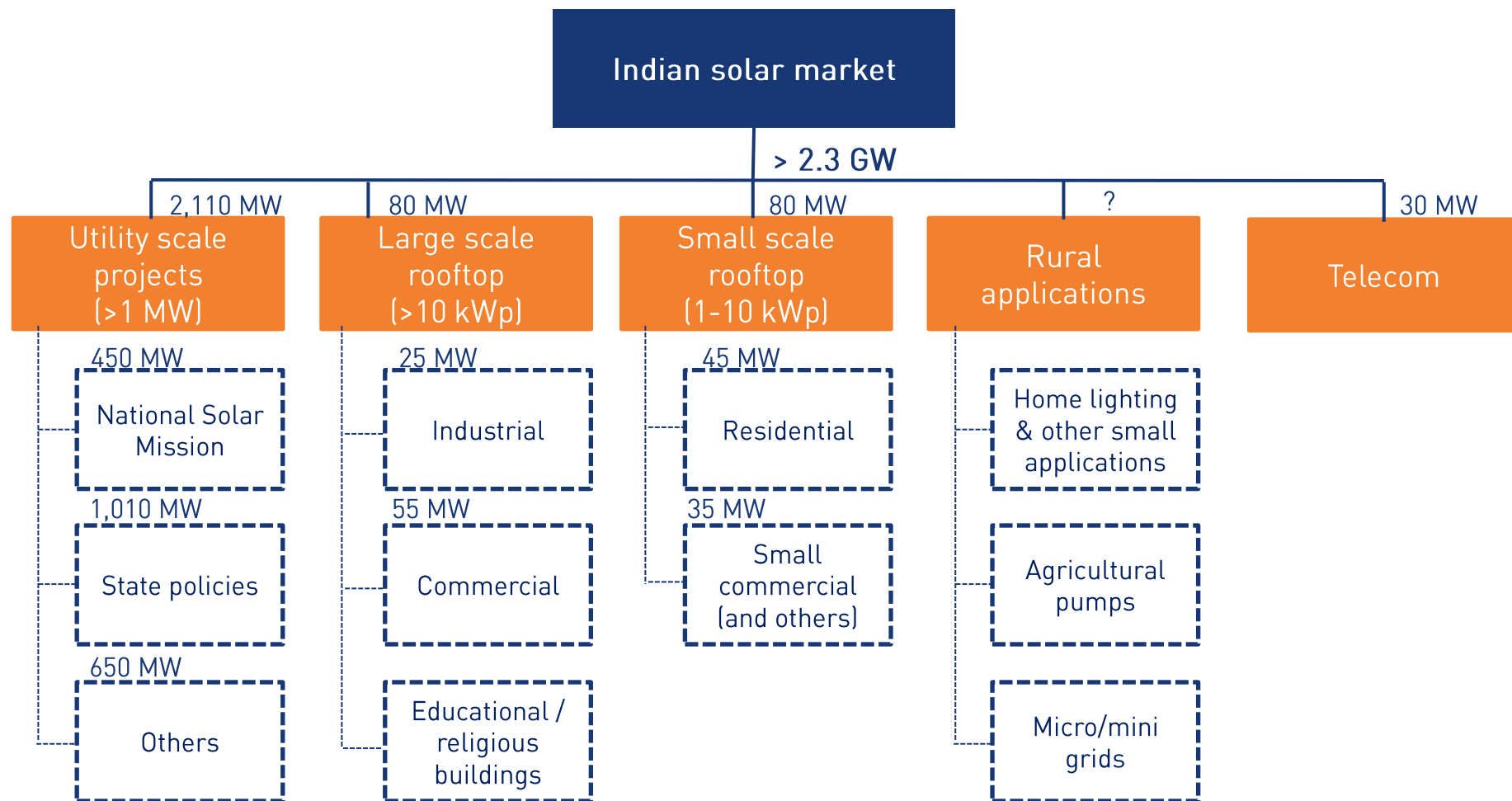
Highlights

- IEA predicts logarithmic growth for China and USA whereas steady linear growth for India
- Capacity addition in the USA and in China is expected to decline post 2020
- India is expected to overtake USA around 2024 and China around 2029 in annual capacity addition



What has been
done so far?

**The Indian solar market is almost completely dominated
by RPO driven utility scale projects**



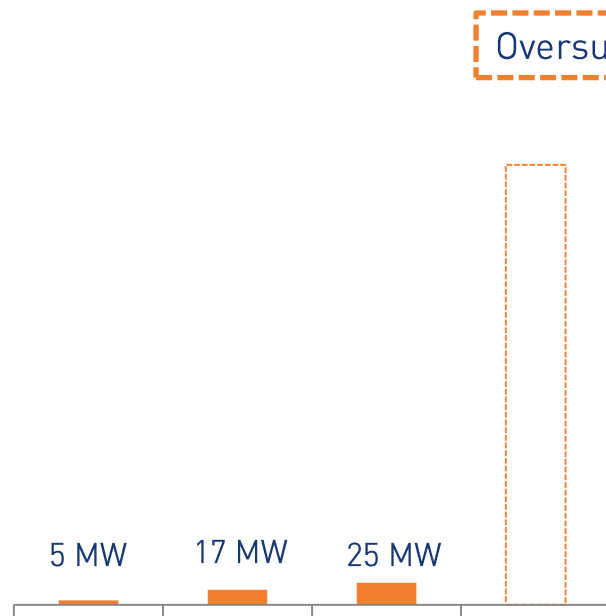
Source: Bridge to India market model

NSM's aim to achieve its targets by opting for ever larger project sizes might not be a long term solution

Highlights

- MNRE's focus seems to be on achieving its targets
- Achieving targets is not a bad thing but the policy should also look at creating an eco-system that drives the growth beyond incentives

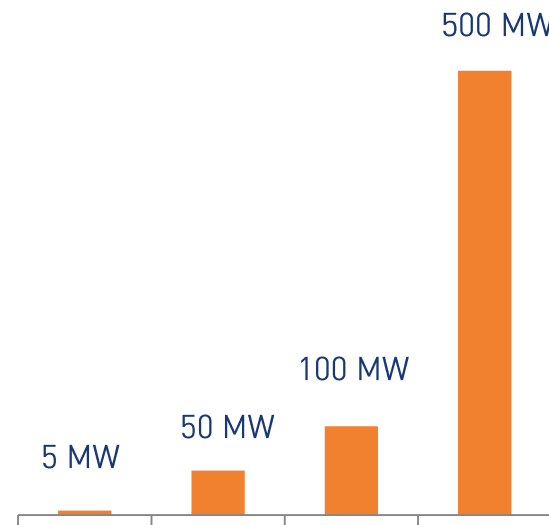
Average project sizes as picked up by the developers under NSM



Phase I Batch I Phase I Batch II Phase II Batch I Phase II Batch II Solar

Maximum allocation sizes per developer as fixed by the MNRE

Oversubscription	12x	7x	3x	?
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Phase I Batch I Phase I Batch II Phase II Batch I Phase II Batch II Solar

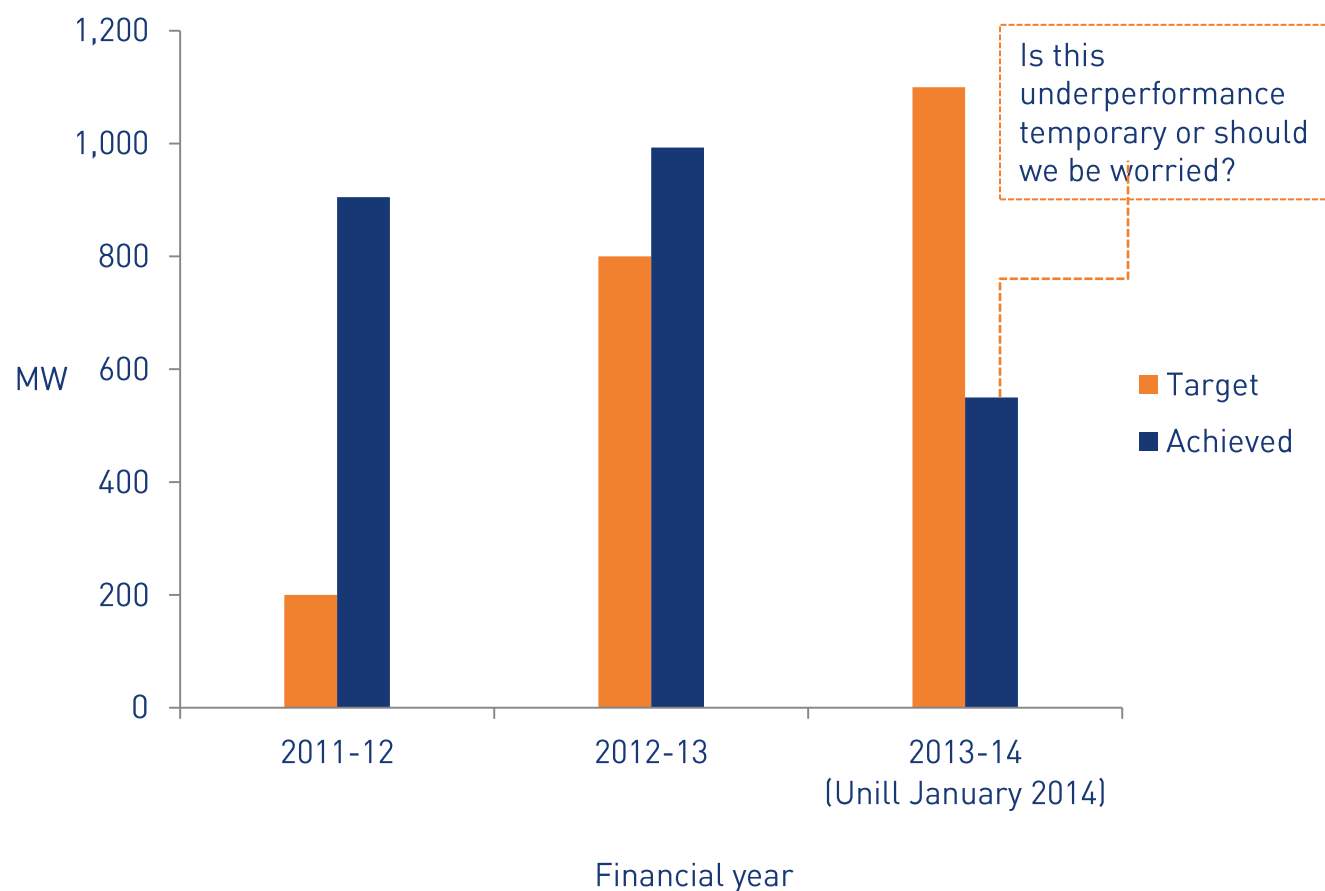
What has been
done so far?

India had a great start to its solar mission, our targets looked ambitious and we were overachieving

Highlights

- Overachievement of targets in the first two years has come largely from Gujarat Solar Policy
- The underachievement in the current financial year is due to delays in NSM and state level allocations

Yearly targets and achievements for the NSM



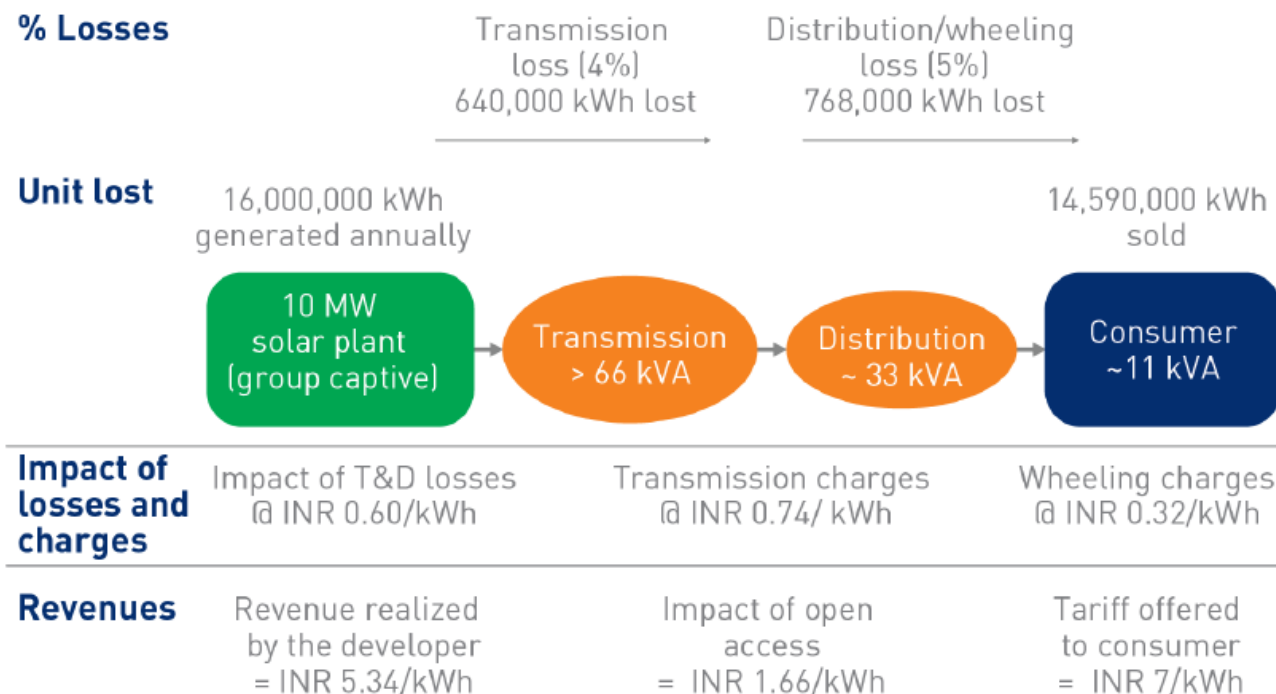
The faultlines

Beyond FiTs, the need is to create solar demand from the end consumers but that eco-system faces challenges

Highlights

- The fact that solar power can be generated at or close to the demand centers needs to be exploited
- Solar power needs to be treaded differently from conventional sources of power.

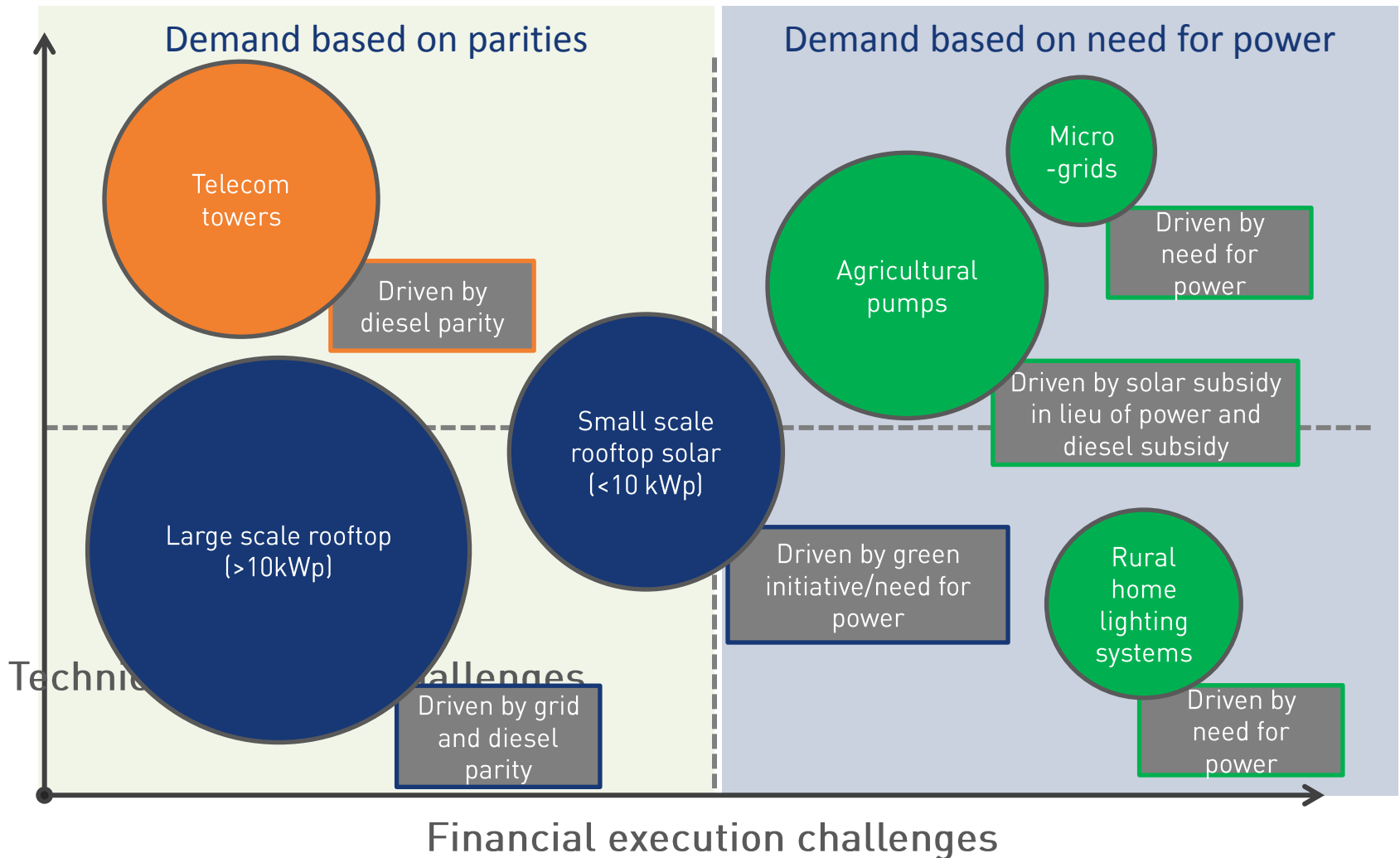
Prohibitive losses and charges that can potentially make solar uncompetitive



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Focus areas by type of support

Urban rooftop solar and solar for telecom only needs facilitation, rural applications need financial assistance



Source: Bridge to India analysis

Not to scale

Parity based demand

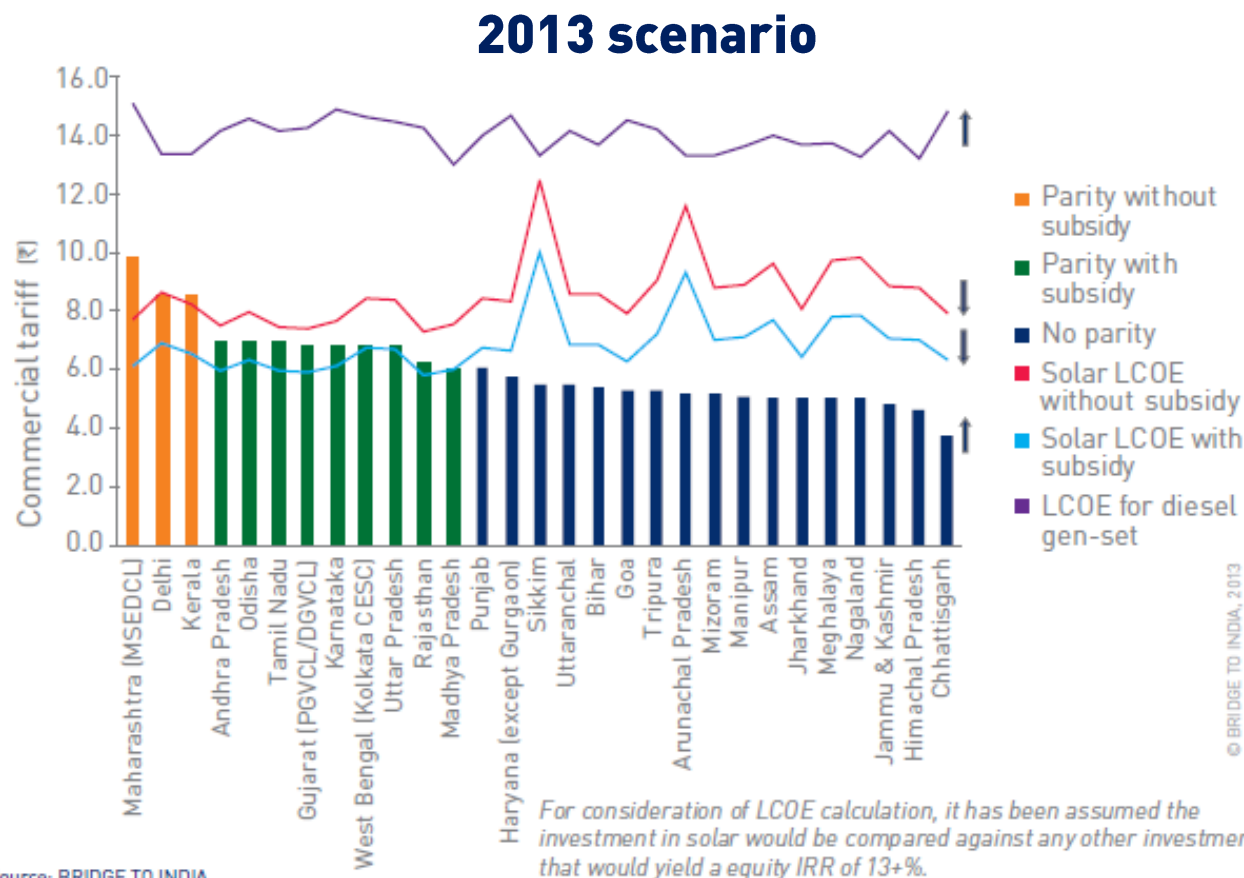
Segments are driven by different factors

- “Three Indian states with a potential of 728 MW of solar installations till 2016 have already reached parity.

Key assumptions;

- System size 100 kWp
- IRR expectation: 13%
- Interest rate: 13%
- System cost: INR 82/kWp

Three states have already reached commercial parity ,
40% of the states have reached parity with MNRE subsidy



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Parity based demand

Segments are driven by different factors

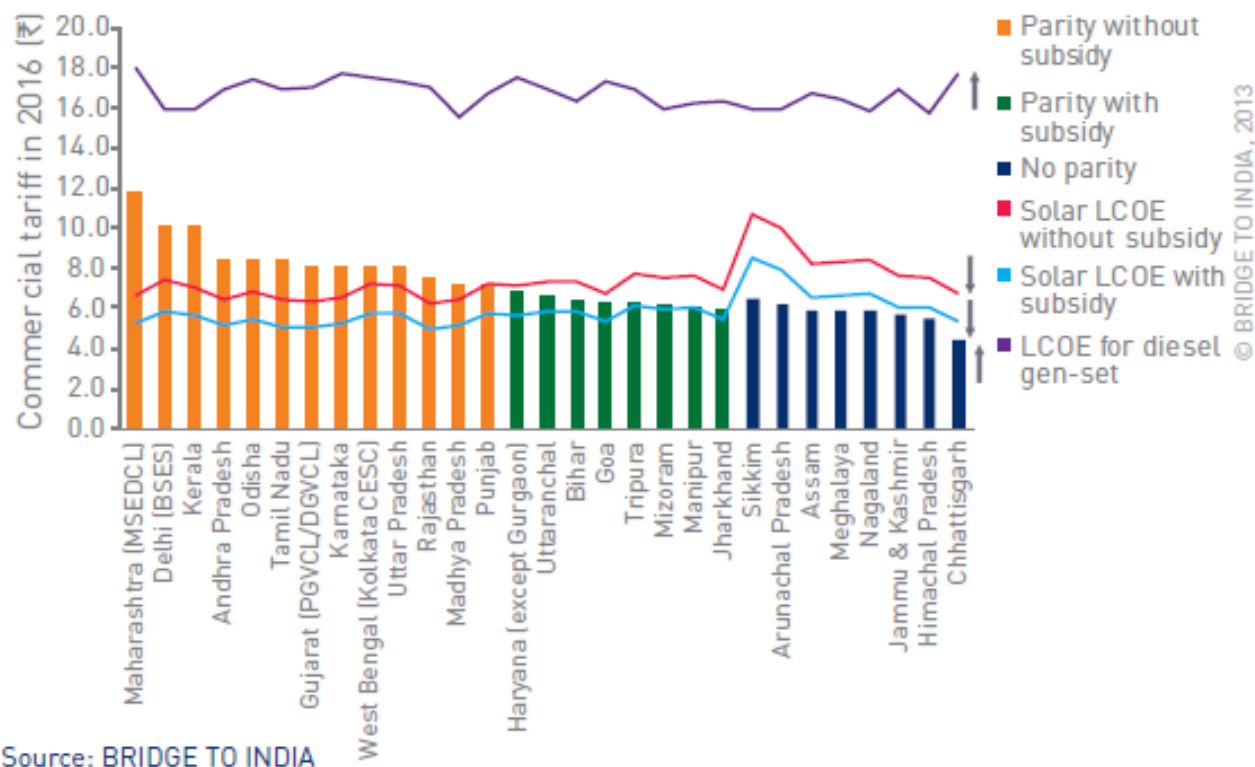
- “India can have an installed capacity of around 2.3 GW by 2016 for commercial parity driven projects.”

Key assumptions;

- System size 100 kWp
- IRR expectation: 13%
- Interest rate: 13%
- System cost: INR 82/kWp

46% of the states to have unsubsidized commercial parity by 2016; 75% of the states with capital subsidy

2016 scenario

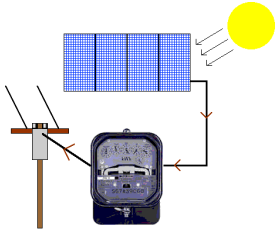


Taking solar away
from subsidy

Current regulatory framework supports centralized generation, solar PV needs a paradigm change

What needs to be done?

Net-metering



Why do we need a change?

- Removes the need for expensive batteries
- Stops wastage of power
- Improves system utilization
- Reduces system cost
- Strengthens local grid

What will be the impact?



- Will open up the rooftop generation market in India

Separate open-access rules



- Charges for transmission, cross subsidy and banking are designed with centralized generation in mind, de-central power needs separate charges (if any)
- Will allow third-party sale of power



- Will open up the merchant market for sale of solar power

Improved REC mechanism



- Renewable Energy Certificate (REC) mechanism in its current form does is available for captive generation
- The prices should be completely market driven with a benefit given to older plants equivalent to cost reduction



- Will kick start the solar RECs market

Taking solar away
from subsidy

Unlike fuel based power projects, solar projects need all the capital upfront, making financing crucial

What needs to improve?

How can it improve?

What will be the impact?

Access to finance



- Priority sector lending for solar power will improve availability of funds for the sector
- Over-arching payment security scheme for all public sector power purchase agreements.
- Education of banking community so that consumers can avail loans in the same way as that for homes and cars.



- Improved investor confidence
- Timely completion of projects
- Improved bankability

Cost of finance



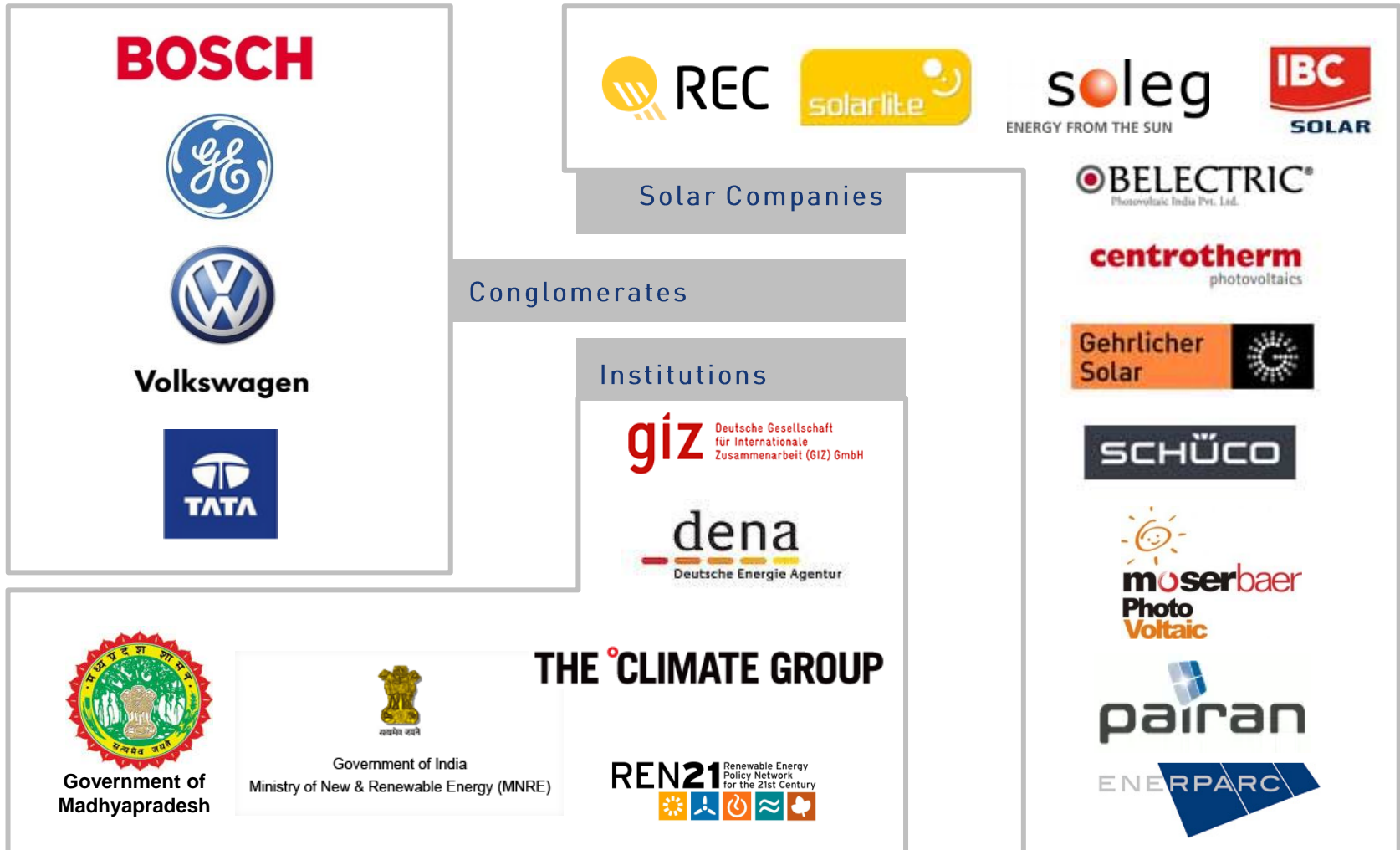
- Cheaper financing from National Clean Energy Fund
- Hedging support for international finance for large projects
- Specialized Non-Banking Finance Company (NBFC) with mandate to provide a low cost finance to cater to consumer loans for solar installations



- Improved financial viability of projects
- Direct adoption of solar by customers paying high tariffs for conventional power

Our customers

We have serviced many international solar players with our Indian market knowledge





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We are happy to support you
in any further queries

Thank you for your attention

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