Chasing targets in difficult times

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We have come a long way

0.002

GW of Installation of Solar Power in 2009

25

GW of Installation in 2018

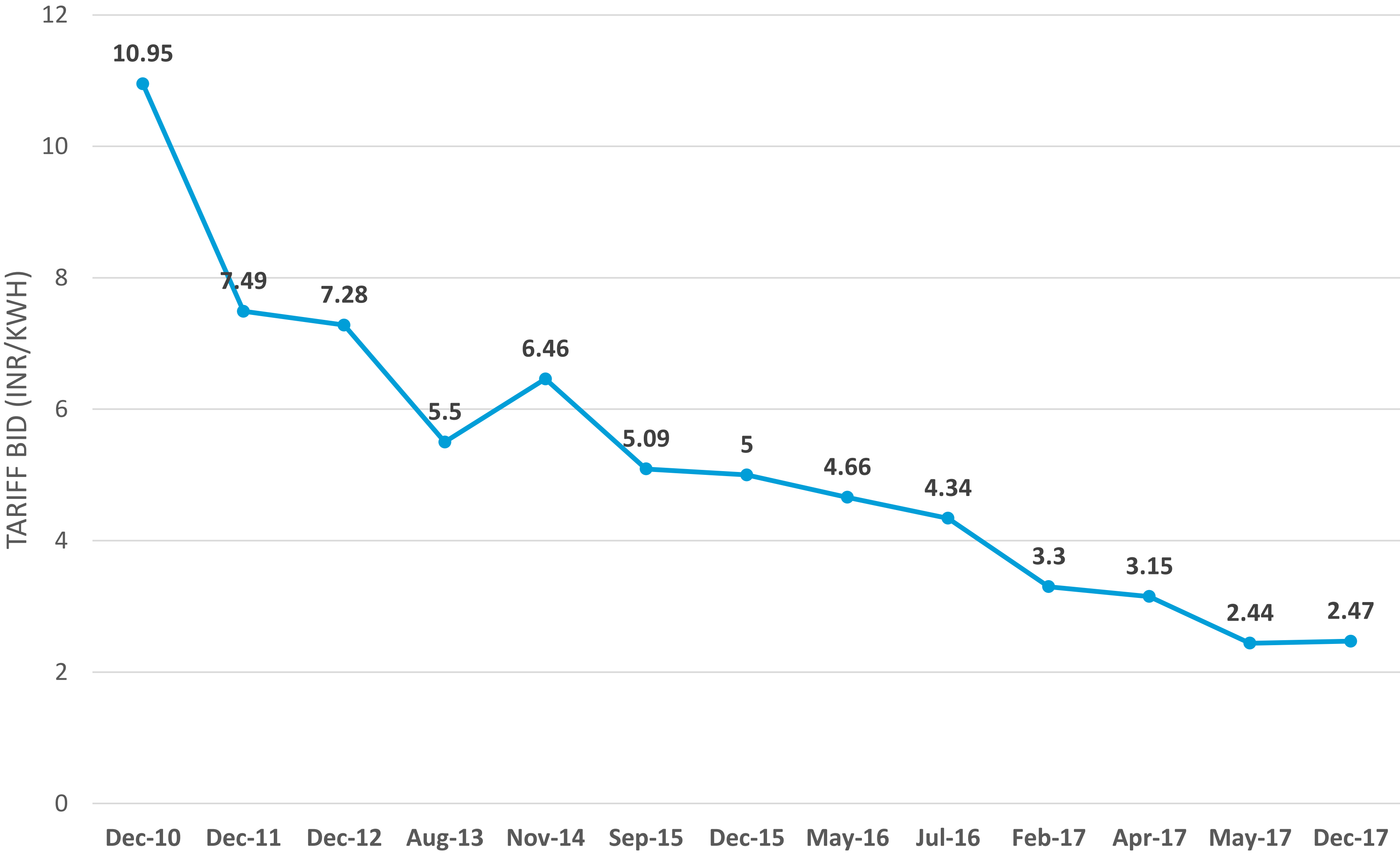
50%

CAGR required if we want to achieve the 100 GW target

Challenging but achievable

Source: CEEW Analysis

How solar tariffs bottomed out



Source: CEEW Analysis; MNRE

Uncertainty a major hurdle

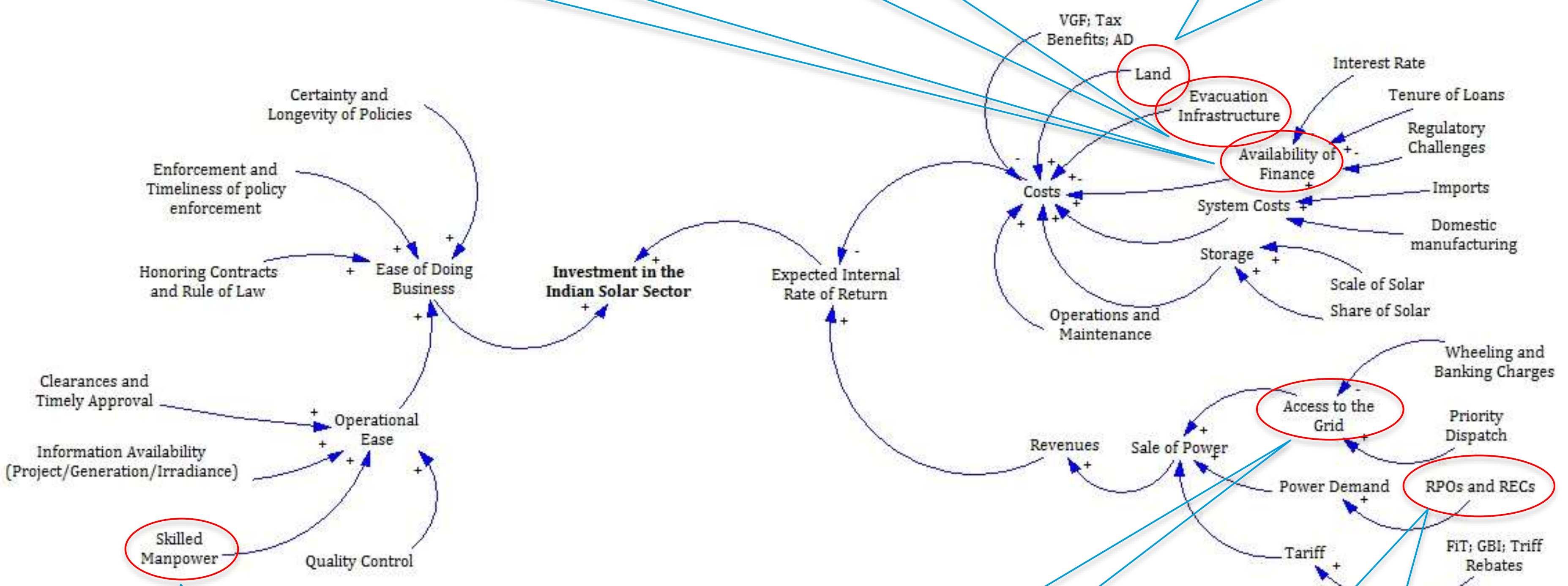
- **Unclear targets**
  - Applicability of targets in states
  - Applicability of RPO & RGO
- **Procedural flaws**
  - Applicability of GST
  - Passthrough provisions of Safeguard duty
  - Change in law provisions in tender
  - BCD on solar modules
  - Quality control orders
- **Reliability of commitments**
  - PPA re-negotiation
  - Cancellation of bids
  - Delay in payments
  - Grid Curtailments
- **Infrastructure bottlenecks**
  - Availability of land & preparedness of solar parks
  - ROW issues
  - Evacuation challenges

What factors determine returns in renewable energy?

Offtaker risk
Evacuation infrastructure risk
Foreign exchange risk
Construction & regulatory risk
Technology risk

Evacuation infrastructure within solar parks
Green Energy Corridor
Deemed generation

Solar Parks; Mega Solar Parks
Rajasthan land leasing
Karnataka aggregation & leasing
Madhya Pradesh exemptions on stamp duty



1,116,400 jobs for 100 GW solar
180,000 jobs for 60 GW wind
50,000 *Surya Mitras*
Skill Council for Green Jobs
National Certification Programme for Rooftop Solar PV Installer

Forecasting of RE generation
Renewable sources exempted from inter-state transmission charges – National Tariff Policy
Pilots on energy storage

21% by 2012 (10.5% solar & Non-solar
Extended to open access users and captive power (draft RE Act)
DISCOMs can now procure bundled solar power on a cost plus basis
REC price band revised downwards to stimulate active REC trading

SOURCE: CEEW analysis

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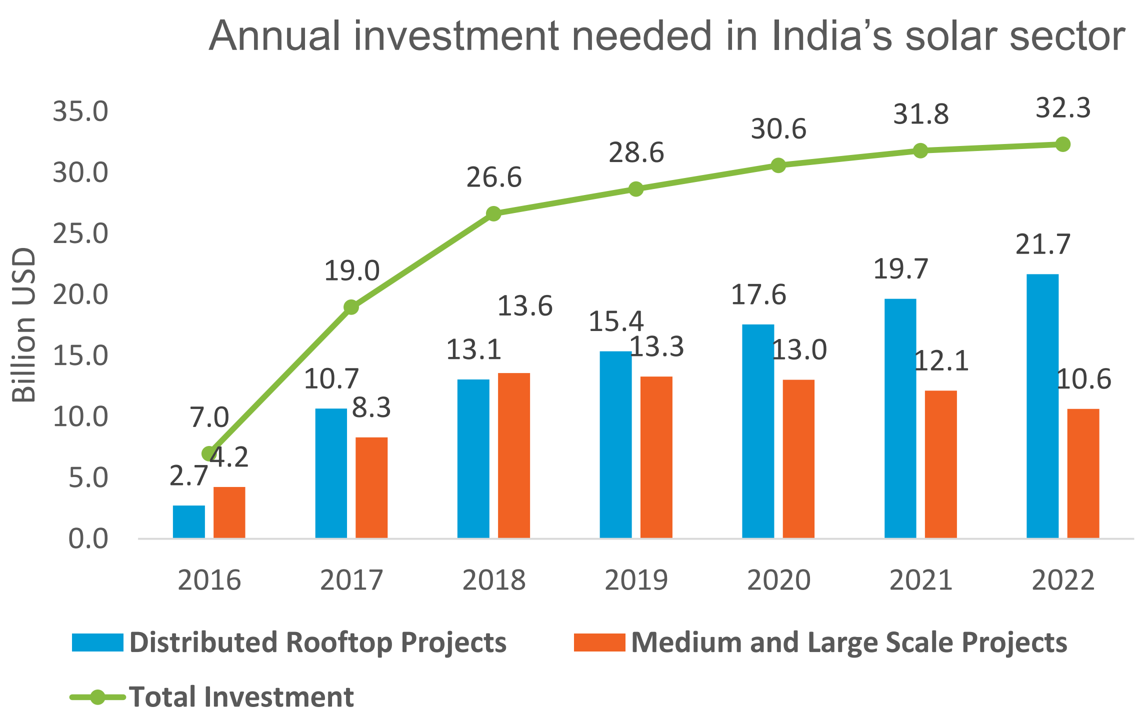
RE Investment Flows

RE Investment Flows	Average 2013-2017 (USD Billion)	2017 (USD Billion)
India[1]	10.0	10.9
Global[2]	321	334



1 Source: BNEF, *Global Trends In Renewable Energy Investment 2018*, 2018; Chawla 2016

2 Incudes large hydro investments

Overcoming challenges to meet targets

- **Increasing coherence between various actors**
  - Clarity on policies which affect installation (open access, banking, net metering etc)
- **An eco-system with incentives and penalties**
  - Strict enforcement of RPO/RGO
- **Improving transparency on procedures**
  - Confusion during implementation of GST, BCD & Safeguard duty
  - Bids should not be cancelled and PPA not be re-negotiated
- **Abandoning retrospective changes**
  - Incentives agreed during bidding should not be rolled back
- **Improving infrastructure availability**
  - Grid evacuation & availability needs a major overhaul
- **Improving quality of projects**
  - Strict enforcement of quality orders
- **Mission 2030**
  - A new target will motivate and help industry re-align their business plan

Thank you

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