Centre for
Energy Finance

International
Energy Agency

CEEW Centre for
Energy Finance

India Clean Energy Investment Trends 2020

Mapping Project-level Financial Performance Expectations – Key findings

November, 2020

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Introduction

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Understanding how risks and policies shape investment flows

- To achieve India's clean energy targets, India's policymakers, industry actors, and financiers must act in a coordinated manner. For investments in clean energy to grow, policy measures must address the investment risks perceived by financiers and developers.
- The International Energy Agency (IEA) and the Council on Energy, Environment and Water Centre for Energy Finance (CEEW-CEF) have been working together since 2018 on assessing clean energy investment trends in India and identifying the risks that are critical for policy makers, developers, and financiers to address in order to mobilise the capital needed to meet India's investment needs.
- The **Clean Energy Investment Trends** 2020 report examines the appeal of competitively-tendered utility-scale solar PV and onshore wind investment in India by analysing project-level equity returns over 2019 and the first half of 2020. Further, it examines key sensitivities of returns to specific risk factors and stumbling blocks to attracting capital—policy uncertainty, financial health of state discoms, volume risk, and land-related constraints. It also includes an update on key renewable energy debt financing and market trends.

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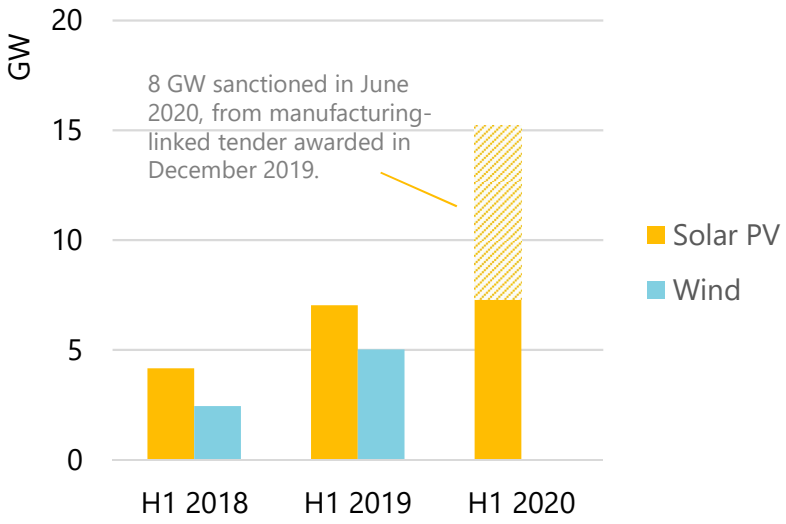
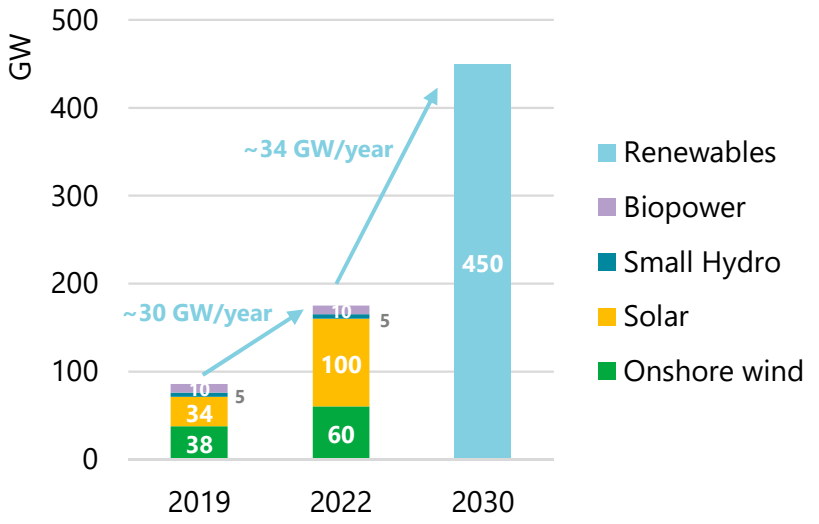
Interest to invest continued in 2020, but still far from targets

Capacity sanctioned in first half



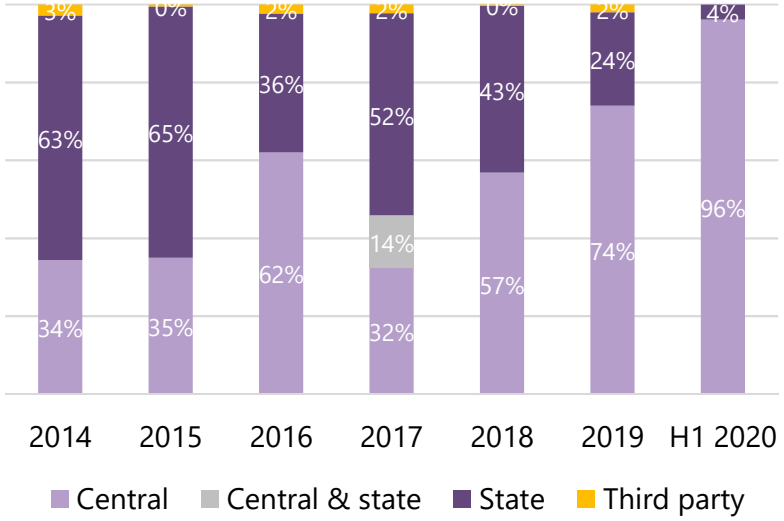
Installed capacity in 2019 relative to 2022 and 2030 targets

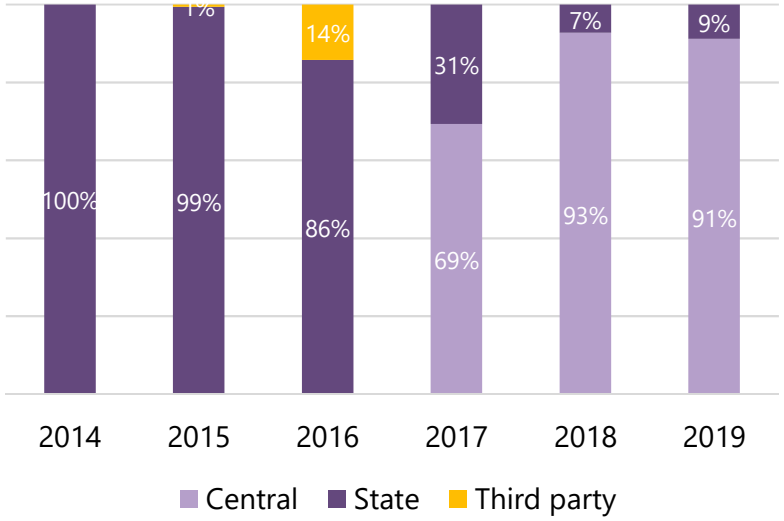


Capacity sanctioned in the first half rose for the third consecutive year in 2020, though actual financial flows are yet to follow. Investments would need to continue rising fast to reach the ambitious targets.

There is a preference for centrally-managed tenders

Share of solar (left) and onshore wind (right) projects by type of off-taker





Central tenders, with lower perceived risks and lower realized tariffs, were the preferred procurement option in 2019 and mid-2020.

Terms of debt

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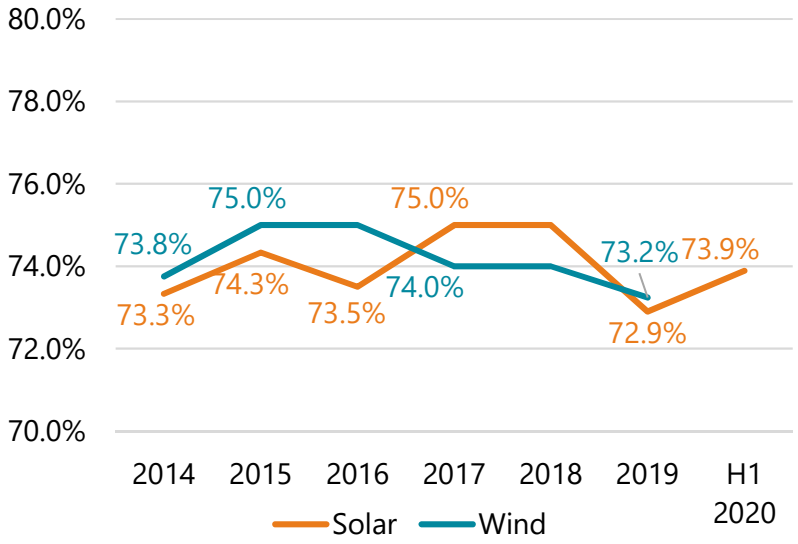
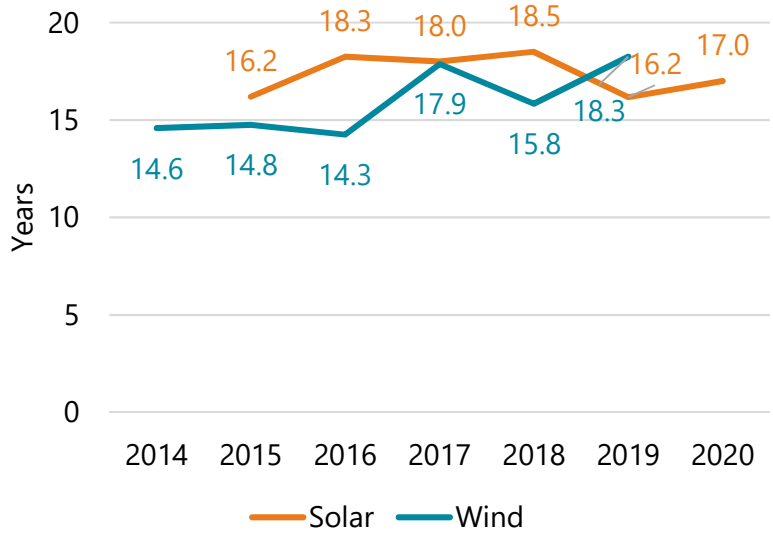
Debt availability and pricing have remained stable…

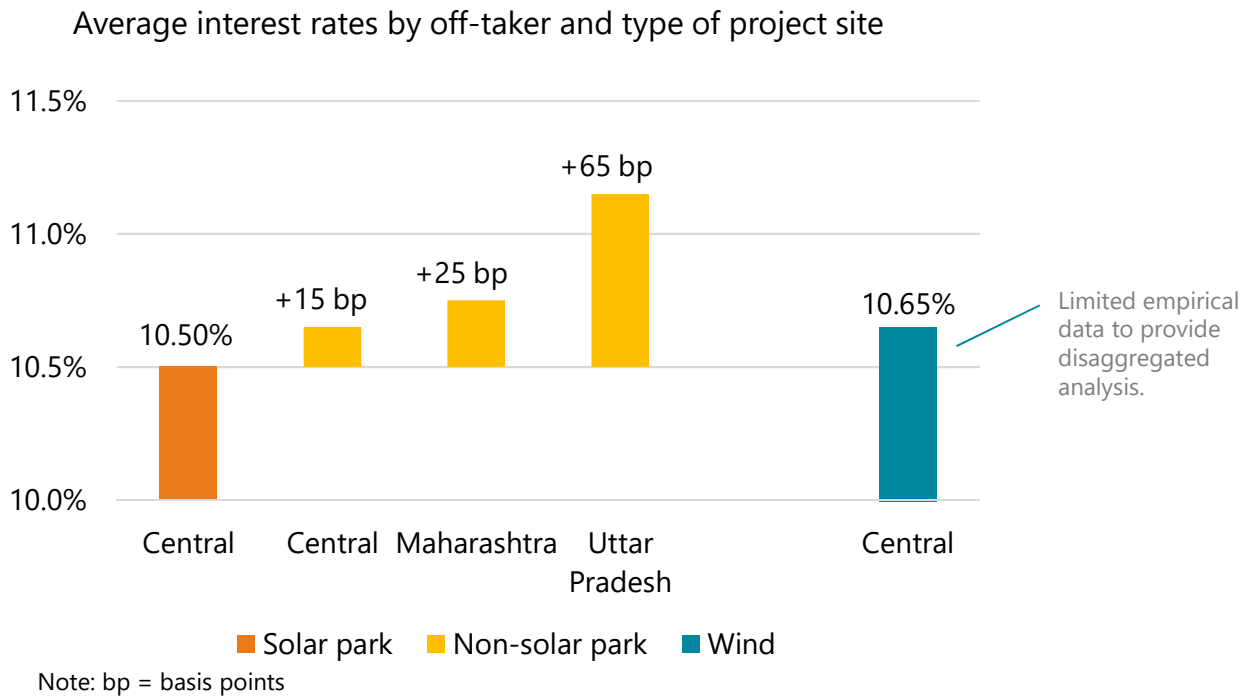
Weighted average debt ratio (left) and median loan tenures for solar and wind





Terms of debt have remained stable, with expansive monetary policy and liquidity support for non-banking financial companies easing pressures of stressed balance sheets exacerbated by COVID-19.

…with off-taker risk priced upwards

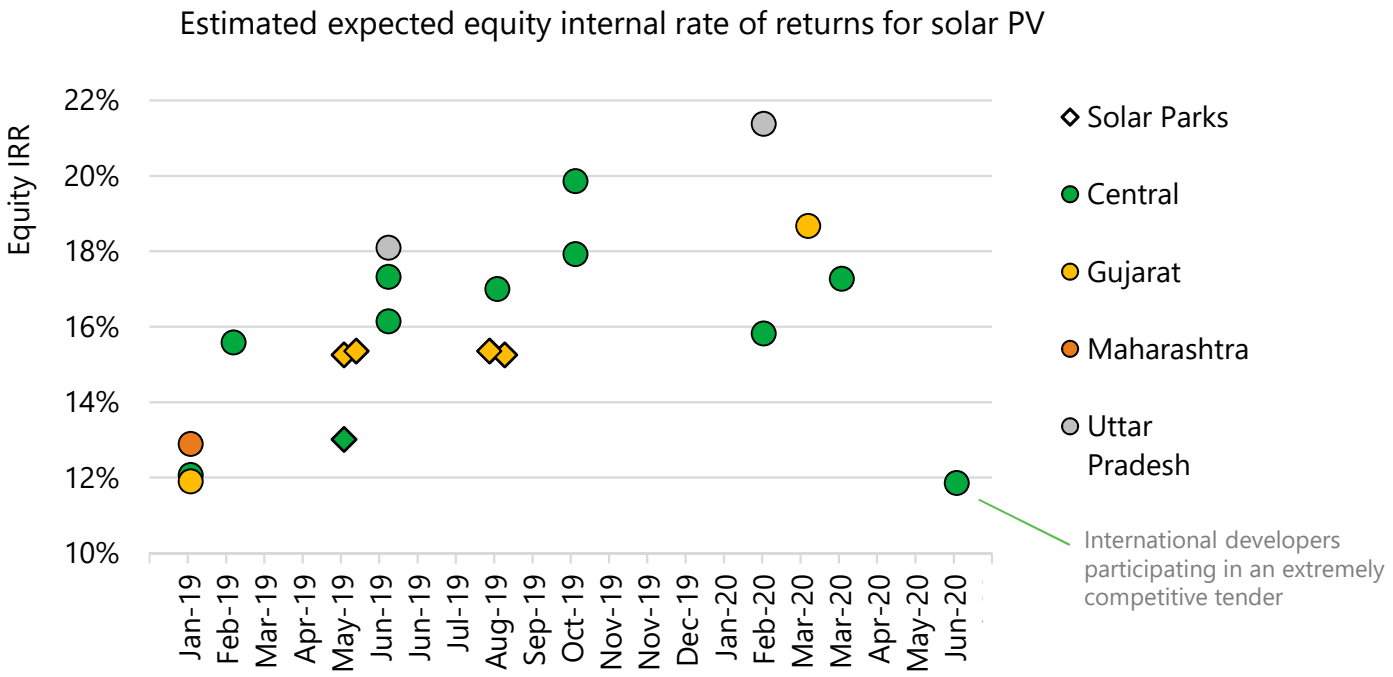


Note: bp = basis points

Controlling for the off-taker, interest rates were slightly more competitive for projects located in solar parks vis-à-vis those located on acquired or leased land.

Equity returns expectations

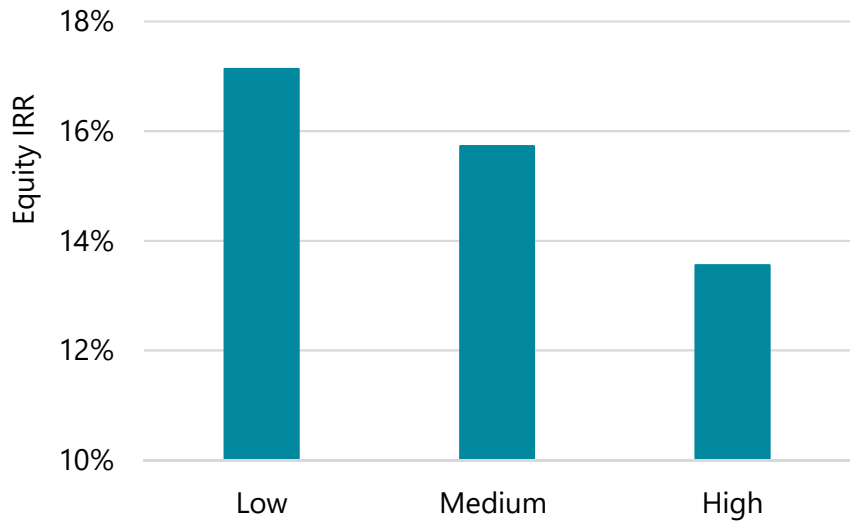
Equity IRR expectations for utility-scale solar were ~15% on average



Equity IRR (EIRR) expectations for solar PV projects rose from 14% in the first half of 2019, to 16-17% in the second half of 2019 and 2020, with variations depending on underlying perceived risks.

An evolving level of competition within tenders…

Expected equity returns by level of tender competition, utility-scale solar PV

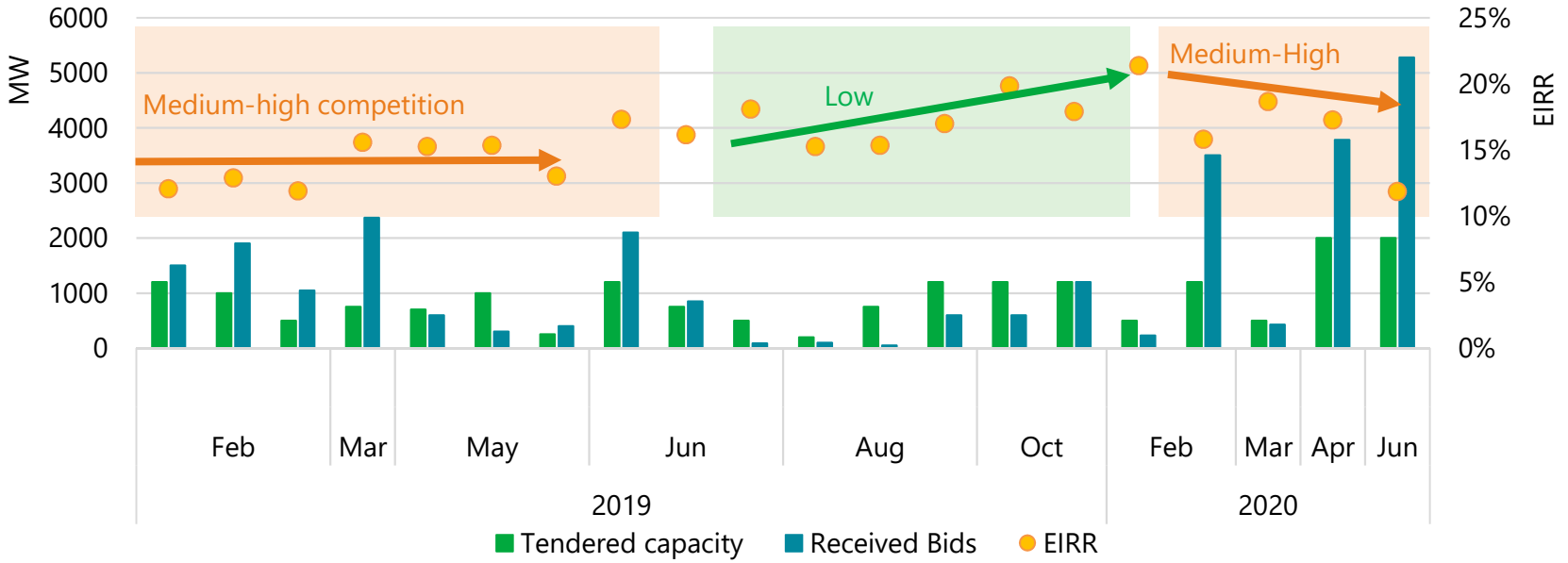


Note: The level of competition is measured as the ratio of capacity bid to capacity tendered. Low level of competition corresponds to a ratio < 1.0; medium-level corresponds to a ratio between 1.0 and 2.0, and high competition corresponds to a ratio higher than 2.0.

Tenders characterised by lower degrees of competition were associated with higher EIRR expectations, while those with greater competition were on average associated with lower EIRR expectations.

… in response to policy and market uncertainties

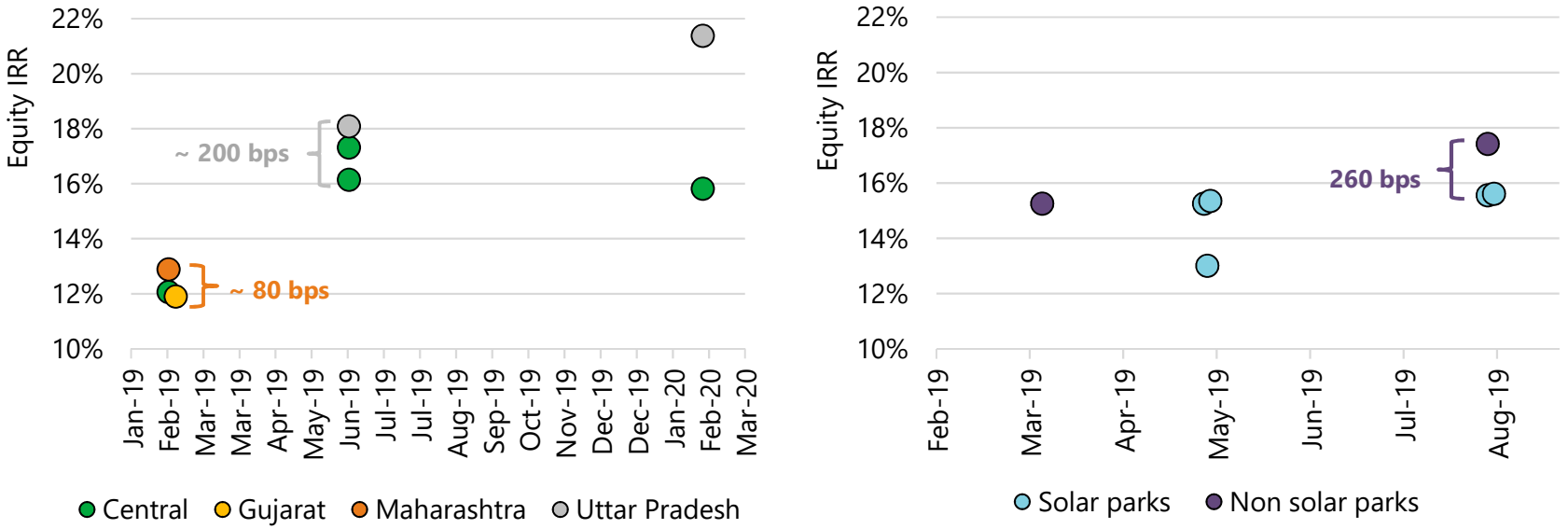
Equity expected returns by level of tender competition over time, utility-scale solar PV



The rise in EIRR expectations likely stems from uncertainties over potential contract renegotiation and imposition/extension of duties in 2019, reinforced by disruptions and delays caused by Covid-19.

Off-taker risk & type of site are key determinants of returns expectations

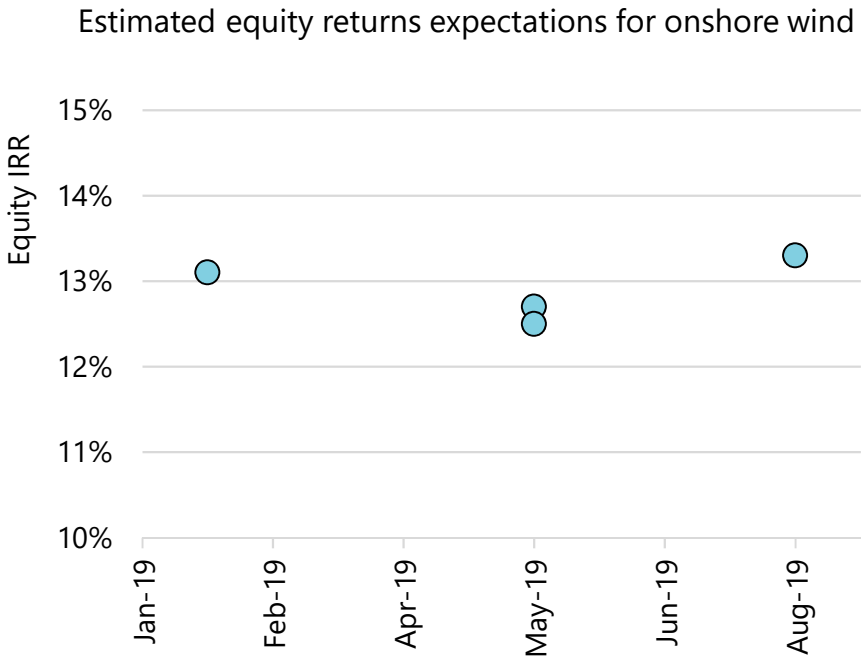
Estimated EIRR expectations by off-taker (left-hand) and type of project site (right-hand)



Note: bps = basis points.

Projects with the most creditworthy off-takers and those set up in solar parks (a plug-and-play model for setting up projects) were associated with lower EIRRs.

There was limited tendering activity in onshore wind power

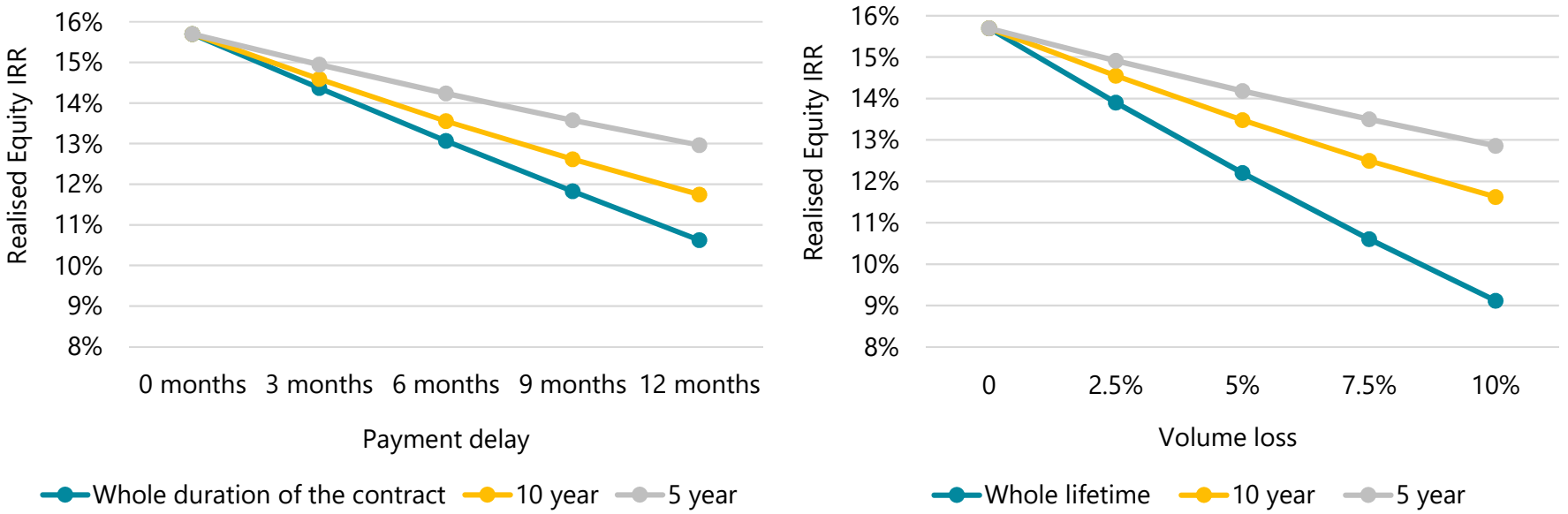


The estimated wind expected EIRRs are comparable to solar EIRRs for the same category of off-takers over the same time period. Tender-specific tariff caps might have capped returns expectations.

Sensitivity analysis of returns & industry landscape

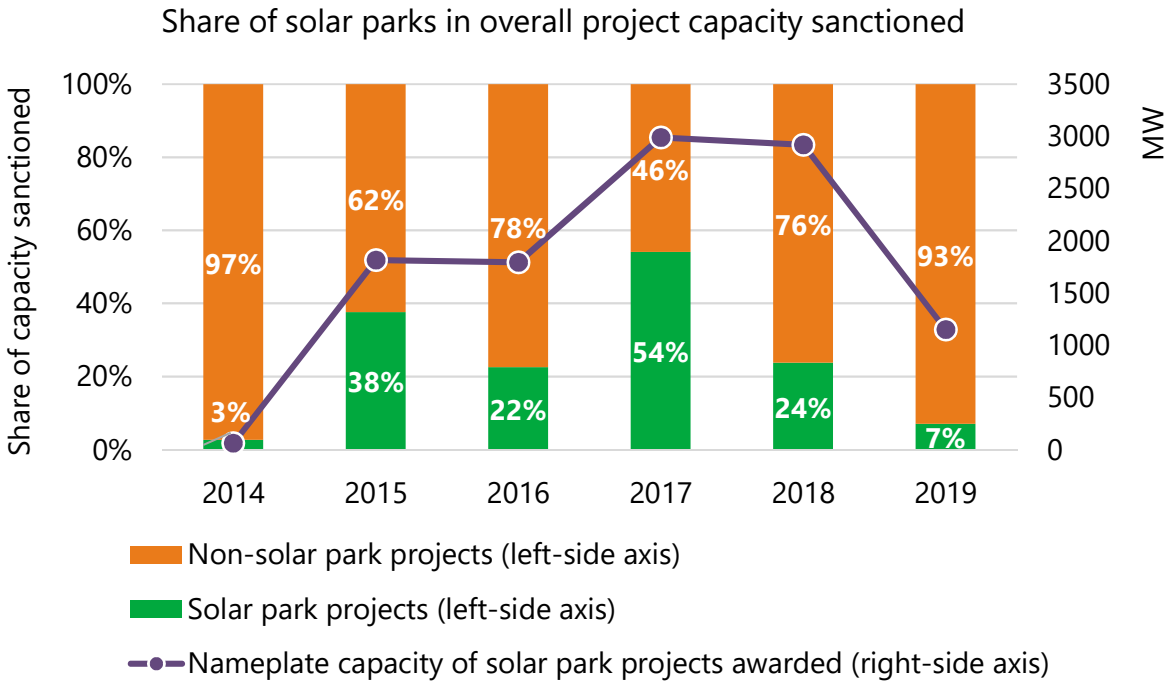
Payment delays and volume risks represent key downside risks

Equity IRR depending on payment delays (left-hand) and volume risk (right-hand) for solar PV projects



Small negative variations in both factors can create considerable deviations between *realised* and *expected* returns—according to a sensitivity analysis exercise included in the Trends report.

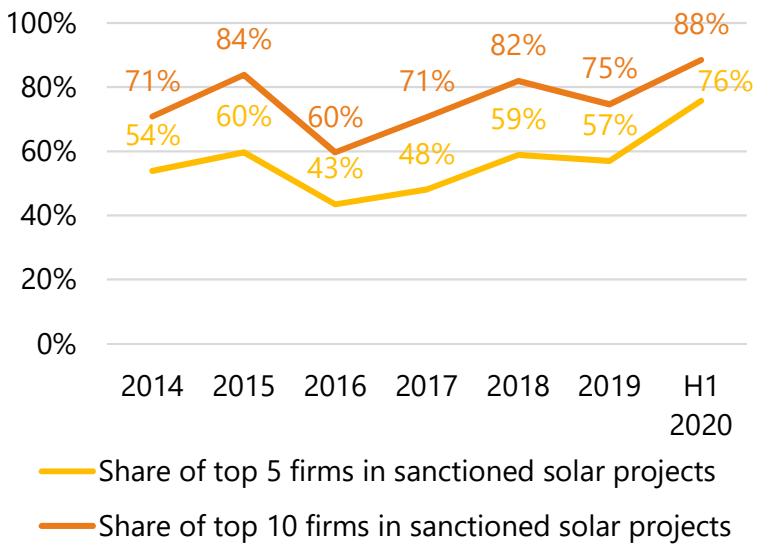
Timely availability of suitable sites emerging as key challenge

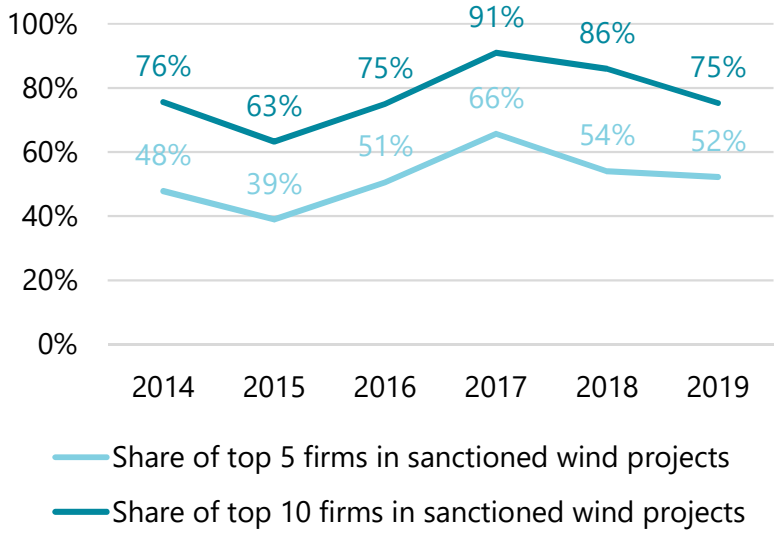


Land-related constraints have slowed the development of solar parks while challenges with accessing land in wind-resource-rich states have delayed project development and brought new tendering to a standstill.

Market concentration of developers remained high…

Share of top 5 and 10 top firm in sanctioned solar and wind projects





Top companies that can access financing at favourable terms have an advantage in structuring competitive auction bids.

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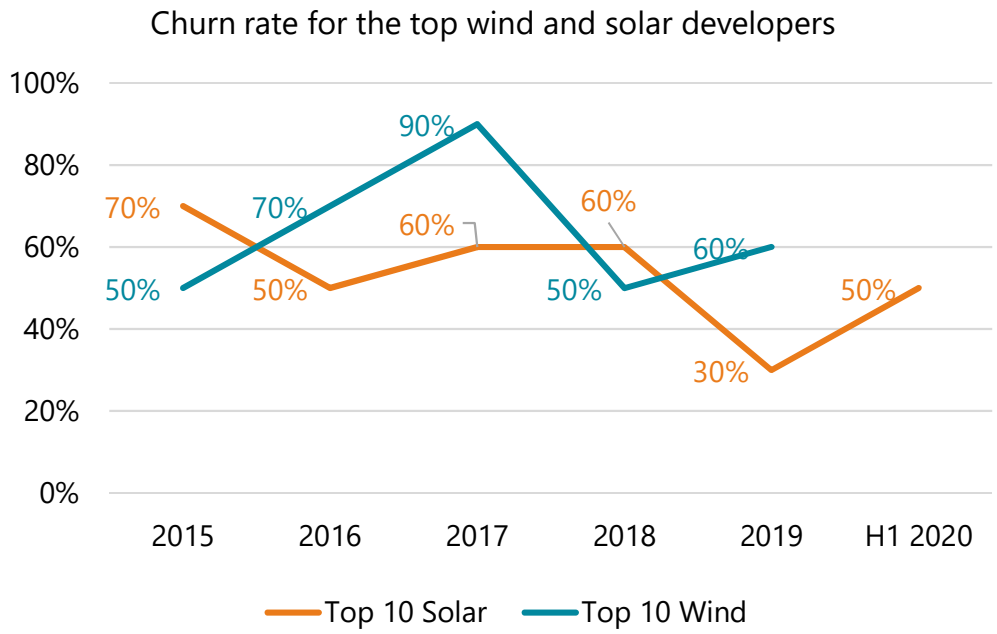
…with a higher churn rate for wind developers than for solar in 2019



The higher churn rate for wind in 2019 may indicate waning interest to invest amid an uptick in execution risks. The entry of few first-time solar bidders increased the churn in the first half of 2020.

Conclusions

- Preference for central government entities as off-takers has become stronger for developers.
- The availability and pricing of project debt has remained relatively stable over 2019 and H1 2020.
- EIRR expectations averaged ~15% over 2019 to mid-2020, though these rose from ~14% in H1 2019 to 16-17% for the period mid-2019 to mid-2020 as a likely response to policy and market uncertainties.
- EIRR expectations were higher where off-take risks were higher (by 80-200 bps); these were lower for projects on solar sites where land-related risks were lower (by 20-260 bps).
- The level of competition within tenders, which varied in response to evolving policy and market conditions, has been a key determinant in equity return expectations.
- The market concentration of developers has remained high, edging up for solar PV in particular.
- The timely availability of suitable sites for setting up renewable projects is emerging as an additional challenge for both solar PV and wind projects.
- Payment delays and volume risk represent key downside risks that, if realised, can significantly undermine returns.

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About our organisations

- The **International Energy Agency** (IEA) provides authoritative data, analysis, and recommendations across all fuels and all technologies, and helps governments develop policies for a secure and sustainable future for all. The IEA was created in 1974 and examines the full spectrum of issues including energy security, clean energy transitions, and energy efficiency. It is a global leader in understanding pathways to meeting climate goals, reducing air pollution and achieving universal energy access, in line with the UN Sustainable Development Goals. The IEA family of countries accounts for 75% of global energy consumption, and includes 30 Member countries and 8 Association countries -- Brazil, China, India, Indonesia, Morocco, Singapore, South Africa, and Thailand.
- The **Council on Energy, Environment and Water** (CEEW) is one of Asia's leading not-for-profit policy research institutions. The Council uses data, integrated analysis, and strategic outreach to explain and change the use, reuse, and misuse of resources. It prides itself on the independence of its high-quality research, develops partnerships with public and private institutions and engages with the wider public. In 2020, CEEW has once again been featured across nine categories in the 2019 Global Go To Think Tank Index Report. It has also been consistently ranked among the world's top climate change think tanks.
- The **CEEW Centre for Energy Finance** (CEF) is an initiative of the Council on Energy, Environment and Water (CEEW), one of Asia's leading think tanks. CEF acts as a non-partisan market observer and driver that monitors, develops, tests, and deploys financial solutions to advance the energy transition. It aims to help deepen markets, increase transparency, and attract capital in clean energy sectors in emerging economies. It achieves this by comprehensively tracking, interpreting, and responding to developments in the energy markets while also bridging gaps between governments, industry, and financiers.

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