Research

CRISIL
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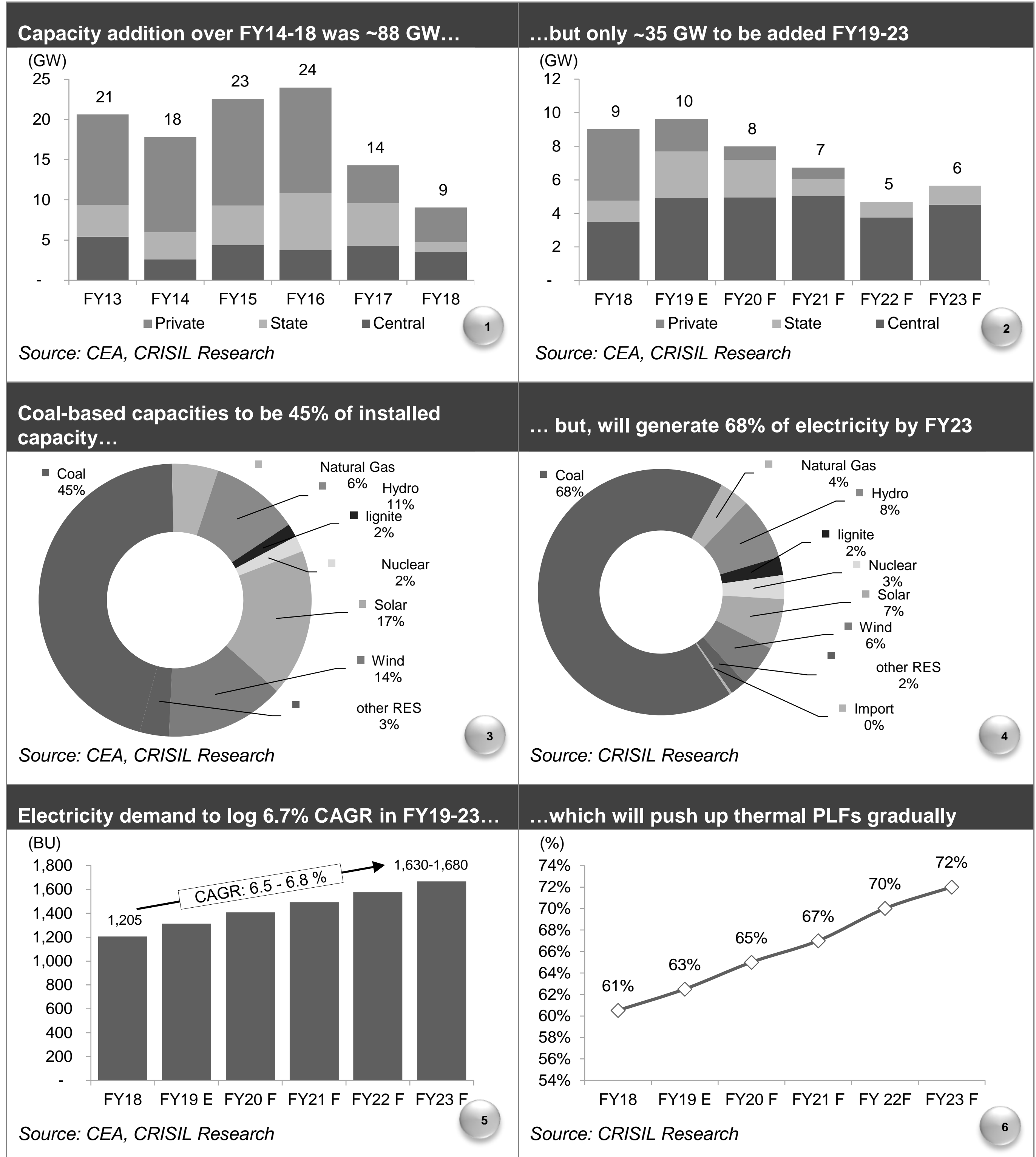
The big plunge in thermal power

Capacity additions to halve over the next 5 years on truant PPAs, erratic coal supplies, and rise in renewables

October 2018

Screenshots



Modest demand, lack of PPAs, weak wherewithal limit capacity addition

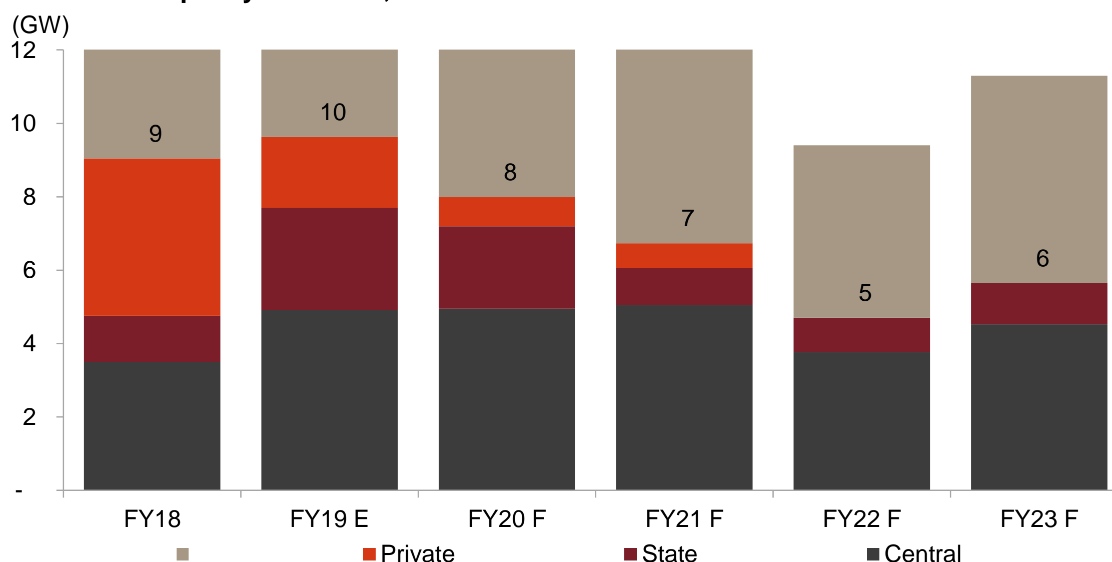
Power demand clocked a compound annual growth rate (CAGR) of 3.8% over the last five years, riding on improvement in energy efficiency and reduction in transmission and distribution (T&D) losses, but also power cuts and load shedding due to the weak financial health of discoms and lack of intensive electrification.

Over the next five fiscals (2019 through 2023), however, CRISIL Research expects power demand to escalate to a CAGR of 6.5-6.8%. High latent demand, rapid urbanisation, and the government's thrust on rural electrification will spur robust residential demand for power. Industrial demand, though, will grow at a moderate pace in line with growth in the gross domestic product (GDP) and gradual pick-up in economic activity.

Capacity additions in power generation are expected to slow down to 35 GW (excluding renewables) between fiscals 2019 and 2023, compared with 88 GW added over the past five years. Consequently, a large number of projects that are at a nascent stage are likely to get postponed until the demand situation improves significantly. Moreover, fresh project announcements are limited as players are opting for the inorganic route for expansion, as a number of assets are available at reasonable valuations.

The private sector will bear the brunt as large capacities of private sector projects under construction are stuck due to financial problems faced by promoters. Lenders are reluctant to extend further capital as the future of these projects is uncertain given the circumstances. Hence, a considerable number of under-construction capacities face a potential liquidation risk over the forecast period.

Sector-wise capacity additions, FY19-23

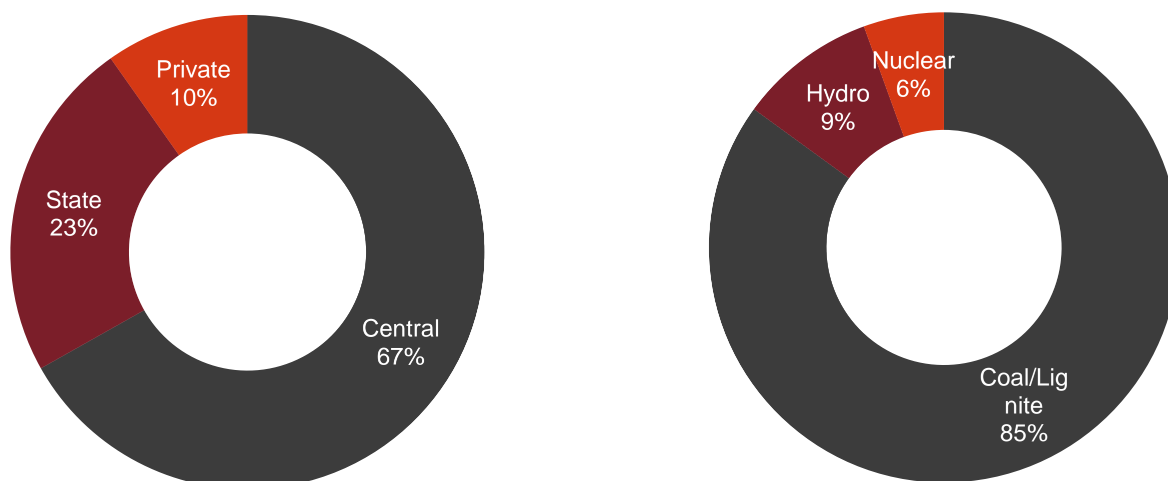


Source: CEA, CRISIL Research

CRISIL Research expects ~85% of the total 35 GW capacity additions between fiscals 2019 and 2023 to be coal-based, led by a large number of planned projects that are at advanced stages of completion and have some sort of fuel supply and off-take arrangements already in place. In spite of this, all these projects are expected to face ambiguity over fuel supply as well as power offtake on account of the supply surplus situation prevailing in the sector. On the other hand, there will not be any significant gas-based capacity additions over the next five years on account of severe constraints in domestic gas availability. Also, hydro-power capacity additions are estimated at only ~3.2

GW on account of long gestation period and geological risks associated with these projects.

Sector-wise and fuel-wise capacity additions, FY19-23



Source: CEA, CRISIL Research

Supply glut to weigh down power sector in the medium term

A robust pick-up in power demand – crucial for revival of the stressed generation segment – has eluded the sector despite several measures initiated by the government.

As of fiscal 2018, major distribution companies (discoms) had already tied up for excessive power procurement through long-term power purchase agreements (PPAs) to meet their respective demand.

The overall power procurement structure is also expected to undergo a shift and discoms are likely to prefer short/ medium-term procurement instead of long-term PPAs considering the increasing share of intermittent renewable energy and rise in industrial open access consumption. As discoms are avoiding tying up for excessive capacities under such uncertain sales growth projections, negligible fresh PPAs for conventional power are expected till fiscal 2023. This means financial woes will continue for generators with untied capacities.

However, PFC has recently signed a memorandum of understanding (MoU) with PTC India Ltd for exploring power procurement opportunities from existing coal-based power plants to facilitate signing PPAs with discoms. As of now, it will be limited to already-commissioned coal-based power plants without PPAs.

Sale of power through the merchant route is also an unsustainable option given the continued decline in short-term power prices, which, after firming up during the first quarter, stood at Rs 3.5 per kWh on average in fiscal 2018 (weighted average prices of power transacted on exchanges and bilateral transactions through traders). Prices are expected to remain low at Rs 3.4-3.7 per kWh over the medium term.

Low tariffs in exchanges can only cover fuel cost, thus limiting any possibility of revenue generation for untied capacities. Consequently, consolidation in the sector is expected to be slow and takeover of stressed assets will be limited to the extent of tied-up capacities as witnessed in recent past.

Timely and effective implementation of redressal measures critical

The government has initiated several measures to alleviate stress in the power generation segment, the most recent being the Scheme for Harnessing and Allocating Koyala (Coal) Transparently in India (SHAKTI) policy, which is aimed at removing fuel supply bottlenecks by providing coal linkages to plants having a letter of assurance (LoA). This would keep their generation cost low and ensure increased plant availability with assured fuel supply.

However, availability of fresh PPAs and discounting on existing PPA tariffs are key monitorables. The flexible coal utilisation policy for state and central generation plants notified earlier in May 2016 has also brought down the fuel cost, which is evident from the reduced average generation cost of National Thermal Power Corporation Ltd (NTPC) plants at Rs 1.82 per kWh in fiscal 2018 compared with Rs 1.94 per kWh in fiscal 2017 owing to improved coal quality and supply.

The government is also looking to set up a holding company (National Asset Management Company (NAMC)) for identified stressed assets, with the help of NTPC, Power Finance Corporation (PFC), Rural Electrification Corporation (REC) and banks, which will auction stressed plants or lease them on contract basis after the lenders take control of management.

However, the lenders and promoters will have to take significant haircut through debt-equity swap.

Meanwhile, the RBI has issued a notification on “Resolution of Stressed Assets - Revised Framework” that mandates banks to classify debt as default in case of even one day's delay in servicing. As per the revised framework, projects with interest or principal overdue starting from 1 day to 30 days will be categorised as ‘special mention accounts category - 0’. The most stringent change in the framework is that all the lenders have to agree upon a resolution that has to be reached in 180 days. The new guidelines are likely to add to the stress in the sector.

Lenders are also instrumental in resolving the problem of bad loans in the power sector. For instance, the State Bank of India has come up with the Samadhan Scheme for resolution of stressed assets, under which 11 operational projects having either partial or full power purchase agreements and assured fuel supply are available for takeover from lenders who have converted their portion of debt into equity to be sold to prospective buyers to recover debt. However, players are bidding much lower than actual investment in assets, leading to huge haircuts for banks.

All the same, resolution will be challenging given the sector dynamics.

Stress in generation continues; T&D poised for healthy growth

India’s inter-regional power transmission capacity has increased from 17 GW in fiscal 2007 to 86 GW at the end of fiscal 2018 and is expected to increase further to 130 GW by fiscal 2023.

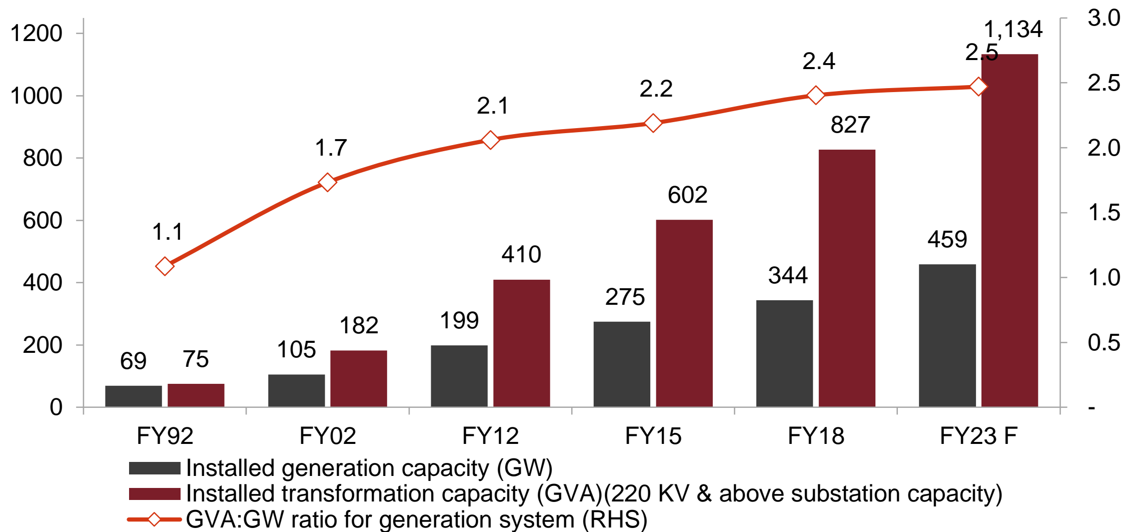
Strengthening and expanding the regional and intra-state grids along with improved rural electrification is also expected to ease grid congestion and supply constraints, eventually benefiting power generators.

The planned strengthening of the inter-state transmission system in West Bengal and the northeastern region, associated transmission systems within states, and ultra-high-capacity green energy corridors with expected investment of Rs 430 billion would drive growth in the transmission segment.

Transformer capacity of 290-300 giga volt-amp (GVA) is expected to be commissioned in the next five years. In the transmission line segment, we expect moderate growth in high voltage (HV) lines of 400 and 765 kV due to their importance in inter-state transmission lines.

Higher voltage level enhances power density, reduces losses and efficiently delivers bulk power. Moreover, it reduces the requirement of right of way, a key challenge facing the transmission sector. Thus, CRISIL Research believes the MVA:MW ratio would further improve to around 2.5 by March 2023.

Outlook on transformation capacity by FY23



Source: CEA, CRISIL Research

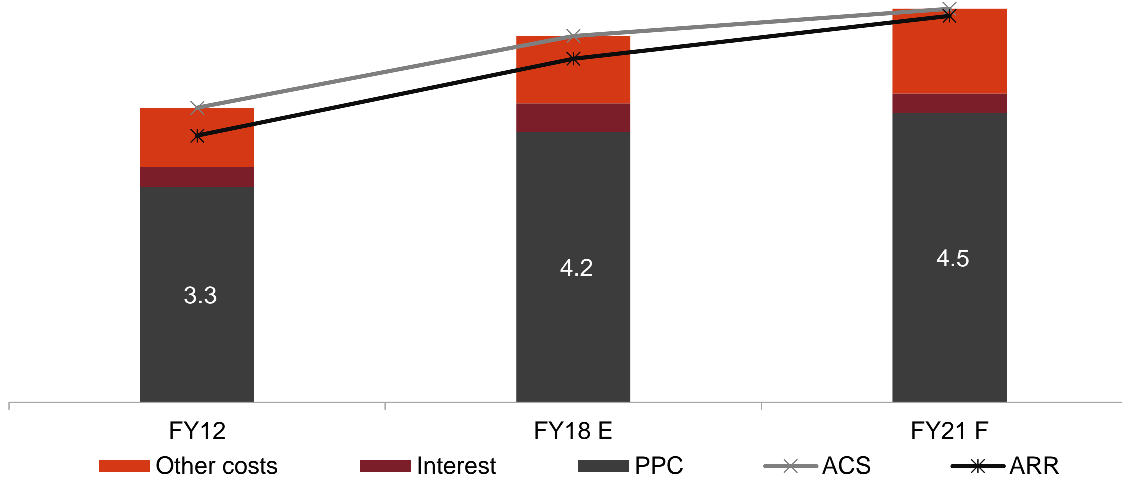
Also, on the distribution front, there has been reasonable traction with all major states (except West Bengal) signing MoUs under the Ujwal Discom Assurance Yojana (UDAY), which will gradually improve the respective discom's financial position. With bonds worth Rs 2.3 lakh crore being issued (86% of target) at the end of fiscal 2018, debt and interest burden on discoms has been reduced, resulting in higher liquidity.

On the operational efficiency front, the gap between average cost of supply (ACS) and average revenue realised (ARR), and aggregate technical and commercial (AT&C) losses reduced to Rs 0.28 per kWh and 20.2%, respectively, in March 2018 from Rs 0.58 per kWh and 24.6% at the end of fiscal 2015.

Regular tariff revisions and large-scale investments in distribution infrastructure for operational efficiency are critical to improve the financial health of the state discoms. Under the central government-sponsored schemes – Integrated Power Development Scheme (IPDS) and Deendayal Upadhyaya Gram Jyoti Yojana (DDUGJY) – projects worth Rs 699 billion have already been sanctioned and are under implementation. These, along with investments in the forecasting and scheduling mechanism, grid monitoring and balancing requirement on account of rising share of intermittent renewable energy and demand side management, smart metering, etc., are expected to result in robust growth of the distribution segment.

Outlook on ACS–ARR gap by FY21

(₹/kWh)

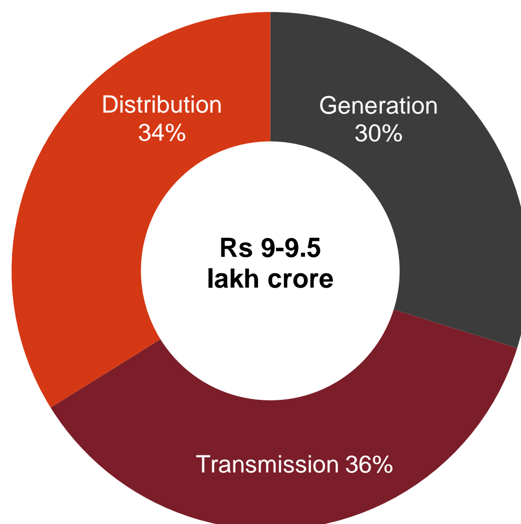


Source: CRISIL Research

T&D to drive investments in the next five years

CRISIL Research expects investment worth Rs 8.5-9 lakh crore in the power sector over the next five years (i.e. fiscals 2019-2023), marginally lower than that seen in the past five years, as generation capacity additions are likely to slow down. While the generation segment will continue to account for the large share of investments, it is expected to be significantly lower at ~30% (excluding renewables) over the forecast period compared with 51% in the last five years.

Outlook on investments in power sector over FY19-23



Source: CRISIL Research

On the other hand, investments in the transmission segment (~Rs 3 lakh crore) are expected to witness strong growth over the next five years, led by robust investments in inter-regional transmission by Power Grid Corporation of India Ltd and steady investments from various states to augment intra-state network. Increasing private sector participation will also support the transmission segment investments. The distribution segment investments (Rs 2.6-2.8 lakh crore) are expected to be driven by increased outlay from the central government on various distribution-related schemes such as DDUGJY, IPDS and state investments to reduce AT&C losses.

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