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India's Power Distribution Sector Needs Further Reform

Unshackling From the Woes Inflicting the Sector

Executive Summary

Power distribution is the weakest link in the entire value chain of the Indian power sector.

While headwinds are affecting the power sector as a whole, such as electricity demand slowing in tandem with the recent deceleration in economic growth, the distribution of power continues to fail as it has done for many years, primarily due to the flailing state-owned power distribution companies (discoms).

Various government reforms have been initiated to improve the sector's commercial viability and performance, but are yet to make a sizeable dent. Discoms continue to incur huge financial losses. Absence of competition, economically inefficient tariff setting processes, lack of modern technology and infrastructure development are adding to those losses.

India has set ambitious long-term targets for its electricity sector, including 450 gigawatts (GW) of renewables by 2030, representing a total of 55% of planned capacity.

For the country to achieve its ambitious renewable targets and sustain its economic growth goals, the crippled power distribution sector must be made profitable.

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IEEFA recently found discoms are struggling under massive debt to the thermal power sector. There is currently upwards of US$100 billion of non-performing or stranded assets shared between discoms and the thermal coal- and gas-fired power plant sectors.

The dire financial health of state owned discoms means these companies do not have the capital available to invest in technology and the much-needed modernisation of the national grid.

Discoms are increasingly reducing power received from energy generators, including from zero marginal renewable energy projects they are contractually bound to take. Some of the state discoms are also forcibly renegotiating legally contracted tariffs, and are failing, once again, to meet long outstanding payments to renewable energy generators.

This situation is increasing the risk for renewable energy generators and their financial backers, restricting them to participate only in bids for which they can raise the capital cost for setting up new domestic energy capacity to meet energy demand growth.

Reforms Have Failed to Reframe the Distribution Sector

In order to help state owned discoms pare their mounting losses, the central government has offered financial packages to bail out beleaguered state electricity discoms from time to time.

In 2012, the Government of India (GoI) approved the Financial Restructuring Plan, aimed at improving the financial long term viability of state discoms.

Then in 2015, the GoI's Ministry of Power launched the Ujwal Discom Assurance Yojana (UDAY) scheme to improve the transparency, operational and financial performance of discoms with the clear objective of reducing losses.

Figure 1: Snapshot of Discom’s Financial Performance and Government Financial Restructuring Schemes Provided to Discoms During FY2012/13 – FY2018/19

	Unit	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Discom loss on subsidy received basis	INR Crore	71,621	68,257	56,939	65,718	38,080	15,132	28,036
Subsidy received from state government	INR Crore	36,100	36,758	45,584	55,283	60,341	63,796	63,778
Gap (ACS-ARR) on subsidy received basis	Rs/kWh	0.84	0.78	0.58	0.65	0.42	0.17	0.27
Accumulated losses as per Balance Sheet	INR Crore	2,53,700	3,06,317	3,58,581	4,13,933	na	1,73,000	na
Total outstanding debt	INR Crore	3,04,228	3,65,066	4,03,816	4,21,978	1,90,000	1,85,000	2,28,000
AT&C losses	%	25.48	22.62	25.72	23.98	20.28	18.80	18.19
Discom’s outstanding dues (on last month of FY)	INR Crore	na	na	na	na	31,704	42,063	66,652
Central government support to Financial Restructuring of Discoms scheme	INR Crore	NA	1,500	400	NA	NA	NA	NA
State government support to Financial Restructuring of Discoms scheme	INR Crore	11,134	13,220	13,415	12,050	9,994	NA	NA
Government support through Ujwal Discom Assurance Yojana (UDAY)	INR Crore	NA	NA	NA	92,113	74,228	20,154	10,177

na – not available; NA – not applicable
Source: PFC Report on SEBs; MOP FRP Scheme; UDAY portal; Praapti; LiveMint 2019; Mercom India 2018.

The UDAY scheme was effective in bringing down discom financial losses and improving the national average AT&C losses in both FY2016/17 and FY2017/18. The gap between cost of supply and average revenue realised also dropped materially during this period. However, in FY2018/19, the tariff gap rebounded, and aggregate losses were nearly double that recorded in the previous year on account of increased rural connection under the Saubhagya scheme and state inability to reduce high aggregate technical and commercial (AT&C) losses.

All up, the discom reforms have not gone far enough. Aggregate national discom losses resumed their upward trajectory in 2019.

The state-owned discom's inability to pay creditors in any timely fashion in an increasing number of states has added severe financial pressure to the power generation sector. This in turn has added financial distress to the Indian banking sector, materially undermining new investment intentions at a time when India needs the economic stimulus of rising infrastructure investment.

Despite some progress as a result of the discom reform schemes, there remains a number of issues still to be addressed including timely revenue collection, unreliable power supplies, and growing discom indebtedness.

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Further, the unfunded nature of government provided electricity cross-subsidies from industry to residential and agricultural users is undermining industry competitiveness and eroding the "Make in India" strategy. They work ineffectively by giving discoms a perverse incentive to undermine and restrict power supply (the more they sell, the greater their losses). These unsustainable subsidies, designed to compensate for low tariffs and provide electricity at below cost recovery levels to many consumers, are working against discoms' ability to recover costs or drive much needed energy efficiency programs. The subsidies to discoms for under recovery of costs has an upward trajectory as shown in Figure 1.

Power Generating Producers Affected by Discoms' Financial Ill-Health

The precarious financial health of discoms is also impacting power generating companies.

The total outstanding dues owed by discoms to power producers has been increasing, doubling during the period FY2016/17 to FY2018/19. The overdue outstanding amount has risen further this new financial year to stand at Rs74,900 crore as on December 2019. As on September 2019, Rs9,736 crore payment is owed to renewable energy companies.

To protect power generating companies, the government enforced a payment security mechanism from 1 August 2019, whereby discoms are required to open letters of credit in order to be able to receive power supply.

The GoI is also overtly encouraging generators to use the legal system to enforce discom payment. This appears however to be a costly, slow and unrealistic solution given the power imbalance between generators and the monopoly position of the state government discom.

Further, the government is extending special loans to state power distribution companies to help clear their rising dues to power generators. Under this scheme, government-run lenders Power Finance Corporation (PFC), Rural Electrification Corp. Ltd (REC) and Indian Renewable Energy Development Agency (IREDA) can offer loans at concessional rates to state owned discoms to settle immediate debts to generation companies, with priority given to payments provided to renewable energy generating companies, to prevent any disruption in power supplies.

Such financial support and restructuring programs are useful interim steps, but to-date have had limited success in fixing the root causes of massive discom debt, thus requiring government bailout time and again.

In 2020 another reform scheme, Atal Distribution System Improvement Yojana (ADITYA) is being readied by the GoI aimed at investing funds in network infrastructure like smart meters to reduce discom losses.

While such reforms are advantageous across the power sector, there is a dire need to restore the viability of state owned discoms so that the much needed energy system transformation can be delivered effectively and at least cost to India overall. It is important that power generators do not suffer undue financial distress during this transformation, as this undermines much needed new investment (which IEEFA estimates at upwards of US$500bn by 2030).

Clarifying Reforms Needed in the Distribution Sector

A huge amount of investment and reform has already been undertaken in the generation and transmission business in India. However, unless the distribution sector is also reformed, power generation and transmission are increasingly at financial risk of becoming stranded, while stymieing much needed further investment and technology development.

Some of the issues still crippling the power distribution sector and which must be addressed as a matter of urgency include the 'single–buyer' model, whereby the single buyer, the state discoms in this case, purchase electricity from generators and sell it to consumers. The chain of regional power distribution monopolies, often with a total absence of competition remains seriously problematic, as does the non-separation of the distribution network as a whole from the electricity suppliers, with discoms currently responsible for both network strengthening and supply of reliable power.

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At a state and national level, a flawed regulatory framework, the lack of centre-state coordination and cooperation, the use of discoms as a vehicle for unfunded political subsidies, and a cost plus year-to-year tariff setting process are also all holding back the reform of the sector.

For a successful energy transition to occur, from a developing to a more mature market twice the size of the current energy sector, India needs to implement more reform measures, particularly in the distribution sector as it is the backbone of the electricity industry.

Increasing Competition

To improve the performance of the distribution sector, increased competition through the separation of carriage and content (C&C) could be part of the solution.

Rather than be responsible for both, discoms could be accountable solely for the carriage (the distribution network). Electricity supply companies could then compete for customers on price, service and quality to provide content (electricity) using the discom's distribution network. The separation of C&C would bring in transparency and accountability now sorely missing in the distribution sector.

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Further, the GoI could mandate discoms with high losses to either privatise operations or allow the entry of suitably qualified / capitalised private distribution entities willing to invest in infrastructure upgradation. Increased competition would drive generators, distributors and electricity supply companies to develop technologies to increase efficiency, lower costs and increase the reliability of supply.

Smart Metering

There is a need to progressively replace existing electricity meters with smart meters. This will help discoms manage their load better while also reducing metering and billing losses and theft.

Smart meters allow the introduction of a differentiated time-of-day tariff structure and facilitate the deployment of distributed rooftop solar and behind-the-meter storage systems. Their introduction would give consumers the freedom to choose and change their supplier and rate as per their requirements.

In the recent union budget for FY2020/21, the Finance Minister urged state discoms to replace conventional energy meters with prepaid smart meters during the next three years. IEEFA endorses this principal, but would recommend a single national technical standard be set and a longer contract timeframe be offered to encourage new investment by global leaders in domestic Indian manufacturing capacity, in support of the "Make in India" strategy.

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The heavy infrastructure investment required, and a lack of consumer awareness about the benefits of smart meters, may become a bottleneck. IEEFA notes the GoI needs to make available financial assistance to fund this significant new investment to encourage debt laden discoms to promote smart meter installation, while also investing in consumer awareness and engagement.

Better Targeting of Subsidies

Ultimately, electricity tariffs need to be cost reflective.

IEEFA notes current subsidies for under-pricing of electricity must be restricted to better target certain categories of consumers who are most in need. Improved targeting can free up more resources to promote an uninterrupted quality supply of power by giving discoms an incentive to sell more electricity, profitably, while also accelerating the implementation of energy efficiency measures and other policy goals.

Direct Benefits Transfer (DBT-P), yet to be introduced, aims to transfer subsidies directly to people via their bank accounts rather than through government offices, holds promise. IEEFA notes however the program should be more effectively targeted, to make it a better costed mechanism for subsidy disbursal.

Sustained and effective reform of the electricity sector needs to move it to a commercial and viable basis, and the poor people should be protected through improved social protection systems. Direct Benefits Transfer (DBT-P) for subsidies will be a more effective, better costed and targeted mechanism for subsidy disbursal.

Prior to this occurring however, we also note DBT-P needs to be carefully designed and road-tested in a few cities first to ensure the complexities surrounding the targeting of subsidies are resolved before widespread implementation.

About IEEFA

The Institute for Energy Economics and Financial Analysis conducts research and analyses on financial and economic issues related to energy and the environment. The Institute's mission is to accelerate the transition to a diverse, sustainable and profitable energy economy. www.ieefa.org

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Energy Economist Vibhuti Garg has advised private and public sector clients on commercial and market entry strategies, investment diligence on power projects and the impact of power sector performance on state finances. She also works on international energy governance, energy transition, energy access, reallocation of fossil fuel subsidy expenditure to clean energy, energy pricing and tariff reforms. In addition to India, she has worked in Nepal, Bangladesh, Vietnam and in the Caucasus.