

POWER MARKET CAPSULE-185th Edition

Issue no: 185th –20th November 2021

TPTCL'S E-NEWS LETTER



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Tata Power Trading Company Limited (TPTCL)



Power Market News

Centre asks states to allow automatic pass through of costs to discoms

The Central government has asked states to allow their electricity distribution companies to pass on increase in costs to power tariffs, which can later be vetted by regulatory commissions. Presently, there is no automatic pass through as tariff revisions need approval of the state commissions, which seldom leads to delays.

“It may be changed to provide for automatic pass through in tariff change in costs on account of change-in law or power purchase costs. This will result in less working capital requirements by the discoms, leading to less costs of power for the consumers,” the Union power ministry has written to the states. Power sector has been witnessing issues relating to availability of fuel, mainly coal and gas for the power plants. Recently there was a sudden spike in the price of coal and gas in the international markets, it said. For the lack of robust mechanism of timely automatic pass through of fuel cost and transportation costs the generating companies face constraints in maintaining stock of fuel during such periods. This results in shortage of supply in the grid which may affect the power supply to the consumer, it said.

“Distribution companies face revenue constraints as the corresponding pass through of cost is not done regularly and timely in the retail tariff. Timely collection of revenue from consumer would ensure timely payment by the distribution company to the generating stations and coal companies. This will also help in ensuring availability of supply to meet the expected increase in demand,” he said.

Association of Power Producers director general Ashok Khurana said automatic pass through of fuel and change in law is a great step forward. “This was our long pending request. This would obviate the need to go to Commission which resulted in huge delays and avoidable litigation. This is a consumer centric change and will help to bring about stability of cash flows to generators,” he said.

The power ministry on October 22 notified Electricity (Timely recovery of costs due to change in law) Rules 2021 to sustain economic viability of the sector, ease financial stress by ensuring timely recovery of costs involved in electricity generation. A formula has been provided to calculate adjustment in the monthly tariff due to the impact of change in law.

The ministry said these rules will help in achieving the targets of RE generation also. It said timely recovery of the costs due to change in law is important as the investment in the power sector largely depends upon payments. “At present the pass through under change of law takes time. This impacts the viability of the sector and the developers get financially stressed. The Rules would help in creating investment friendly environment in the country,” the power ministry had said. [Source](#)

Need to cure Discoms' health first

With the threat of climate change looming, nations have to relook and reconfigure their energy sourcing basket to ensure it is 'Clean' and 'Green'. Though not buckling under global pressure as yet to move away from using coal as a fuel for electricity generation, India has been carving out its own strategy to make energy produced from other sources including renewable more accessible. Recently, it has proposed certain Amendments to Energy Conservation Act, 2001, with an objective to enhance demand for renewable energy at the end-use sectors such as industry, buildings, transport etc.



The effort is laudable indeed.

The Power Ministry has proposed amendments that include defining minimum share of renewable energy in the overall consumption by the industrial units or any establishment; also, there will be provision to incentivise efforts on using clean energy sources by means of carbon saving certificate. According to the Power Ministry, the proposed amendments would facilitate development of carbon market in India and prescribe minimum consumption of renewable energy either as direct consumption or indirect use through grid. This will help in reduction of fossil fuel-based energy consumption and carbon emission to the atmosphere.

The weak link

Sounds good! But critics feel that it all will depend on how the distribution utilities (Discoms) — the weakest link in the power space here — will respond to it. The Centre's earlier attempts at strengthening the distribution side has not really succeeded.

While it is evident that with the latest decision, the Centre wants to deregulate the sector fully, but by not involving States and Discoms directly, is it possible to successfully implement the decision upon getting all the relevant nods? Clearly given the political implications of the earlier attempt, the government is slowly moving the market towards making it more consumer centric, but are we prepared for it?

Putting the record straight, Power Secretary, Alok Kumar, said "There is nothing like — not complying with the decision. Energy efficiency is the need of the hour. We do discuss with States and, Yes, States can work out their own systems. But, the central Act will have an overarching effect."

Earlier initiatives

However, not all are convinced. After all Discoms are the key character in this play. It is a fact that the government has tried the bail-out option — UDAY and the recent ₹900 billion injection into the Discoms, which hasn't really made a dent on the dues the Discoms owe to the power generators, said an industry observer.

The government also tried to plug the holes through Direct Benefit Transfer, cost reflecting tariffs, mandatory filling of average cost of supply (ACS)-average revenue realised (ARR) annually, contract enforcement, by proposing them in the draft Electricity Act, which has hit resistance from Discoms.

So, without fixing the health of the Discoms the solar target is tough to reach and process may not be easy. The Power Ministry has time and again stated that the need for energy is inevitable and with the changing business landscape, it is has become even more imperative to address the nation's need to become energy-efficient to prevent putting further pressure on the environment.

With the amendment to Energy Conservation Act, 2001, the focus is to empower institutions to contribute for the country's Paris commitments and fully implement the Nationally Determined Contributions (NDCs) in a timely manner. The proposed changes to Energy Conservation Act will boost the adoption of clean technologies in various sectors of economy, Kumar said adding the provisions would facilitate promotion of green Hydrogen as an alternative to the existing fossil fuels used by industry.

COP26 pledge

At the ongoing CoP26, Prime Minister Narendra Modi announced enhanced targets for India to combat climate change. These were: Increase India's non-fossil fuel energy capacity to 500 gigawatt (GW) by 2030; By 2030, meeting 50 per cent of its energy requirements from renewable sources; reducing its total projected carbon emissions by 1 billion tonne from now till 2030; bring down the carbon intensity of its economy to less than 45 per cent by 2030; and achieving its target of net zero by 2070.

According to the Centre for Science and Environment, the Prime Minister's announcement was bold and ambitious, but immensely challenging as well to achieve. Decoding the target it said, according to the



Central Electricity Authority (CEA), in 2019, India was meeting 9.2 per cent of its electricity generation from renewables. By 2021, with an increase in renewable energy capacity 102 GW, the generation has increased to roughly 12 per cent — it means that India needs to increase this further to meet the 50 per cent electricity generation target by 2030.

CEA has done a projection for the country's energy mix for 2030, which showed that in 2019, India's installed capacity of non-fossil energy (solar, wind, hydel and nuclear) for generating electricity was 134 GW, by 2030 the capacity will reach 522 GW. But, this will require the solar energy installed capacity in the country to go up to 280 GW, and wind energy capacity to rise to 140 GW. The total installed capacity will be 817 GW and power generation will be 2,518 billion units in 2030.

Last mile link

While capacity addition is one aspect, the last mile connect is another. And the challenge lies here. The only other option is to take a route which eliminates the critical involvement of Discoms in the sale of power. The government is leaning towards trading of power (exchange-focused) but needs to keep a keen eye on it turning speculative. It is trying to introduce the market mechanisms to do just that. This is new for the Indian power sector but this is an option that needs to be understood to reach the lofty target by 2030. [Source](#)

Coal import jumps 13% to 107 MT in H1 FY22; high prices keep influx down in Sept

Coal import in September were down 21.97 per cent on-year due to the steady rise in thermal and coking coal prices in the global market India's coal import rose by 12.6 per cent to 107.34 million tonnes in the first six months of 2021-22 even as rise in global prices of the fuel weighed on its influx in September. The country imported 95.30 million tonnes (MT) of the coal in April-September 2020-21, PTI reported quoting provisional data compiled by Mjunction.

Mjunction is a joint venture between Tata Steel and SAIL that acts as a B2B e-commerce company and also publishes research reports on coal and steel verticals. The agency compiled the coal import data based on monitoring of vessels' positions and data received from shipping companies.

Despite a rise in the first half of the fiscal, India saw its coal import drop to 14.85 MT in September, against 19.04 MT in the corresponding month of previous fiscal, it said. "Coal imports in September 2021 were also down by 21.97 per cent over September 2020 when imports stood at 19.04 MT," the agency said in its report. "The substantial drop in import volumes in September as compared to the same month last year was in line with expectation, given the steady rise in thermal and coking coal prices in the global market. This trend is likely to continue till there is a significant correction and stability in seaborne prices," Vinaya Varma, MD and CEO, mjunction said.

Of the total import in September, non-coking coal constituted 9.22 MT, against 11.97 MT imported in year-ago period. Coking coal import was at 4.27 MT, down from 4.58 MT imported in September 2020. "India's coal and coke imports during September 2021 through the major and non-major ports are estimated to have dropped by 2.4 percent over August 2021," the report said. [Source](#)

Indian energy firm Secure Meters acquires Swiss smart grid solutions company

Udaipur-based Secure Meters a solutions provider for revenue management, power quality and energy efficiency has acquired 100 per cent stake in Adaptricity AG, a Switzerland-based premium provider of smart grid solutions, both the companies. Adaptricity, a unit of €4-billion German multinational Leoni AG,



manufactures wires and wire systems and the German firm has decided to divest its holding to focus on its core businesses.

Secure Meters' products and services include meter, monitor, manage and reduce the use of energy from generation to consumption and their solutions include grid metering, consumer gas and electricity smart metering systems, pump and blower efficiency services, consumer products and services for electric and gas consumption. Leoni AG was advised by Proventis Partners, a member firm of Mergers Alliance, wherein Singhi Advisors is the exclusive Indian member and a strategic stakeholder.

Adaptricity AG's modular and cloud-based solution platform represents for Secure Meters Limited an ideal strategic addition to its own product portfolio for distribution network operators. Secure Meters plans to invest in the further expansion of the technology and to integrate Adaptricity AG's products into its international sales activities, the statement said. Adaptricity AG will operate as a 100% subsidiary of the Secure Meters Group. [Source](#)

R K Singh asks officials to focus on storage of surplus energy

Power Minister R K Singh asked senior government officials to focus on the storage of surplus energy in the country. "R K Singh, Union Minister of Power and New & Renewable Energy, chaired a virtual meeting with senior officials from central government, central PSUs, renewable energy developers, PSP developers and battery manufacturers for discussion on the 'Report on comprehensive Policy Framework for promotion of Energy Storage in the Power Sector'," the power ministry said in a statement. The minister emphasised that the objective should be to ensure that no energy is lost. "For that, we need to be in a position to store all the energy, which is going to be surplus at any point of time."

Singh stated that some storage needs to be added with the generation to ensure round-the-clock renewable energy. He further directed to prepare separate guidelines on the treatment of energy storage and resource adequacy. To meet the target of 500 gigawatt (GW) renewable energy by 2030, the minister directed to work out the requirement of storage capacity year-wise in keeping with the upcoming addition of solar and wind projects.

Regarding ancillary services, Singh emphasised on the need to have adequate energy reserves, which can be utilised at a moment's notice to support the power system and grid operations. The minister directed all hydro CPSUs and private industries to survey and identify pump hydro sites in the vicinity of existing hydroelectric projects (HEPs). The meeting was also attended by Minister of State for Power Krishan Pal Gurjar. Power secretary, MNRE secretary, and additional secretary (hydro), among others, were also present. [Source](#)

Andhra Pradesh: First waste-to-energy plant ready for operations

GUNTUR: The first waste-to-energy plant in the state is ready for commercial operations. The plant, located on the outskirts of Guntur city, will generate 15MW power with garbage collected from Guntur and Vijayawada cities and eight other municipalities in Guntur district.

The Jindal group-owned JITF Urban Infrastructure Limited signed an MoU with the state government five years ago. Although the plant construction was to have been completed within 28 months from signing the MoU, the developer took nearly five years due to change of government in the state and technical issues. Work picked up pace after special chief secretary (municipal administration) Y Srilakshmi inspected the plant two months ago and expressed her displeasure at the slow pace of progress.

The government had agreed to supply nearly 1,200 metric tonnes of garbage from two major cities—Vijayawada and Guntur—and eight municipal towns in Guntur district. However, the civic bodies could not ready themselves to transport the garbage required for generation of power. After struggling to coordinate with different agencies, the Jindal group has finally completed the project. The firm has also prepared the civic bodies to shift the garbage to the plant. Garbage from Mangalagiri, Tadepalle, Sattenapalle, Ponnur, Chilakaluripet and Narasaraopet municipalities will be transported to the Jindal plant.

The firm has also completed the trial run in the last fortnight and filed an application with the Central Power Distribution Company Limited (CPDCL) for synchronisation of power supply. "We are waiting for green signal from energy department for launching commercial operations," said a senior official of Jindal group. A 33kv supply line was also laid to connect the plant with the grid. The Jindal group has signed a Power Purchase Agreement (PPA) with CPDCL to sell power at Rs 6.16 per unit. The project developer has built the plant in such a way that it could be expanded to generate 20MW in future. The Jindal group is now readying to set up another major waste to energy plant in Visakhapatnam. [Source](#)

Tata Power offers energy audit service to commercial & industrial consumers in Mumbai

Tata Power said it is offering energy audit service to its commercial and industrial (C&I) customers in Mumbai. The company has conducted more than 150 energy audits, enabling them to achieve high level of energy efficiency.

This initiative is in line with the company's commitment towards conservation and efficient use of energy by its consumers, it said in a statement. These audits have benefitted Tata Power's C&I customers such as hospitals, malls, hotels, commercial complexes and factories by providing them an opportunity to save up to 10-15 per cent on energy bill as well as given them actionable recommendation to save up to 45 MUs (million units).

The energy audit is provided to both large, small & medium C&I customers. For large customers, investment grade audits are carried out, whereas for small & medium customers, a brief walkthrough audit of their premises is being offered. For customers with large loads, specific thermal scanning and checks are carried out to identify hotspots and reduce probable faults whereas for customers who have load which can distort wave forms, such as data centres, power quality audits are carried out, it stated. This distinction is done because each facility is unique in nature and has a different load profile. The appliances, usage pattern and challenges faced by each facility is different and hence a thorough diagnostic of the energy consumption is necessary which is customised according to the needs. Sanjay Banga, President T&D, Tata Power said, "Through our energy audit service, we plan to help our commercial and industrial customers manage their energy consumption better."

Energy audits are aimed at increasing energy efficiency at the facility while also helping consumers cut down on energy costs. These audits also give businesses an opportunity to improve carbon emissions and explore more sustainable options, he added. "We feel this will add value in helping companies go green and make their businesses more sustainable," Banga said. Tata Power energy audit service has played an important role in contributing towards meeting Mumbai's ever-growing need for reliable power supply. Over the years, it has initiated various value-added services to increase awareness about reliability, safety and energy saving that would result in benefitting the consumers, the utility and the society, in general, the company said. Besides this, Tata Power has various other services including Home Automation, EV Charging, ESCO etc. which help consumers go beyond standard saving options.

[Source](#)

How much thermal capacity must we add by 2030?

Consider the data available. India's energy-demand is expected to grow 35 -50% by 2030. We have 388 GW of installed capacity, of which 100 GW is renewable energy (and 50 GW is large hydro, not considered "green"). By 2030, we want to increase non-fossil-fuel generation capacity to 500 GW, and the share of non-fossil-fuel sources in generation to 50%. How much thermal capacity does India need to add/phase out? Articulated thus, it sounds like a simple weighted-average problem. It is not. For one, the difference between capacity (or power) and generation (or energy) would not be obvious instantly. A power plant with a capacity of 100 MW can generate 100 MW of power at any instant. When it does so for an hour, it generates 100 MW-hour of energy. It can do this 90% of the time in a year, requiring the remaining time for maintenance.

A solar power plant is able to do this for 20% of a year, considering night time and cloudy or foggy conditions. To generate the same amount of energy in a year, solar capacity five times that of thermal capacity is needed. Similarly, for wind, it depends on periods and intensity of wind speeds at different locations, and on availability of water for hydel. So, the increase in generation needed can be met by different combinations of capacities of different types of power.

Capacity planning is done to meet peak demand. Let us consider a peak demand of 2,200 MW, and power plants of 220 MW each. The capacity planner would have planned for 11 such power plants, instead of 10; even if one plant went offline unexpectedly, the grid would still be able to meet the peak demand. This is a rough approximation of the way in which power system experts (Central Electricity Authority, for instance) planned capacity addition.

Their aim was to minimise loss of load probability (LOLP). Of course, all generating units were not of the same size. They identified the largest unit connected to the grid, and planned for another similar sized unit to be on standby. It still did not reduce LOLP to zero, since more than one unit could get impacted, which would require shedding load. Such calculation was done for the expected peak demand.

In India, all of this was theoretical when we did not have sufficient capacity to meet peak demand; and load-shedding kept the grid balanced. In the last decade, India has added sufficient capacity to maintain "spinning reserves", which can come online if a generating unit fails. Capacity planning has now become more complex. Since power is a concurrent subject, capacity addition (and management) is done by both central and state entities. Power generation has been delicensed.

Balancing the grid on an hour-to-hour basis is done through a detailed set of technical and commercial rules. Capacity addition requirement is calculated by the CEA, considering all of the above. Now consider additional uncertainties. The time in which solar and wind power can be generated is uncertain, though significant effort is being made to improve day-ahead and week-ahead predictability. But, years-ahead is difficult, more so with increased climate uncertainties. Rate of increase in rooftop solar panels is another uncertainty for the planners.

Storage for upto four hours can address some weather variations, but not for prolonged no-sun/low-wind periods. Several states are separating power lines serving farms from those serving other users so that they can use agricultural load as a tool to match demand with availability of power. But, how soon this can happen, implementation of 'time-of-day', and operationalisation of smart-grids are big uncertainties. Thermal capacity requirement for 2030 needs to be decided in the next 2-3 years. The private sector will find it very difficult to finance thermal power projects; even approvals to final construction, a factor of government efficiency, could take 5-8 years. So, the question needs to be answered without knowing



whether we will actually ramp up to add 40-50GW of renewable energy capacity every year, whether storage and hydrogen will become affordable by then, and to what extent transnational grids would have been made functional.

How do you determine LoLP with these uncertainties? Planners can envision various scenarios of the future, and estimate LoLP for each scenario. They can also determine the amount of thermal capacity required to reduce LoLP to a target level, and the associated costs. But who will pick the scenario to bet on? Going wrong in one direction would mean power outages and sharp increases in power prices. Going wrong in the other could mean investment in thermal capacity that is under-utilised, whose cost will need to be borne either by consumers or by tax payers. Neither of these outcomes makes for good politics. The answer will need to be decided at the political level; the power system managers, weather forecasters, statisticians and sociologists can only give them the what-if scenarios. [Source](#)

New Discom audit norms will curb T&D loss

You cannot manage what you cannot measure, goes a clichéd but wise business adage. The Bureau of Energy Efficiency's (BEE's) latest regulations have the potential to ensure a better measurement and tracking of the transmission and distribution (T&D) losses of the electricity distribution companies (Discoms). A number of recent policies and schemes have focussed on reducing Discoms' aggregate technical and commercial (AT&C) losses, of which T&D losses form a major part. However, despite the guidelines by the Central Electricity Authority, different Discoms use different methods to calculate AT&C losses without necessarily stating the underlying assumptions and data.

This difference can be as high as four percentage points (the average reported AT&C losses are about 22-25 per cent) making measurement and tracking of AT&C losses difficult. BEE's new energy audit regulations can change this situation. Last year, BEE had notified all the Discoms as 'Designated Consumers' under the Energy Conservation Act, 2001 requiring them to conduct periodic energy audits and undertake energy conservation measures.

Recently, BEE notified regulations that prescribe the manner in which Discoms should conduct the audits and provide the relevant data.

First, Discoms are required to submit energy accounting reports every quarter and an audited energy report every year to the BEE in prescribed formats. This includes data on energy input and consumption at each voltage level by all users including Discom consumers, open access and captive users, as well as distribution franchises. This enables a better estimation of T&D losses based on the actual energy handled by the system. Disaggregated energy data at feeder and distribution transformer (DT) level is also required to be submitted. Such data can be useful in identifying areas of significant losses. It can also help reveal any Discom malpractices of fudging T&D losses by mis-reporting unmetered consumption.

Second, the regulations stipulate clear timelines for the Discoms to upgrade their metering infrastructure at the feeder, DT, and consumer levels. For instance, all the feeders are required to have functional communicable meters by December 2022 whereas all the DTs should be metered by December 2025. Discoms are required to provide status of the metering infrastructure in the annual energy audit reports. Further, Discoms are also required to submit the share of the reported energy data which has been manually recorded. This can keep track of the installed but non-functional communicable metering infrastructure. This is particularly important since the status of metering for consumers and the distribution infrastructure is still not reported in a systematic manner anywhere. This mandate for regular reporting



can put pressure on Discoms to ensure complete metering and also provides necessary inputs regarding accuracy of audit reports.

Third, the regulations also prescribe certain processes to ensure compliance. It requires Discoms to create a centralised energy accounting and audit cell with adequately qualified personnel. They are also required to submit the audited annual report to the BEE and the state designated agency and publish it on their website within four months. These regulations do tick all the right boxes to ensure detailed and accurate energy auditing by the Discoms. However, having good regulations in place is only half the job done. They need to be implemented effectively.

Effective implementation

The first key requirement for effective implementation is ensuring upgradation and regular maintenance of metering systems through appropriate investments. For this, the Discoms can avail themselves of funds under the recently launched revamped distribution reform scheme. Reporting of the status under these regulations is vital in holding the Discoms accountable on progress.

Second, non-compliance with the provision under these regulations can attract a penalty of ₹10 lakh with ₹10,000 per additional day of non-compliance as per the Energy Conservation Act. This is loose change for the Discoms whose annual revenues are in thousands of crores. This penalty should be revised to act as a serious deterrent.

Further, BEE has traditionally been an organisation with limited resources and heft and hence, limited ability to track and deter non-compliance. The Ministry of Power (BEE's parent ministry) needs to strengthen BEE with higher allocation of resources. BEE needs to have regional offices and more staff to coordinate with state-designated agencies to monitor compliance with its regulations.

Finally, the State Electricity Regulatory Commissions (SERCs) can play a key role in the effective implementation of the regulations. Many SERCs already require Discoms to submit data on energy accounting in their tariff petitions. They can mandate the Discoms to submit the data in the formats required by BEE's regulations and monitor compliance. These regulations have the potential to make headway in dealing with the power sector's long-standing problem of high T&D losses. But to make it a success, concerted efforts from all the actors are required. Otherwise, it will be a wasted opportunity.

[Source](#)

Peak power demand deficit almost wiped out, in 2020-21, says Union power ministry

The Union power ministry said that peak power demand deficit in the country was almost wiped out in 2020-21 period. Providing statistics, the ministry said the deficit stood at 0.4 per cent in 2020-21 compared to 16.6 per cent in 2007-08 and 10.6 per cent in 2011-12.

In the current year (2021-22) till October, the peak power demand has been (-)1.2 per cent and the marginal spike was attributable to the annual post monsoon pressure on power output. This is also likely to normalise by the end of the year, the ministry said in a statement.

According to the statement, India had a massive power deficit of 16.6 per cent in 2007-08 and in 2011-12, it was 10.6 per cent.

Through the multi-pronged, comprehensive and aggressive interventions of the government, this deficit is near about wiped out, consistently over the last three years — 0.4 per cent in 2020-21, 0.7 per cent in 2019-20 and 0.8 per cent in 2018-19, the statement said.



This transformation from an acutely power deficit country to a situation of demand being met, except for an extremely marginal shortfall of less than 1 per cent, has been made possible by the schemes brought in by the current government to address the unhappy situation, it noted.

The schemes include Deen Dayal Upadhyaya Gram Jyoti Yojana (DDUGJY), which was brought in July, 2015 for infrastructure push in the rural sector and the Integrated Power Development Scheme (IPDS), which was introduced in November 2014, to address power infrastructure gaps in urban areas. The statement said the Pradhan Mantri Sahaj Bijli Har Ghar Yojana (Saubhagya) scheme launched in September, 2017 had the vision to take electricity to every household (willing). It has been able to supply electricity connections to 2.8 to crore households which were hither to in darkness, it added. In the last nearly seven years, the augmentation of the installed power capacity in the country has been 1,55,377 MW. [Source](#)

OPINION: Why the implementation of Electricity Act amendments is urgent

The Indian government has announced extremely progressive and timely proposals over the last two years to reform the power sector. These innovative path-breaking proposals can be the panacea to all that ails the distribution and renewable energy sector. The Draft Electricity Amendment Bill 2020 focusses on improving financial and operational performance of discoms while ensuring continued offtake of renewable power. It proposes a direct benefit transfer mechanism (DBT) in which subsidy in the form of cash transfers would be given directly by the government to the intended consumers. Other key changes proposed are initiating privatization by allowing discoms to engage with franchises to distribute electricity, setting up of electricity contract enforcement authority, facilitating cross border trade in electricity.

All this trailblazing does not end here. Amendments to National Tariff Policy seek to enforce cost reflective tariffs, reduce cross subsidies, and impose penalties for load shedding. To remove any doubts on government's commitment to power sector reforms, The National Electricity Plan prioritizes 24X7 access to quality and reliable power, tariff setting to cover the cost of supply, delicensing/privatization of distribution, smart prepaid metering to improve collections, subsidy payment through direct benefit transfer and reducing the practice of subsidizing agriculture by levying cross-subsidy charges on industry. The proposals are going through due process before being put up for legislation. Along the way there is of course the expected opposition and protests which are bound to happen whenever there is a break from status quo. It must be emphasized that the above acts and policies must be implemented as soon as possible since the time is running out.

This decade has been heralded as the decade of transition to renewable energy for India. At Glasgow COP26, India has announced its target of 500 GW of renewable energy by 2030, from 100 GW currently, and achieve 45% reduction in carbon intensity over 2005 levels. This requires USD 50-60 bn in annual investment in fresh renewable energy capacity till 2030.

The distribution sector must stand on its feet and support renewables for India to meet its clean electricity targets. However, discom arrears to gencos have grown 3x times to \$15 bn from 2017 to 2021. The average AT&C losses are at 21.7%, there is a gap of Rs 0.5/kwh between generation and cost of supply. The trend is marginally declining y-o-y thanks to consistent support by the government in the form of performance linked recapitalization packages such as Uday 2015 and 2020 special liquidity packages. The government again approved in FY22 budget a Rs 3 trillion operational performance linked stimulus to discoms. The disbursements will be linked to financial and operational improvements with the target of reducing AT&C losses by half and cost and revenue gap to zero by 2025. However, I am glad that the government is realizing that its best to move towards structural reforms rather than temporary fixes in the

form of bail outs. The union government has also kick started the privatization process for discoms in union territories of Chandigarh, Daman and Diu and Dadra Nagar Haveli to which High Court had a put a stay in response to PILs. But the Supreme Court lifted the stay citing that discom privatization is in public interest.

The government has been extremely receptive to renewable energy sector's concerns on power offtake by discoms. Discoms must buy at least 21.2% from green sources and the amendment to Electricity Act 2020 proposes stringent penalties for non-compliance. The amendments also seek to curb, through Contract Enforcement Authority, growing incidents of termination or re-negotiation of PPAs. Discoms resist rooftop solar or open access for C&I customers, because C&I customers subsidize agricultural and residential customers through cross subsidy charges. Tariff rationalization and limiting of cross subsidy charges, proposed in the amendments, will give a huge boost to renewables in C&I.

The government has demonstrated keen foresight and reform intent through these draft proposals. It must now implement them expeditiously to ensure India meets its climate commitments and its economic development goals. I am optimistic that the government's determination and resolve will ensure that the Draft Electricity Amendment bill and National Tariff Policy sees the light of the day in the next couple of months. [Source](#)

Is the power sector in India ready for derivatives?

The Supreme Court in October finally permitted power exchanges regulated by the Central Electricity Regulatory Commission (CERC) to offer monthly, seasonal or even annual contracts. As per the press release on the judgment, the apex court resolved a decade-long jurisdictional battle between the CERC and the Securities and Exchange Board of India (Sebi) on regulating forward contracts in power exchanges.

Forward contracts are those where delivery is made after 11 days. Currently, exchanges only offer contracts that are settled within 11 days. With the judgment, the CERC will have exclusive jurisdiction to regulate all physical delivery contracts. However, financial derivatives, yet to be introduced in the power sector, will be regulated by Sebi. For power distribution companies (discoms), flexibility and choice are crucial, given the growing demand uncertainty driven by the rising share of variable renewable energy. The uncertainty is amplified with industrial consumers investing in electricity supply from sources other than the discom.

Thus, seasonal surpluses, and shortages are becoming a challenge. To reduce costs, and increase operational efficiency, long-term supply arrangements need to be complemented with other contracts. Monthly and seasonal contracts would help address this challenge, and aid planning for eventualities such as the recurring crises due to dwindling coal supply.

Discoms, and industrial consumers rely on traders, and bilateral contracts to meet their seasonal power requirements. With forwards, industrial consumers will have more choice. Currently, seasonal procurement is through non-transparent, fragmented processes. Discoms will benefit, too, as most short-term contracts take place through the government-administered DEEP portal with limited participation, and options.

Power is unscheduled mostly due to low demand, and discom consent for sale, though required, is seldom provided. Recently, the ministry of power issued guidelines allowing the sale of unscheduled power on the exchanges without additional permission from contracting discoms. With these guidelines,



the use of multiple exchange contracts will reduce idle capacity, improve price discovery, and reduce costs.

Forwards provide a new avenue for competition among the three power exchanges, presently facing low liquidity in the term-ahead segment, limited to less than 1 percent of the electricity supplied in India.

Price Signals

The exchanges account for 4-5 percent of the country's electricity supply but are witnessing high volume growth, and addition of new contracts. With these changes, the introduction of financial derivatives, which are transferable contracts that do not translate to physical power delivery, must be approached with caution.

The power ministry, the finance ministry CERC, Sebi, the Central Electricity Authority, the Power System Operation Corporation Ltd, and the exchanges have deliberated on the launch of financial derivatives since 2018. However, many aspects are yet unclear. With separate regulators for forwards and futures, the need for concurrent, connected market monitoring, though paramount, has not yet been detailed. Further, it is unclear if Sebi's jurisdiction will extend to non-power exchange contracts. Would Sebi regulate derivatives such as contracts for differences to operationalise virtual power plant arrangements? If so, state electricity regulators would also be involved, adding another layer of jurisdictional complexity. When seen with other considerations, financial derivatives in the power sector can provide helpful signals to investors. However, given their speculative nature, these prices make poor benchmarks in decision-making processes. The outcomes in the derivatives market should not be used to set ceiling tariffs for competitive bidding or to determine limits for short-term power. It would be tragic if high prices in this speculative market are used as a signal to justify increased investments in capacity addition by bankers, developers or regulators.

Discoms are regulated utilities whose costs, if deemed prudent, are allowed for recovery through consumer tariffs. If discoms or the generators they have contracts with, participate in the financial derivatives market, the cost impact and risks should be not passed on to tariff-paying consumers. Strong co-operation and information-sharing between the financial and electricity regulators as well as public availability of critical data would be imperative to protect the interests of buyers, sellers, and final consumers. While we usher in a new era of competitive choice, and transparent trading, it is hoped that keeping sector sustainability, and consumer interests in mind, financial derivatives are not introduced hastily. [Source](#)

Nepal to sell surplus electricity in India's energy exchange market

Nepal will sell its surplus electricity to India at a competitive rate after New Delhi allowed the neighbouring country to trade its power in the Indian power exchange market, according to media reports. The Energy Exchange under India's Power Ministry granted permission to Nepal after persistent lobbying from Kathmandu, as Nepal Electricity Authority (NEA) is now in a position to sell its surplus energy, according to a report in The Kathmandu Post.

In the first phase, 39MW power, including 24MW produced by NEA-owned Trishuli hydropower and 15MW Devighat power house, has been permitted for trading in Indian Energy Exchange. Both projects were developed with India's assistance. Following the Indian approval for Nepal to export its electricity, power trade between the two countries has entered a new phase, the report cited Nepal's ministry of Energy, Water Resources and Irrigation as saying.

Gokarna Raj Pantha, joint spokesperson for the ministry, told the Post that the Nepal Electricity Authority would now be able to participate in an auction in the Indian Energy Exchange every day to sell power. The NEA will start exporting the power through 400- kV Dhalkebar-Muzaffarpur inter-country transmission line from midnight, The Himalayan Times reported.

This transmission has until now been used just to import power as Nepal had already received permission for purchasing and importing power in the Indian Energy Exchange. The NEA has been importing power through Indian Energy Exchange at competitive rate since last April 30 as per need. After obtaining the approval, the power trade between Nepal and India has entered a new phase, the report said. After obtaining the approval, the power trade between Nepal and India has entered a new phase, the report said.

According to Madhu Bhetuwal, spokesperson for the Energy Ministry, the Indian authority has also been studying Nepal's proposal to sell the electricity generated by two other power projects, including the 456MW Upper Tamakoshi Hydropower Project, The Kathmandu Post reported.

Nepal became an energy surplus country ever since the 456MW Upper Tamakoshi Hydropower Project came into full operation in August, the report said. According to the NEA, Nepal now has surplus power even during peak hours, usually between 7 and 8 pm. The peak hour demand stands at 1,500MW. The country is currently producing 2,000MW of electricity, of which 1,900MW is generated from hydropower projects, it said. [Source](#)

Coal will continue to feed growing energy need of India for next five decades: Experts

Given India's dependence on coal for 70% of the power sector's need, the 50% non-fossil fuel sourcing by 2030 itself will be quite challenging and coal will continue to feed the growing energy need of India for the next five decades, according to industry experts. The comments come a day after Prime Minister Narendra Modi surprised delegates at the COP26 climate summit with a bold pledge to cutting emissions at the world's third-biggest emitter to net-zero by 2070.

"Coal will continue to feed the growing energy need of India in next five decades and only going to peak in the 2040s- hence we need to continue investment in coal mines and infrastructure going forward, else we will face fuel side challenges like in October," Debasis Mishra, partner at Deloitte Touche Tohmatsu in India told PTI.

As such India's thermal coal capacities are increasing from current 210 GW to 267 GW projected by CEA by 2030. Also there will be retirement of old capacities. Hence in no situation thermal coal capacities will get stranded because of this COP26 commitment, he added. According to former Coal India chairman Partha Sarathi Bhattacharyya, coal will have to stay and initially will have to actually increase in quantity and not in share.

"Share will go down but it terms of quantity and in terms of capacity it will perhaps go up from the current levels," he explained. Niladri Bhattacharjee, Partner, Metals & Mining, KPMG in India said primafacie, the 2070 commitment for net-zero seems quite doable. However, the generation that will be responsible for this is not yet born or are very young.

"Coal's demise is not a foregone conclusion, especially in the power sector. What happens to coal will be a function of India's growth, overall energy demand in India and price of different forms of energy as we go through the transition," he said. Imported energy may be the first casualty compared to domestic coal. "However, the fourth commitment related to reducing energy intensity of the economy so sharply, will



pose a challenge for steel, aluminium and cement sectors. Somehow, I feel we need to wait and see how the separate commitments impact each other and whether one can be easier to pull off independent of the other," he added.

Target for renewable energy capacity raised to 500 GW from 450 GW the 2030 target for and pledged to produce half the country's electricity using renewable energy. India will also cut carbon-dioxide emissions by 1 billion tonne from business as usual by the end of the decade.

To deliver on the 2070 goal, the country still has to lay out a detailed plan for the 40 years in between. Modi, in his address at the ongoing COP 26 announced a bold pledge that India will achieve net zero carbon emissions by 2070 and asserted that it is the only country that is delivering in "letter and spirit" the commitments on tackling climate change under the Paris Agreement. He also raised the Nationally Determined Contribution (NDC) of achieving 450 giga watt non-fossil energy capacity to 500 giga watt, among other commitments including reducing carbon emissions. [Source](#)

Transmission charges payable by DICs for the billing month of Nov'21

The Central Electricity Regulatory Commission (Sharing of Inter-State Transmission Charges and Losses), Regulations 2020 came into force with effect from 1.11.2020. In these New Regulations, STOA charges will be determined based on monthly state transmission charges and there shall not be any separate injection and drawl PoC charges, for STOA. Further, DISCOMs having long term Access are not required to make any payment against POC charges for STOA transaction.

| Transmission Charges for Short Term Open Access (STOA) | | | |
|--|--------------------|--------|-----------------------|
| Sl. No. | State | Region | STOA rate (paise/kWh) |
| 1 | Delhi | NR | 45.04 |
| 2 | UP | NR | 47.42 |
| 3 | Punjab | NR | 48.47 |
| 4 | Haryana | NR | 66.40 |
| 5 | Chandigarh | NR | 38.29 |
| 6 | Rajasthan | NR | 58.66 |
| 7 | HP | NR | 37.34 |
| 8 | J&K | NR | 39.80 |
| 9 | Uttarakhand | NR | 47.15 |
| 10 | Gujarat | WR | 46.84 |
| 11 | Madhya Pradesh | WR | 43.34 |
| 12 | Maharashtra | WR | 45.27 |
| 13 | Chhattisgarh | WR | 34.96 |
| 14 | Goa | WR | 44.23 |
| 15 | Daman Diu | WR | 42.35 |
| 16 | Dadra Nagar Haveli | WR | 45.08 |
| 17 | Andhra Pradesh | SR | 47.57 |
| 18 | Telangana | SR | 33.07 |
| 19 | Tamil Nadu | SR | 38.29 |
| 20 | Kerala | SR | 38.61 |
| 21 | Karnataka | SR | 40.13 |
| 22 | Pondicherry | SR | 36.53 |
| 23 | Goa-SR | SR | 32.64 |

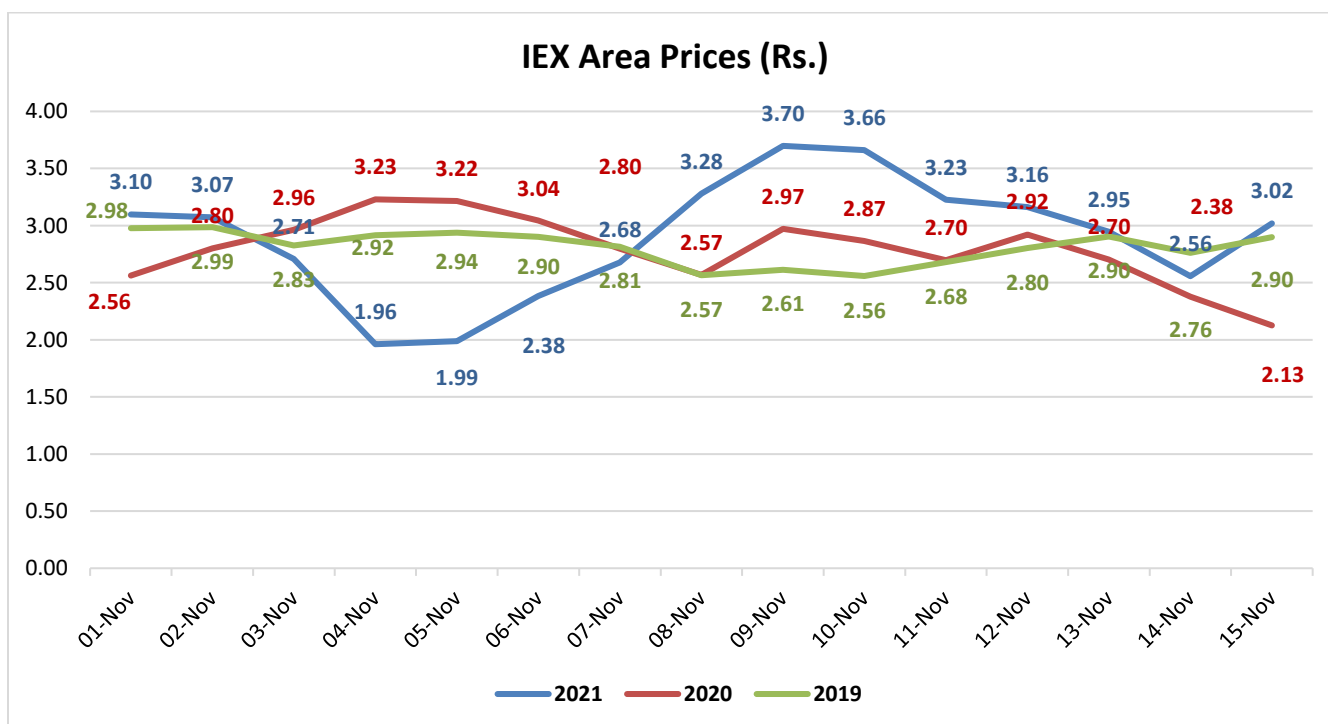
| | | | |
|----|-------------------|-----|-------|
| 24 | West Bengal | ER | 43.05 |
| 25 | Odisha | ER | 42.54 |
| 26 | Bihar | ER | 43.15 |
| 27 | Jharkhand | ER | 43.56 |
| 28 | Sikkim | ER | 35.53 |
| 29 | DVC | ER | 39.85 |
| 30 | Bangladesh | ER | 33.37 |
| 31 | Arunachal Pradesh | NER | 38.84 |
| 32 | Assam | NER | 40.70 |
| 33 | Manipur | NER | 38.13 |
| 34 | Meghalaya | NER | 35.15 |
| 35 | Mizoram | NER | 38.61 |
| 36 | Nagaland | NER | 54.71 |
| 37 | Tripura | NER | 42.74 |

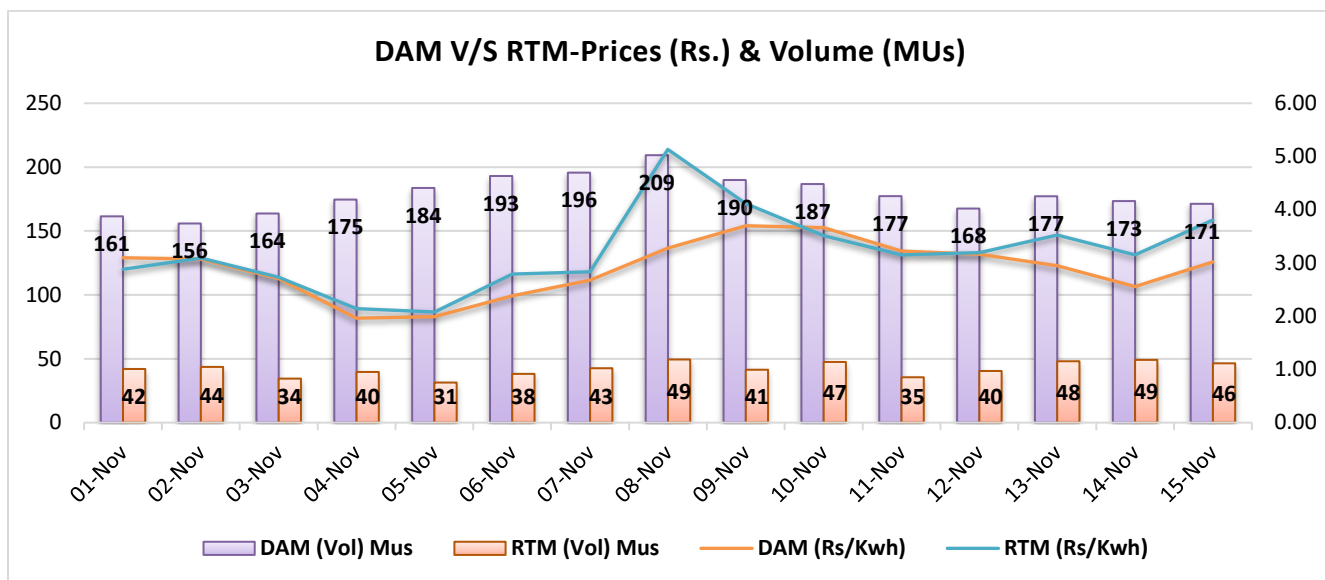
Bilateral Tender Results: -

| AEML/Short/21-22/RA/58 | | | | |
|--|---------------|--------------------------|-------------------|-----------------|
| Sl. No. | Quantity (MW) | Period | Time Block (Hrs.) | Price (Rs./KWh) |
| 1 | 250 | 04.11.2021 to 30.11.2021 | 00:00 to 24:00 | 4.5 |
| 2 | 100 | 04.11.2021 to 30.11.2021 | 10:00 to 24:00 | 5.99 |
| 3 | 150 | 04.11.2021 to 30.11.2021 | 08:00 to 24:00 | - |
| 4 | 150 | 01.12.2021 to 30.11.2021 | 07:00 to 22:00 | 6.38 |
| 5 | 150 | 01.12.2021 to 30.11.2021 | 17:00 to 24:00 | 8.68 |
| 6 | 150 | 01.01.2022 to 31.01.2022 | 07:00 to 22:00 | 5-6.38 |
| 7 | 150 | 01.01.2022 to 31.01.2022 | 17:00 to 24:00 | 8.68 |
| 8 | 150 | 01.02.2022 to 28.02.2022 | 07:00 to 22:00 | 5-6.38 |
| 9 | 150 | 01.02.2022 to 28.02.2022 | 17:00 to 24:00 | 8.68 |
| 10 | 250 | 01.03.2022 to 31.03.2022 | 18:00 to 24:00 | 8.68 |
| 11 | 100 | 01.03.2022 to 31.03.2022 | 07:00 to 24:00 | 5 |
| 12 | 100 | 01.03.2022 to 31.03.2022 | 15:00 to 23:00 | - |
| Andhra Pradesh Power Co-Ordination Committee (APPCC)/Short/21-22/RA/53 | | | | |
| 1 | 300 | 01.11.2021 to 30.11.2021 | 00:00 to 24:00 | 6.99-9.25 |
| 2 | 300 | 01.12.2021 to 31.12.2021 | 00:00 to 24:00 | 6.99-9.25 |
| 3 | 300 | 01.01.2022 to 31.01.2022 | 00:00 to 24:00 | 6.99-9.25 |
| 4 | 300 | 01.02.2022 to 28.02.2022 | 00:00 to 24:00 | 6.99-9.25 |
| 5 | 300 | 01.03.2022 to 31.03.2022 | 00:00 to 24:00 | 6.99-9.25 |
| 6 | 600 | 01.11.2021 to 30.11.2021 | 17:00 to 24:00 | 11.2-11.21 |
| 7 | 600 | 01.12.2021 to 31.12.2021 | 17:00 to 24:00 | 11.2-12.5 |
| 8 | 600 | 01.01.2022 to 31.01.2022 | 17:00 to 24:00 | 10.2-12.5 |

| | | | | |
|--|-----|--------------------------|----------------|-----------|
| 9 | 600 | 01.02.2022 to 28.02.2022 | 17:00 to 24:00 | 10.2-12.5 |
| 10 | 600 | 01.03.2022 to 31.03.2022 | 17:00 to 24:00 | 10.2-12.5 |
| Torrent Power Limited/Short/21-22/RA/57 | | | | |
| 1 | 50 | 01.12.2021 to 31.12.2021 | 00:00 to 24:00 | 4.48 |
| 2 | 200 | 01.12.2021 to 31.12.2021 | 07:00 to 21:00 | 5.95-7.12 |
| 3 | 50 | 01.01.2022 to 31.01.2022 | 00:00 to 24:00 | 4.98 |
| 4 | 200 | 01.01.2022 to 31.01.2022 | 07:00 to 21:00 | 5.96-6.97 |
| 5 | 50 | 01.02.2022 to 28.02.2022 | 00:00 to 24:00 | 5.42 |
| 6 | 200 | 01.02.2022 to 28.02.2022 | 07:00 to 21:00 | 5.96-6.35 |
| 7 | 125 | 01.03.2022 to 31.03.2022 | 00:00 to 24:00 | 5.4 |
| 8 | 200 | 01.03.2022 to 31.03.2022 | 07:00 to 23:00 | 5.96-6.35 |

IEX Price Trends





Weather (Estimated for next fortnight)

| City | Max Temp | Min Temp | Precipitation (Probability) |
|---------|----------|----------|-----------------------------|
| DELHI | 20 | 8 | 29% |
| MUMBAI | 28 | 21 | 20% |
| KOLKATA | 25 | 16 | 12% |
| CHENNAI | 30 | 23 | 19% |

[\(Source - Accuweather\)](#)

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