TATA POWER

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TPTCL'S E-NEWS LETTER

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Tata Power Trading Company Limited (TPTCL)

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Power Market News

India's energy consumption grows 10.4% so far in FY23

NEW DELHI: Energy consumption in India rose 10.4% during the April-February period in the current financial year (FY23), said union minister for power, R.K. Singh on Thursday. In a written reply to a question in Lok Sabha, the minister said that the growth in energy supplied or consumed in February, 2023 is 8% as compared to February, 2022. The peak demand in the month of March, 2023 has been projected as 212 GW whereas only 209 GW has been reported till date in the month of March, 2023, he said, adding that the month of April and May have been projected as high demand period.

During the current year 2023-24, the peak demand is expected to be around 229 GW during the summer period. Outlining the steps have been taken for meeting the increased demand for power, the minister said the generators have been directed to complete the maintenance work of their plants well before the period of high demand and no planned maintenance will be taken during the high demand period.

Monitoring and coordination with ministries of coal and railways, on a regular basis, for increase in the production and dispatch of coal as much as possible. Further, all generators have been asked for timely import of required coal for blending purposes so that adequate coal stock is maintained in the plant, Singh said. All captive coal blocks have been asked to maximize the coal production to supplement the coal supply from domestic coal companies (CIL and SCCL) and additional arrangement for gas for running gas based stations has been planned from GAIL, during high power demand months.

Imported-coal based (ICB) plants have been issued statutory directions to stock coal and generate power during high demand period. In another response to the parliament, Singh, who also holds the portfolio of new and renewable energy said that so far, a total of 168.96 GW renewable energy capacity has been installed in the country as on February 28. ***Source***

Interregional electricity transfer grows 3.5 per cent in Apr-Feb FY23

The total volume of interregional electricity transfer during the first eleven months (April to February) of FY23 grew by 3.5 per cent, on a year-on-year basis. The total quantum of electricity transfer stood at 214,417 million kwh (million units, MU) in the April-February period of FY23 as against 207,228 MU in the same period of FY22. Here are some observations based on official statistics released by Grid Corporation of India Ltd (formerly, Power System Operation Corporation Ltd), pertaining to the April-February period of FY23 and FY22. (The five regional grids – north, east, west, south and northeast – have been abbreviated as NR, ER, WR, SR and NER, respectively.)

- NR and SR continued to be net importers of electricity, while the remaining three – ER, WR and NER – were net exporters.

T-1: Regional Imports & Exports

(Apr-Feb FY23, in MU)

Region	Imports	Exports	Net Imports*
NR	92,895	29,023	63,872
WR	52,636	91,701	-39,065
SR	54,593	19,253	35,340
ER	11,340	69,326	-57,986
NER	2,952	5,114	-2,162
Total	2,14,417	2,14,417	0

**(-) indicates "net exports"*

- Electricity imports by NR declined 7.8 per cent in FY23 (Apr-Feb) to reach 92895 MU from 100728 MU in the April-February period of FY22. Also, exports of electricity from NR grew by 14.5 per cent. Despite NR being a net importer of electricity, the magnitude of net imports fell to 63,872 MU in FY23 (Apr-Feb) from 75,390 MU in the April-February period of FY22.

- WR was less of a net exporter in FY23 as compared with the previous year. This was due to a sharp 21.6 per cent rise in imports, compounded by a 7.3 per cent decline in exports. Net exports by WR fell to 39,065 MU in FY23 (Apr-Feb) from 55,648 MU in FY22 (Apr-Feb).

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- SR witnessed an increase of 8.4 per cent in imports. However, exports grew by a significant 30.1 per cent year-on-year during FY23 (Apr-Feb). Nevertheless, SR maintained its net import level of around 35,000 MU during the first eleven months of FY23.

- ER showed a net export level of 57,986 MU in the April-February period of FY23, slightly higher than the 54,820 MU in the same period of FY23.

- NER saw a big improvement in its net export level. Exports from NER to other regions grew by 35.5 per cent to reach 5,114 MU in FY23 (Apr-Feb). This was matched by a 10.3 per cent decline in imports, year-on-year. With the result, NER was a net exporter to the tune of 2,162 MU in FY23 (Apr-Feb) as against a much humbler 483 MU in FY22 (Apr-Feb).

T-3: Regional Imports & Exports
(Apr-Feb: FY22 vs FY21, in %)

Region	Imports	Exports
NR	-7.8	14.5
WR	21.6	-7.3
SR	8.4	30.1
ER	18.4	7.7
NER	-10.3	35.5
Total	3.5	3.5

In FY23 (Apr-Feb), the biggest interregional electricity transfer, at 59,352 MU, took place from WR to NR. This accounted for around 28 per cent of the total interregional transfer. The next two important transfer regions were ER to SR and ER to NR

The busiest transmission corridor during FY23 (Apr-Oct) was the 765kV Angul-Srikakulam double-circuit line travelling from Odisha to Andhra Pradesh. This **PGCIL**-owned line was used almost entirely for exports from ER to SR, transferred around 15,536 MU in FY23 (Apr-Feb). ***Source***

Electricity Amendment Bill not to impact agriculture sector, says Power Minister

The Electricity (Amendment) Bill, 2022 covers amendments related to power sector and there is no amendment proposal related to agriculture sector, the Parliament was told on Tuesday. Power Minister R.K. Singh gave the assurance in response to a question in Lok Sabha during Question Hour.

"Further, the provision of subsidy as in the present Act i.e. Electricity Act, 2003 is not proposed to be changed and the states can continue to give subsidy to farmers and other consumers as they are doing at present," he said. As per Electricity Act, 2003, the subsidy to specific categories of consumers including domestic and farmers is decided by state governments. The proposed legislation is currently under consideration of the Parliamentary Standing Committee on Energy, which is headed by BJP MP Jagdambika Pal.

Last year during the Monsoon session, the Electricity (Amendment) Bill was referred to the Parliamentary Committee by the power minister, immediately after being introduced in Lok Sabha, amid protests by opposition that it encroached upon powers of states and allows privatisation of electricity on the lines of communication sector. ***Source***

Parliamentary panel asks Power ministry for comprehensive plan on peak power demand

A Parliamentary panel has asked the government to make a comprehensive plan to fully meet peak power demand apart from ad hoc arrangements in view of the projected high electricity demand of 230 GW in April this year. The power ministry has taken many steps to meet the unprecedented high demand for power during this summer season like the direction for all imported coal-based power plants to run at full capacity from March 16, 2023, to June 15, 2023. Besides the ministry has also asked domestic coal-based thermal plants to import coal for blending it with domestic dry fuel to avoid shortages.

About the New Electricity Policy, it stated that the policy serves as a beacon light for the Power Sector as a whole and lays a coherent trajectory for its future growth and development. The panel noted that National Power Training Institute (NPTI) has submitted that there are areas such as Cyber Security, Smart Distribution Sector, etc. where the shortage of trained manpower is being felt. Their budgetary allocations and performance should correspond to the ensuing requirements, it suggested.

The panel noted that there are 10 States/Union Territories where Aggregate Technical & Commercial (AT&C) losses, instead of decreasing, have rather increased during the last five years. These figures do not augur well for the aim of the Government to contain AT&C losses in the country to the level of 12-15 per cent, it stated.

It suggested that the ministry should urgently find out the reasons for the increase in AT&C losses in these States and help the concerned States/DISCOMs to make customized plans to arrest deterioration of the condition. The RDSS (Revamped Distribution Sector Scheme) Scheme envisages the installation of 25 crore Smart Meters at consumer, DT, and feeder level by the year 2025-26. It noted that so far only 70 lakh Smart Meters have been installed and out of this, only 10 lakh are Pre-Paid Meters. It suggested that the ministry should ensure that there is no constraint in the supply of technologically updated and good quality Smart Meters in the country. ***Source***

Power shortage: Grid managers brace for 18 ‘alert days’ in April

India’s electricity distribution is set to face a sharp fall in summer. This year’s expected peak demand of 230 GW has declined by more than 8 percent. As a result, system operators have warned of severe

power shortages for 18 days in April, according to forecasts by the National Load Dispatch Center (NLDC). Last year's peak demand of 211.6 GW was recorded in July.

A series of measures have been initiated to prevent this summer surge in demand: the routine preventive maintenance schedule of thermal plants during the April-June period has been postponed by three months; and orders under Section 11 of the Electricity Act (in exceptional circumstances, the Government may direct a power generating company to operate and maintain any station) from March 16 to June 30. State Distribution Companies holding PPAs (Power Purchase Agreements) with these plants have been given first right of refusal on the power generated.

Also, state-owned NTPC Limited has commissioned about 5,000 MW of gas-based generation (1,000 MW equals 1GW). And the electricity generated from these plants will be sold to the PPA holders. In the electricity market, the country's largest power producer is set to cut production. As part of this arrangement, the fixed costs of operating the plant will be determined by CERC – the Central Electricity Regulatory Commission – while the variable cost will be market-determined, with the difference being reimbursed to NTPC by Power System Development. Fund (PSDF, a regulatory fund created by CERC).

For these 18 days, which are considered "critical", NVVN, the energy trading arm of NTPC, has been asked to contract and pool-in gas power suppliers and any recoveries of this figure would have to be made from the PSDF, officials pointed out.

Reservoir level is good in northern states. But water levels in the southern states are below normal and water production will be lower than expected. As a result, utilities in the south have been asked to conserve water and use it to generate electricity during evening hours in April. An advisory has also been issued to ensure 6 per cent blending of imported coal in conventional thermal plants to prevent any shortfall in domestic supply.

So far, the plant load factor (PLF) of thermal power plants has been around 55 percent. In the long run, the Central Electricity Authority – the planning arm of the power ministry – wants this minimum PLF to be brought down to 45 per cent with some modifications to the machines, eventually as a long-term measure to ensure they operate at a minimum steady load of around 40 per cent.

Pre-feasibility training for offshore hydropower projects for storage use has also been discussed as a means of balancing the variability of renewable energy, but progress on the ground has been slow. A feasibility grant for 4,000 MW of lithium-ion battery storage has been proposed in this year's budget. But the lack of lithium is a major obstacle. And at the moment there are no alternatives to lithium for large-scale storage. Off-stream pumped storage is the only viable alternative for energy storage, but site selection and due diligence for these projects takes time.

Renewable energy (RE) targets are also now stuck, with solar projects coming in at a relatively low rate. "It is clear from the Centre's approach that the grid is critically dependent on a coal-based fleet of 30 to 35-year-old power plants. Adding RE power in the absence of energy storage devices is becoming a challenge for safe grid operation. RE is not a reliable source of power without storage. The country's old thermal power plants are not capable of providing reliable reserve power during emergencies and we do not keep reserve shaft power or spinning reserves for auto-frequency response, which has now proved essential," said a sector analyst in the know. Contingency measures to be taken.

The country's current installed generation capacity is 410 GW. Alarm bells have rung every summer since the economy reopened after a pandemic shutdown due to the severity of several problems: continued

reliance on old, inflexible coal-fired plants for baseload capacity, a shortage of both coal and gas fueled thermal capacity and reliance on renewable generation to meet capacity addition targets over the past decade. This reliance has raised the challenges of a grid powered by renewables that does not necessarily align with the peak demand curve, only during certain parts of the day.

Of the installed capacity, non-fossil fuel-based energy sources account for 175 GW, accounting for more than 40 percent of the total installed capacity, with solar and wind accounting for the largest share.

India's vast 200 MW coal-fired thermal power plants are more than 25 years old, run on old technology and do not promise robust reliability. Also, considering that India's load demand is not saturated, there is a compelling need to replace aging coal-based plants with supercritical coal-based plants that provide operational flexibility as an intermediate target for total conversion.

However, this cannot be accepted by the international community in view of the looming climate crisis. Coincidentally, China, a renewable energy promoter for much of the last decade, has now approved the largest number of coal-fired plants since 2015. Beijing approved 106 gigawatts of new coal-fired power capacity last year. That's more than four times the previous year and equivalent to 100 large power plants, according to a study by the Center for Energy and Clean Air Research and Global Energy Monitor.

But according to many involved in the supply chain business, the biggest root cause is inadequate demand forecasting. Two long-term decisions by the government are also seen as factors that could influence demand projections: Beyond 2022, virtually no new thermal capacity projects have been taken up beyond the 50,000 MW of thermal capacity under construction. Since 2016, the thrust on renewable energy for incremental capacity addition has been almost complete, according to the Ministry of Power's National Power Plan for 2017-22. Two, there was a clear policy disincentive of imported coal during that period, primarily in the wake of spiraling global coal prices. Both those decisions have now been reversed in light of increased demand. ***Source***

Mizoram plans to set up 5 hydro power plants of 800 MW capacity

The Mizoram government has prepared Detailed Project Reports (DPRs) for five hydroelectric power plants in the state with a total generation capacity of around 800 MW, Power & Electricity Department officials said on Tuesday. An official of P&E Department said that DPRs already prepared for the Kolodyne-II HEP (460 MW), Tuival HEP (210 MW), Bairabi Dam Project (80 MW), Tuirini HEP (24 MW) and Tuivawl HEP (24 MW).

Four more proposed hydroelectric projects are now under investigation stage. Currently, Mizoram has no major power project and the state presently imports power from the four regional power plants in Tripura, spending around Rs 400 crore annually for the purchase of power from outside.

The P&E Department officials and engineers on Monday apprised Governor Hari Babu Kambhampati about the proposed power projects, and he, referring to his recent meeting with Prime Minister Narendra Modi, asked P&E Department Commissioner-and-Secretary H. Lalengmawia and other officials and engineers to discuss the proposed power projects with the Union Power Ministry to fine-tune the DPRs and to apprise the Prime Minister's Office (PMO). The Governor also urged the P&E Department to explore the possibilities of tapping the resources of the big PSUs for implementing some of the proposed projects. The potential of power generation from solar plants in the state was also discussed in the meeting. ***Source***

India exploited 29 percent of hydropower potential: Power Minister

New Delhi, Mar 21 (PTI) India has exploited 29 per cent of its hydropower potential against over 80 per cent and 70 per cent developed by the US and European Union respectively, Parliament was informed on Tuesday.

As per the Reassessment Study carried out by the Central Electricity Authority (CEA) during 1978-1987, the assessed hydropower potential in the country is about 1,45,320 MW (for projects with capacity above 25 MW), Power Minister R K Singh said in a written reply to Rajya Sabha on Tuesday.

Singh said that 42,104.6 MW (29 per cent) out of 1,45,320 MW has been developed and 15,023.5 MW (10.3 per cent) is under construction. As per reports of the International Hydropower Association (IHA), the US has developed more than 80 per cent of its hydropower potential and the EU (European Union) has developed more than 70 per cent of its hydropower potential, he told the House. The main challenges in the development of hydroelectric potential in the country are remote location, unpredictable geology, natural calamities, environment and forest issues, Rehabilitation and Resettlement (R&R) issues, law & order issues and inter-state issues, he stated.

In a separate reply, Singh told the House that as on March 14, 2023, the total coal stock at Thermal Power Plants in the country is 33.3 MT (million tonnes) which is only 49 per cent of the Normative Stock Requirement. The coal stocking norms of the Central Electricity Authority mandate the power plants to maintain coal stock which varies from month to month basis. The stocking norms are 20 to 26 days in non-pithead plants and 12 to 17 days in pithead plants so as to ensure sufficient coal stock at power plants to meet demand, it stated. ***Source***

Tamil Nadu to double power generation capacity by 2030

To fulfil the increasing demand for power in the State, the Tamil Nadu Government intends to double the installed capacity by adding 33,000 MW by 2030 with high priority to renewable energy sources. The present contribution of green energy to the State grid at 20.88 per cent will be increased to 50 per cent by 2030 through additional capacity creation.

With solar energy potential of 20 GW, onshore wind energy potential of 70 GW and offshore wind energy potential of 30 GW, Tamil Nadu has immense renewable energy resources and opportunities, Finance Minister Palanivel Thiaga Rajan said in the Budget 2023-24 on Monday.

SPV to drive capacity

The Government will create a dedicated Special Purpose Vehicle. Further, a new policy on repowering windmills in the State will be evolved. Pumped storage hydroelectric projects will be established under PPP mode to meet the peak hour power demand in the State. The 500 MW pumped hydroelectric storage project being constructed at Kundah will be operational by 2024-25. Further, 15 more projects will be established under the PPP mode with a total capacity of 14,500 MW at an estimated cost of ₹77,000 crore by 2030.

The Government will bring out a comprehensive policy to promote investment in pumped hydroelectric storage in the State. Further, on-going thermal power projects of 4100 MW will be completed expeditiously. To automate fetching of metered data, a smart metering system will be installed with prepaid functionality for all paid consumer connections under the RDSS scheme.

As a result of the structural and systemic reforms undertaken by the Government, the fiscal position of Tangedco has improved slightly and it is expected that the loss of Tangedco will be reduced to ₹7,825 crore in 2022-23 from ₹11,955 crore in 2021-22. An allocation of ₹14,063 crore has been provided in the Budget Estimates towards various subsidies provided to Tangedco, he said. ***Source***

Smart prepaid meters to reduce power bills by up to 2.5%: R K Singh

Union Power Minister R K Singh on Monday urged electricity consumers to use smart prepaid meters, saying that the device helps users bring down power costs by up to two percent. Installation of smart prepaid meters reduces the operational and finance cost for electricity suppliers as consumers credit their account in advance, the minister said while releasing the 'Enabling a consumer-centric smart metering transition in India' report.

Using smart prepaid meters will help electricity cost to come down by 2-2.5% "If you have a smart prepaid meter, your cost of electricity will come down by 2-2.5 percent and the consumer gains (at benefit)," Singh said. Usage of smart meters will lead to digitisation of systems, automation and further efficiencies. It will help in energy accounting, which helps in identifying the areas which need attention. "Energy accounting system is another challenge which we are still tackling," he said.

Survey results

According to the findings of the report released, the users of smart prepaid meters are having better experiences compared to conventional post-paid metering systems of billing. While 92 percent surveyed consumers reported a smooth installation experience, 50 percent reported improvements in their bills.

Around 63 percent of the respondents said that they would recommend smart prepaid meters to other consumers, as per the survey conducted by CEEW with the support of MacArthur Foundation and Bloomberg Philanthropies. Over 4,500 people across 18 districts of six states were surveyed.

Around 44 percent could not access detailed bills of their electricity usage. Jitendra K Agarwal, Joint MD of smart metering firm Genus Power said, "These new-age smart meters help reduce the operation and maintenance cost and enhance the quality of service. Metering is an important infrastructure for the country. Smart prepaid meters maintain accuracy in the billing of electricity usage." ***Source***

Power demand rose 11% Y-o-Y, coal output grew at over 15% in FY23

In an exclusive interview, Coal Secretary Amrit Lal Meena said, “Because of growth in the economy, power demand has gone up. So, despite over 15 per cent Y-o-Y increase in production, the stock building has not been possible due to about 11 per cent increase in power demand, which used to be 6 per cent.”

The Ministry’s advance planning and coordination with all stakeholders on building stocks and measures such as fast tacking commercial coal mine auctions and modernisation has helped create a comfortable stock position. By March 2023, the overall stock is expected at 115 million tonnes, he added.

The country’s power consumption grew 10 per cent Y-o-Y to 1,375.57 billion units in AprilFebruary of FY23, surpassing electricity supplied in the entire FY22. Coal production rose 15.12 per cent to about 785.24 million tonnes. However, the Secretary assured that all necessary arrangements are in place to meet any demand. Currently, coal reserves at power plants are around 33 million tonnes. The overall stock position is also healthy as the stock today is higher by 27 per cent Y-o-Y at 108 million tonnes.

“But there is no need to worry. Because an adequate number of railway rakes have been deployed. They are transporting coal wherever required and the system is working flawlessly. We have been maintaining

a stock of over 30 million tonnes for the last four months. Some plants have a stock for 30 days. Overall, there is availability of coal," he added.

Increasing output

Meena explained that the Ministry worked simultaneously on various initiatives to strengthen the entire supply chain. This included single window clearance and amendment of Mines and Minerals (Development and Regulation) Act to allow captive mines to sell up to 50 per cent of their annual production after meeting the requirement of end use plants.

The Ministry also leveraged technology such as increasing the use of mass production techniques like surface miner, continuous miner etc., taking up new projects, expansion of existing projects, and auction of coal blocks to private companies/PSUs, he added.

Besides, India's coal production from captive and commercial mines crossed 100 million tonnes for the first time. Production during April-February of FY23 rose 29.8 per cent Y-o-Y and the ministry is hopeful of achieving around 114 million tonnes output in FY23, against 89 million tonnes in FY22. ***Source***

Power purchase in Delhi shows rising trend once again

The total power purchase in Delhi, which showed a downward trend during Covid-19, increased to 37,460MU in 2021-22, according to Economic Survey of Delhi 2022-23.

Discom officials said 2022, which was mostly free of Covid restrictions after two consecutive years, saw Delhi breaking several past records of power consumption. Delhiites consumed almost half the power during the two Covid waves in 2021 than in 2022. In 2019, the peak summer demand was 7,409 MW, which was also more than that of 2020 and 2021, said discom sources. November and December 2022 saw the peak winter power demand at more than that of the previous two years.

"While 16.65% of the total power purchase is sourced from own generation by Delhi government's power plants, 83.34% is purchased from the central government and other sources," it added. The survey, however, revealed that the city had managed to harvest only 20MW of additional solar power this financial year. According to it, the total power generated by solar systems was 244MW till September 2022 against 223.6MW in 2021-22.

"To promote use of green power through solar in Delhi, Government of NCT approved Delhi Solar Policy 2016 with the aim to install 2,000MW solar installation by 2025… Solar systems' installed capacity is 244MW at 6,864 locations," the survey stated. Delhi government has also reiterated its aim to generate 2,000MW of solar power by 2025, prompting experts to call for prompt action.

The data shows that over a decade, the entire power purchase has increased from 33,390MU in 2011-12 to 37,460MU in 2021-22, and the number of consumers from 43.01 lakh to 65.9 lakh. The power department has subsidised 100% of the energy charges for domestic consumers consuming up to 200 units per month and given a subsidy of up to Rs 800 per month for those consuming between 201-400 units. As per Outcome Budget, 48.9 lakh domestic consumers are entitled to the subsidies and 75% of them availed of it.

Waste-to-energy plants are being set-up at various locations in Delhi, including a Municipal Corporation of Delhi-National Thermal Power Corporation joint venture for a 12MW plant, said the report.

In 2016, the government issued a policy making solar power installations mandatory on all government buildings having a rooftop size of 500 sqm or above and offered a generationbased incentive for three years in residential areas. But experts pointed out that the existing solar capacity was just a fraction of the 2025 target. “The ministry of new and renewable energy has set a target for Delhi at 2.762GW (2,762MW) by the end of 2022, but the existing solar power capacity is roughly 0.2GW,” said Aditya Lolla, a senior policy analyst at energy thinktank Ember. “If we go purely by numbers, Delhi will have to add 60MW of solar power every month to achieve 2,000MW by 2025 or the next 30 months,” Lolla added.

Experts also pointed out that the government would need to find alternatives and encourage public. “At this pace, we will reach nowhere. The authorities must address several issues, including realising the potential. Rooftops at apartments are full of water tanks and AC units. We will have to find alternatives. There was a draft policy on rooftop, which seemed encouraging, but we are not aware of its status,” said Binit Das, deputy programme manager, renewables at Centre for Science and Environment. He pointed out that the virtual net metering might also not be of much use in Delhi due to the provision of free power units. “We have observed that the rooftop solution is working really well in the states with high tariff.” ***Source***

Maharashtra's installed power generation maximum in India

MUMBAI: Maharashtra has the highest share in installed capacity (10.9%) of electricity generation in India, states the latest state economic survey report. The total installed capacity of electricity generation as on March 31, 2022 in the state was 37,348 MW, of which the share of private sector was 59.9%, that of public sector was 34.8% and of public-private partnership (PPP) (Ratnagiri Gas Power Project Ltd.) was 5.3%. Share of renewable energy in installed capacity of private sector was 46% and renewable installed capacity increased by 7% in a year, the report shows.

"Total electricity generated in state was 1,31,682 million units (MU) during 2021-22. During 2022-23, up to December, total electricity generated was 1,01,511 MU. The generation may go up with capacity addition for thermal power," the report says.

Mahagenco, the state power generator, has accorded approval for installation and commissioning of projects for capacity addition at various thermal power stations, it said. "Capacity addition of 660 MW in the project at Bhusawal is in progress. For the project with capacity of 1,320 MW at Koradi, process of acquiring statutory clearances is in progress," the report states.

Commenting on the increasing demand for power in Maharashtra, the report mentioned: "The state being one of the developed and populated states, demand for energy is increasing in the state due to industrialisation, urbanisation, digitalisation and electrification of the transport sector. It has succeeded in meeting the increasing demand." The share of private, public and public-private partnership in total electricity generation in 2021-22 was 56.2%, 41.4% and 2.4% respectively.

The report says electricity generation through renewable sources was promoted for sustainable development. "The Centre launched the programme in 2016 for installation of rooftop solar by consumers... Phase-II of the programme is... for residential consumers for installation of rooftop solar. Under this scheme, 40% subsidy is provided for up to capacity 3 kW...," it states. ***Source***

Recent Regulatory Reforms and its implications on Future Electricity Transactions

The Central Electricity Regulatory Commission (CERC) is in the process of framing many new regulations – such as Grid code, General Network Access (GNA) Regulations, Transmission Sharing Regulations,

Renewable Energy Certificate (REC) Regulations, Ancillary Regulations, Deviation Settlement Mechanism (DSM) Regulations etc. which will have significant bearing on the functioning of the sector in the days to come, notes Jogendra Behera.

Particularly, Grid code, GNA Regulations and Transmission Sharing Regulations are the three regulations related to functioning of inter-state transmission system in the country. While the Grid Code lays down the framework for efficient and secure grid operations, the GNA regulations is related to obtaining open access in the inter-State transmission system. Similarly, the Transmission Sharing Regulations lay down the mechanism for recovery of Yearly Transmission Charges (YTC) from the designated users of the inter-State transmission system. These three regulations constitute the overall regulatory framework for the allocation and utilization of inter-State transmission system in the country.

As the transmission of electricity continues to be dependent upon the wired meshed network having natural monopoly characteristics, the important consideration other than having a secure and reliable grid, is to develop adequate transmission capacity and ensure efficient utilization of these highly capital intensive and scarce resources. The availability and efficient utilization of the transmission system will facilitate efficient transactions between the buyers and sellers of electricity which will lead to optimal utilization of generation resources and lowering of power procurement cost having far more significance for the sector. It is in this context that the proposed regulations are important for the market and the sector.

These regulations have covered different aspects of the inter-state transmission system proposing changes in some of the earlier mechanism and introducing newer concepts keeping in view the emerging needs of the sector. The Grid code has dealt with issues viz. resource adequacy, ancillary services and reserves, integration of renewables, unit commitment, cyber security etc. whereas the GNA Regulations has brought in a completely new approach for obtaining the access to the transmission system along with scheduling of transactions on a day ahead basis. Similarly, the Transmission Sharing Regulations has revised the methodology for recovery of transmission charges from its users. The key takeaways from these three regulations and their implications are as follows:

- Decoupling with the underlying commercial contracts: Earlier the development of the transmission system was driven by the Long-Term Access and the underlying Per Purcowhase Agreement (PPA) of the Discoms. In many cases when the PPA could not fructify, the beneficiaries have relinquished the LTA leading to stranded transmission assets which had to be eventually socialized amongst all the users. As per the new GNA regulations, the development of transmission system has been decoupled with the underlying commercial contracts. It is envisaged that the development of the transmission system will take place-based on the assessment of the upcoming generating stations and load centersand not based on the underlying PPAs which will rationalize the development of transmission system in the country.

- Scheduling of any contract under the GNA: GNA Regulations has proposed deemed GNA for the States based on their past demand during last 3 years. Discoms can take additional GNA as per their quantum of demand and can schedule any contract within this quantum without paying any additional transmission charges. In case there is seasonal demand, the Discoms even can opt for Temporary GNA up to a period of 11 months. Consequently, the Discoms will be incentivized to schedule their contracts including the power available in power exchanges based on marginal cost as the transmission charges will be ‘sunk cost’ in nature leading to merit order dispatch of the generating stations.

- Scheduling on a Day Ahead basis: Both Draft Grid Code and GNA has brought in the concept of day ahead scheduling for all the contracts. It is proposed that all the entities will schedule their transactions on a day ahead basis regardless of the duration of contract. The transmission corridor will be allocated in the following order — GNA, T-GNA Advance, Day Ahead Market (DAM), and T-GNA Exigency, which will then be utilized for the transactions taking place in Real Time Market (RTM) and for revisions under GNA on a first come first basis. The transmission corridor remaining unutilized after a particular step will get released for allocation in subsequent steps. For instance, the transmission corridor available after allocation to transactions under GNA and T-GNA Advance by 9:30 AM will be released for the transactions in DAM. This mechanism will ensure that if the users are not utilizing their transmission corridor as per their priority and within the stipulated timelines, then the same can be utilized by others for meeting their requirements. This will avoid squatting on the transmission capacity and improve its utilization.

- Rationalization of Transmission charges: For quite some time the Point of Connection (PoC) mechanism was opposed, as the transmission charges levied was largely driven by the flow of electricity in the network which was beyond the control of the users. Transmission Sharing Regulations has brought a change in this methodology – transmission costs are now largely driven by Discoms GNA which is dependent on their demand. This is expected to provide more stability and transparency in the system. The transmission charges and losses will be borne by only the buyers which will bring a clarity on the applicability of charges. It will address the prevailing double charging of the transmission charges in the collective transactions wherein the generators also have to pay the transmission charges for selling power through the collective transactions. This will provide equal footing for both the collective and bilateral transactions.

The above changes are expected to bring significant improvement in the allocation and utilization of inter-State transmission system in the country. This will facilitate efficient transactions between buyers and sellers which take place on top of the meshed transmission network. The Discoms will have opportunities to reduce their overall power purchase cost including the transmission charges by considering various alternatives available in the market on a day ahead basis. They can schedule their power from the least cost sources including the DAM of the power exchanges. However, to benefit from these changes the Discoms are required to increase their market orientation and bolster their capabilities to take advantage of the situation. ***Source***

Transmission charges payable by DICs for the billing month of April 2023

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	42.57
2	UP	NR	46.47
3	Punjab	NR	50.03
4	Haryana	NR	54.80
5	Chandigarh	NR	45.04
6	Rajasthan	NR	48.69
7	HP	NR	47.42
8	J&K	NR	45.90
9	Uttarakhand	NR	50.08
10	Gujarat	WR	42.05
11	Madhya Pradesh	WR	48.30
12	Maharashtra	WR	55.28
13	Chhattisgarh	WR	36.43
14	Goa	WR	45.40
15	Daman Diu	WR	48.51
16	Dadra Nagar Haveli	WR	48.51
17	Andhra Pradesh	SR	77.57
18	Telangana	SR	53.39
19	Tamil Nadu	SR	49.29
20	Kerala	SR	51.61
21	Karnataka	SR	56.36
22	Pondicherry	SR	47.18
23	Goa-SR	SR	39.71
24	West Bengal	ER	41.29
25	Odisha	ER	44.09
26	Bihar	ER	38.91
27	Jharkhand	ER	46.29
28	Sikkim	ER	38.28
29	DVC	ER	43.74
30	Bangladesh	ER	34.46

31	Arunachal Pradesh	NER	46.85
32	Assam	NER	38.08
33	Manipur	NER	40.58
34	Meghalaya	NER	38.96
35	Mizoram	NER	38.28
36	Nagaland	NER	51.00
37	Tripura	NER	44.13

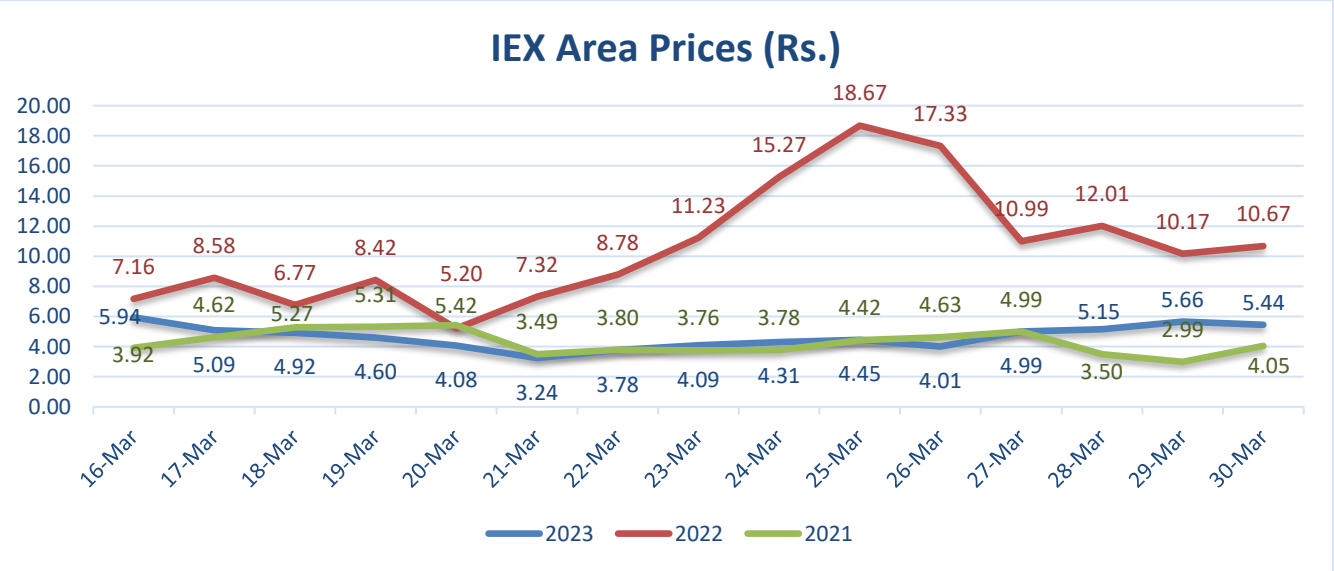
Bilateral Tender Results: -

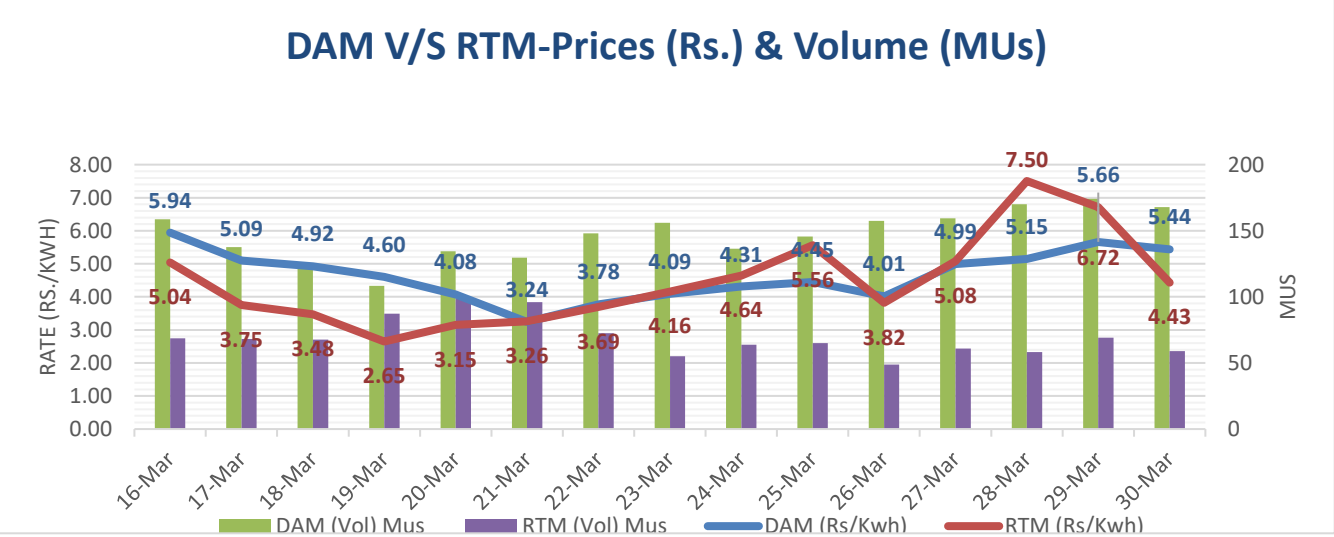
Sl. No.	Tender Quantum (MW)	Supply Period	Time Blocks (Hrs.)	Price (Rs./kWh)	LOI Status
UPCL/Short/23-24/RA/6					
1	400	01.04.2023 to 30.04.2023	00:00 to 24:00	11.10-11.50	Awaited
2	400	01.05.2023 to 31.05.2023	00:00 to 24:00	9.00-11.75	
3	400	01.06.2023 to 30.06.2023	00:00 to 24:00	9.00-11.5	
GRIDCO LIMITED/Short/22-23/RA/251					
1	200	01.04.2023 to 15.04.2023	00:00 to 24:00	10.00-11.50	Tender Annulled
2	200	16.04.2023 to 30.04.2023	00:00 to 24:00	10.00-11.50	
3	200	01.05.2023 to 15.05.2023	00:00 to 24:00	10.00-11.50	
4	200	16.05.2023 to 31.05.2023	00:00 to 24:00	10.00-11.50	
5	150	01.04.2023 to 15.04.2023	00:00 to 02:00	-	
6	150	16.04.2023 to 30.04.2023	00:00 to 02:00	-	
7	150	16.04.2023 to 30.04.2023	18:00 to 24:00	-	
8	150	01.05.2023 to 15.05.2023	00:00 to 02:00	-	
9	150	01.05.2023 to 15.05.2023	18:00 to 24:00	-	
10	150	16.05.2023 to 31.05.2023	00:00 to 02:00	-	
11	150	16.05.2023 to 31.05.2023	18:00 to 24:00	-	
12	150	01.06.2023 to 15.06.2023	00:00 to 02:00	-	
13	150	01.06.2023 to 15.06.2023	16:00 to 24:00	-	
14	150	16.06.2023 to 30.06.2023	00:00 to 02:00	-	
15	150	16.06.2023 to 30.06.2023	18:00 to 24:00	-	
16	150	01.07.2023 to 15.07.2023	00:00 to 02:00	-	
17	150	01.07.2023 to 15.07.2023	18:00 to 24:00	-	
18	150	16.07.2023 to 31.07.2023	00:00 to 02:00	-	
19	150	16.07.2023 to 31.07.2023	18:00 to 24:00	-	
20	150	01.04.2023 to 15.04.2023	18:00 to 24:00	-	

BSES/Short/23-24/RA/12					
1	300	01.04.2023 to 15.04.2023	00:00 to 03:00	-	Awaited
2	400	01.04.2023 to 15.04.2023	20:00 to 24:00	-	
3	300	16.04.2023 to 30.04.2023	00:00 to 03:00	-	
4	400	16.04.2023 to 30.04.2023	20:00 to 24:00	-	
5	400	01.05.2023 to 15.05.2023	00:00 to 03:00	-	
6	500	01.05.2023 to 15.05.2023	20:00 to 24:00	-	
7	400	16.05.2023 to 31.05.2023	00:00 to 03:00	-	
8	500	16.05.2023 to 31.05.2023	20:00 to 24:00	-	
9	300	01.06.2023 to 15.06.2023	00:00 to 03:00	-	
10	400	01.06.2023 to 15.06.2023	20:00 to 24:00	-	
11	300	16.06.2023 to 30.06.2023	00:00 to 03:00	-	
12	300	16.06.2023 to 30.06.2023	20:00 to 24:00	-	
13	100	01.07.2023 to 15.07.2023	00:00 to 03:00	-	
14	300	01.07.2023 to 15.07.2023	20:00 to 24:00	-	
15	100	16.07.2023 to 31.07.2023	00:00 to 03:00	-	
16	100	16.07.2023 to 31.07.2023	20:00 to 24:00	-	
17	100	01.08.2023 to 15.08.2023	00:00 to 03:00	-	
18	400	01.08.2023 to 15.08.2023	20:00 to 24:00	-	
19	100	16.08.2023 to 31.08.2023	00:00 to 03:00	-	
20	300	16.08.2023 to 31.08.2023	20:00 to 24:00	-	
21	100	01.09.2023 to 15.09.2023	00:00 to 03:00	-	
22	350	01.09.2023 to 15.09.2023	20:00 to 24:00	-	
23	100	16.04.2023 to 30.04.2023	00:00 to 24:00	11.5	
24	100	01.05.2023 to 15.05.2023	00:00 to 24:00	9.99	
25	100	16.05.2023 to 31.05.2023	00:00 to 24:00	9.99	
26	100	01.06.2023 to 15.06.2023	00:00 to 24:00	9.99	
HARYANA POWER PURCHASE CENTRE/Short/22-23/RA/252					
1	750	01.05.2023 to 31.05.2023	00:00 to 24:00	10.00-13.00	Awaited
2	750	01.06.2023 to 30.06.2023	00:00 to 24:00	8.96-9.5	
3	750	01.07.2023 to 31.07.2023	00:00 to 24:00	7.98-8.58	
4	750	01.08.2023 to 31.08.2023	00:00 to 24:00	7.97-8.58	
5	750	01.09.2023 to 30.09.2023	00:00 to 24:00	8.50-8.70	
6	750	01.10.2023 to 15.10.2023	00:00 to 24:00	8.50-8.70	

PFC Consulting Limited/Short/23-24/RA/3 (NDMC)					
1	70	01.04.2023 to 30.04.2023	09:00 to 18:00	12	Awaited
2	80	01.05.2023 to 31.05.2023	09:00 to 18:00	9.96	
3	90	01.06.2023 to 30.06.2023	09:00 to 18:00	9.97	
4	90	01.07.2023 to 31.07.2023	09:00 to 18:00	9.97	
5	70	01.08.2023 to 31.08.2023	09:00 to 18:00	9.97	
6	70	01.09.2023 to 30.09.2023	09:00 to 18:00	10	
7	50	01.10.2023 to 31.10.2023	09:00 to 18:00	9.34	
KSEBL/Short/22-23/RA/245					
1	100	01.05.2023 to 20.05.2023	19:00 to 23:00	15.42	Awaited
2	200	21.05.2023 to 31.05.2023	19:00 to 23:00	15.42	

IEX Price Trends





Weather (Estimated for next fortnight)

City	Max Temp	Min Temp	Precipitation (Probability)
DELHI	38	24	6%
MUMBAI	34	27	2%
KOLKATA	40	29	2%
CHENNAI	37	27	1%

(Source - Accuweather)

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