TATA POWER

TATA

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TPTCL'S E-NEWS LETTER

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Tata Power Trading Company Limited (TPTCL)

Lighting up Lives!

Power Market News

Interregional Electricity Transfer Grows 3.6 pc in FY23

Interregional electricity transfer electricity aggregated 236153 million kWh (MU or million units) in FY23, growing modestly by 3.6 percent over FY22.

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According to a special study by T&D India, based on official statistics released by Central Electricity Authority (**CEA**), exports from WR to NR (denoted as WR-NR) continued to be the biggest component of interregional transfer with a share of 27 percent in the total interregional electricity transfer.

Here are some other striking observations:

- Though WR-NR continued to be the biggest component of interregional transfer, the total quantum of WR-NR transfer was 15 percent lower in FY23 as compared with FY22.

T-1: Regional Imports & Exports

(Apr-Mar FY23, in MU)

Region	Imports	Exports	Net Imports*
NR	99,345	33,024	66,321
WR	58,260	1,01,610	-43,350
SR	63,166	19,964	43,202
ER	12,055	76,160	-64,104
NER	3,327	5,396	-2,069
Total	2,36,153	2,36,153	0

**(-) indicates "net exports"*

- NR continued to be the biggest net importer of electricity in FY23. However, in FY23, net imports by NR stood at 66,321 MU, which was much lower than 78,634 MU in FY22. This was also reflected in the fact that while imports by NR fell 7.3 percent in FY23, exports rose sharply by 15.7 percent.

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

T-2: Regional Imports & Exports

(Apr-Mar FY22, in MU)

Region	Imports	Exports	Net Imports*
NR	1,07,171	28,536	78,634
WR	47,735	1,08,658	-60,923
SR	59,115	15,506	43,610
ER	10,311	71,155	-60,844
NER	3,588	4,065	-477
Total	2,27,920	2,27,920	0

**(-) indicates "net exports"*

- WR was less of a net exporter in FY23. Exports from WR fell by 6.5 percent in FY23 which was compounded by a massive 22 percent increase in imports.

- ER was a bigger net exporter in FY23, to the tune of 64,104 MU. Exports from ER grew by 7 percent to reach 76,160 MU. Imports by ER also grew by 16.9 percent, but the impact was not much as the quantum of imports – at 12,055 MU in FY23 – was much lower than exports.

T-3: Regional Imports & Exports
(FY23 vs FY22, in %)

Region	Imports	Exports
NR	-7.3	15.7
WR	22.0	-6.5
SR	6.9	28.8
ER	16.9	7.0
NER	-7.3	32.7
Total	3.6	3.6

- Imports by SR rose by 6.9 percent to reach 63,166 MU in FY23 from 59,115 MU in FY22. Exports also grew by 28.8 percent from 15,506 MU in FY22 to 19,964 MU in FY23.

- NER, the smallest regional grid with respect to the quantum of interregional transfer, did well in FY23. It was a bigger net exporter of electricity to the tune of 2,069 MU in FY23, significantly higher than 477 MU in FY22. It may be mentioned that exports from NER to ER nearly doubled to reach 1,962 MU in FY23. ***Source***

IEX volumes up 6% at 7,928 mn units in April

New Delhi: The Indian Energy Exchange (IEX) reported 7,928 million units (MU) of volume traded in April, including 280 MU traded in the green market, 1.99 lakh in renewable energy certificates (REC) equivalent to 199 MU, and 1.23 lakh energy saving certificates (ESCerts) equivalent to 123 MU. April volumes were up 6% year-on-year (YoY).

Average price last month was at Rs. 5.41/unit, a decline of 46% YoY from Rs. 10/unit in April 2022 due to improving supply-side scenario leading to increased liquidity, as well as cooler weather conditions. Sell-side liquidity also improved due to government initiatives to ensure adequate power supply during this summer season, including gas-based thermal power that was made available on the exchange.

The trade commenced at the high price day-ahead market (DAM) segment, with 193 MWh volume during the month. This segment allows high-cost generators such as gas-based power generators, imported coal-based plants, and battery-energy storage systems to sell electricity on the market. As per data published by GRID-INDIA, energy met in the country during April 2023 stood at 130.57 billion units (BU), declining 1.1% on YoY basis due to widespread rains.

The day-ahead market (DAM) volume increased to 4,332 MU in April 2023 from 3,993 MU in April 2022, i.e. 8.5% growth on YoY basis due to favorable prices. The average market clearing price was Rs. 5.41/unit during the month, significantly lower by 46% over the corresponding month last year

The real-time electricity market (RTM) achieved 2,152 MU volume during April 2023, registering an impressive 26% YoY growth. There were 733 participants in this segment during the month. The consistent growth of the RTM segment reflects its increasing acceptance among distribution utilities and industries to efficiently balance their power demand-supply on a real-time basis.

The term-ahead market (TAM), comprising intra-day, contingency, daily & weekly contracts, and contracts up to 3 months, traded 842 MU during April 2023, lower 28% on YoY basis. IEX Green Market, comprising the Green Day-Ahead and Green Term-Ahead Market segments, achieved 280 MU volume during April 2023, lower 16% on YoY basis. Through this Market, IEX is facilitating renewables' integration to achieve India's sustainability targets.

A total of 1.99 lakh RECs were cleared in the trading session at IEX held on Wednesday, 26 April, with a cleared price of Rs. 1,000/REC. The next REC trading session at the exchange is scheduled on Wednesday, 31 May 2023. During April, 1.23 lakh energy saving certificates (ESCerts) (equivalent to 123 MU) were traded on IEX, at the floor price of ₹1,840 per ESCert. ***Source***

Heatwaves in India may raise power prices: Fitch

Fitch Ratings said that the recent heatwaves in India are unlikely to impact the ratings of the power-generation companies (GENCOS) in their portfolio in the near term, although they could contribute to higher power prices. The India Meteorological Department has forecast that the country would experience above-normal temperatures and an increased number of heatwave days during April-June.

These heatwaves resulted in a surge in demand for electricity, putting pressure on coal inventory for coal-fired plants and complicating supply-chain issues and funding requirements for the power-generation sector.

Despite coal inventories appearing to be sufficient through April to avoid a repeat of the 2022 coal-supply disruptions, there is a risk of complications from domestic coal-supply problems, as highlighted by the recent strike at Coal India's Talcher mine that affected production.

These difficulties can cause generators to increase their reliance on more expensive imported coal or liquefied natural gas, leading to higher tariffs for consumers. Additionally, the incipient El Nino weather phenomenon could reduce hydro power generation in 2023, further straining electricity supply.

However, these dynamics may be positive for Fitch-rated renewable energy firms that can sell extra production on power exchanges at higher prices due to the demand-supply gap. Additionally, firms with electricity storage operations could benefit from higher power demand volatility, which should increase the importance of storage. Fitch also believes that strong electricity demand should reduce curtailment risk.

Nevertheless, if state utility discoms delay paying outstanding dues to renewable generators and are unable to promptly pass on higher power purchase costs, it could negatively impact the cash profiles of generators. However, Fitch assumes that central government policies will continue to support the timely clearing of discom receivables, at least in the near term.

Despite robust medium-term growth prospects for renewable generators, supply factors pose challenges. Strong global demand has led to an increase in the cost of materials and equipment such as solar modules and wind turbines. The Indian government's efforts to localise the renewable-power equipment supply chain have also raised costs, with tariffs of 40% on imported solar modules and 25% on imported solar cells coming into effect in 2022. Nonetheless, Fitch believes that the government's goal of having half of the country's installed electricity generation capacity coming from non-fossil fuels by 2030 will support the growth of renewable generators. ***Source***

Monsoon management plan in works to ensure coal at power plants

The coal ministry is working on a 'monsoon management plan' to ensure adequate availability of the fuel at power plants during the rainy season when both coal production and evacuation are impacted. Under the plan, coal companies will focus on evacuating coal through first-mile connectivity, deliver more from shallow areas, and develop cemented roads for movement of trucks, coal secretary Amrit Lal Meena told ET. "With these, we are hopeful that the availability of coal at power plants will be sufficient and on target," he said. The planning focus has now moved to the second quarter as there is lesser coal stock depletion at present owing to favourable weather conditions, but supply may get stretched due to rains impacting operations.

The government was focused on delivering large quantities in the first quarter, anticipating a surge in demand in April. First-mile connectivity refers to the transportation of coal from pitheads to dispatch points without road transportation of coal in mines. It includes railway sidings near coal mines and mechanised coal transportation and loading system that crush, size coal and provide speedy computer-aided loading.

In the larger mines, cemented roads have already been developed, which will help in the rainy season, Meena said. Shallow mines are those that are new with less depth compared to those that have been excavated for a longer period. The target of total coal production for July-September quarter this year is 203.2 million metric tonnes while that of offtake to power plants is 180.3 mt.

In the last financial year, the target of offtake to power plants for the same period was 155.9 million metric tonnes but the actual delivery was much higher at 165 mt because of higher domestic fuel demand. So far, there have been no transportation challenges as railways have been providing sufficient rakes, Meena said. Coal stock at power plants as of April 30 was at 35.8 mt, much higher compared with 21.9 mt on the same day last year.

Stock at power plants have consistently remained above 30 million metric tonnes over the last four months, which means the supply is meeting the demand, Meena said. Adequate rakes for coal transport have also been provided so far and depletion in summer months starting March has been marginal, he added. The cooler-than-expected weather in north India also helped temper demand in April when a 231 GW peak was expected. The highest demand so far was on April 17 at 216 GW. ***Source***

India must reduce energy intensity to reach net zero 2070 target: RBI

India's goal of achieving the net zero target by 2070 would require an accelerated reduction in the energy intensity of GDP by around 5 per cent annually and a significant improvement in its energy-mix in favour of renewables to around 80 per cent by 2070-71, a report released by the Reserve Bank of India (RBI) said.

It further said that India's green financing requirement is estimated to be at least 2.5 per cent of GDP annually till 2030, adding that a balanced policy intervention with progress ensured across all policy levers, will enable India to achieve its green transition targets by 2030, thus making the net zero goal by 2070 attainable. The report on currency and finance (RCF) for 2022-23 titled "Towards a Greener Cleaner India" contains a series of articles by various experts.

It covers four major dimensions of climate change to assess future challenges to sustainable high growth in India, namely, the unprecedented scale and pace of climate change; its macroeconomic effects; implications for financial stability; and policy options to mitigate climate risks. India has embarked on a

targeted and time-bound climate action plan to reduce carbon emissions and currently ranks the best amongst G-20 countries, as per the Climate Change Performance Index, 2023, the report added. ***Source***

Central Electricity Authority revises down FY30 peak power demand projection

The Central Electricity Authority (CEA) has projected a peak power demand of 335 GW and 2.28 trillion units of electricity for the year 2029-30. This is slightly lower than the 340 GW peak demand anticipated by the authority in its last report in 2020. The projected peak demand for FY30 is 45% higher than the about 230 GW estimate for the current financial year. The reassessment was seen as necessary after pandemic-related delays in some projects, India's updated nationally determined contributions under the Paris Agreement, change in the cost trajectory of battery energy storage systems, and green hydrogen production, among others.

An additional 16,204.5 MW of coal-based power will be required to meet the electricity demand in 2029-30 apart from the 26,900 MW currently under construction. A renewable energy-based capacity of 180.4 GW - 145.9 GW solar and 34.5 GW wind - is estimated in the given timeline in addition to the 117 GW currently in the planning and implementation stage. An additional capacity of 389 MW of large hydro projects is also required till 2030 apart from the capacity of 11,494 MW currently under construction.

The share of thermal power will reduce to 35.5% in the installed capacity in 2029-30 from 57% currently because of the projected renewable energy capacity addition. On the other hand, clean energy-based capacity in the period will increase to 62.4% as compared to 41.4% as of March 2023. The non-fossil fuel-based capacity is likely to be at 500.6 GW, which is in line with the government's target, constituting about 64% of the total capacity mix. The battery energy storage system capacity estimate for FY30 is up to 41.65 GW from the 27 GW projected in the previous report because of the government's latest push for storage.

Dynamic Factors

The impact of electric vehicles considered in the projected peak demand in 2029-30 is 3 GW while the electricity requirement is pegged at 15 billion units in energy requirement.

Energy requirement offset due to solar rooftop installation has been estimated at 34.8 billion units and that due to solar pump installation at 2.4 billion units for the timeline. Additional energy requirement on account of green hydrogen production of around 10 million tonnes, considering only 5 million tonnes load on the grid, has been estimated as 250 billion units. ***Source***

India may amend power policy draft to halt new coal-fired capacity

India plans to stop building new coal-fired power plants, apart from those already in the pipeline, by removing a key clause from the final draft of its National Electricity Policy (NEP), in a major boost to fight climate change, sources said. The draft, if approved by the federal cabinet chaired by Prime Minister Narendra Modi, would make China the only major economy open to fresh requests to add significant new coal-fired capacity.

India and China account for about 80% of all active coal projects as most developing nations wind down capacity to meet climate targets. As of January 2023, only 20 countries have more than one coal project planned, according to E3G, an independent climate think tank. “After months of deliberations, we have arrived at a conclusion that we would not need new coal additions apart from the ones already in pipeline,” one of three government sources said.

The sources declined to be identified as they are not authorised to speak to the media. India's power ministry did not respond to requests seeking comment. The new policy, if approved, would not impact the 28.2 GW of coal-based power in various stages of construction, the sources said. China and India have together been lobbying for freedom for countries to choose a roadmap to cut emissions. India, whose proposed coal power capacity is the highest after China, had repeatedly refused to set a timeline to phase out coal, citing low per-capita emissions, surging renewable energy capacity and demand for inexpensive fuel sources.

Coal is expected to be the dominant fuel in generating electricity in India for decades, but activists have pressed for a halt to new coal-fired plants, arguing this would at least help to reduce the share of the polluting fuel in overall power output. The draft, India's first attempt at revising its electricity policy enacted in 2005, also proposes delaying the retirement of old coal-fired plants until energy storage for renewable power becomes financially viable, the sources said. So far, old coal-fired power plants with a cumulative capacity of 13 GW have been earmarked for functioning post retirement deadline to meet high power demand, they said.

CHANGE IN STANCE

In the first draft of the NEP in 2021, India had said it may add new coal-fired capacity, though it proposed tighter technology standards to reduce pollution. The Central Electricity Authority, an advisory body to the federal power ministry, had said last year India might have to add as much as 28 GW of new coal-fired power in addition to the plants under construction to address surging power demand.

However, the final draft, which will guide India's policymaking on energy over the next decade, features no references to new coal-fired power, the sources said. In contrast, China's National Development and Reform Commission said in a March 2022 document that outlined its energy policy, that the world's largest coal user "will rationally build advanced coal-fired power plants based on development needs."

China plans to build some 100 new coal-fired power plants to back up wind and solar capacity, which analysts said goes against Beijing's stated intention to reduce the role of coal. The policy revision could also impact long-term coal prices and miners in Indonesia, Australia and South Africa, as India is the world's second-largest coal importer. ***Source***

DISCOMs' Liability to Power Generators Rises to ₹449 Billion at April-End

Distribution companies (DISCOMs) owed power generators ₹448.62 billion (~$5.49 billion) in overdue payments for the monthly billing cycle at the end of April. The dues are higher than ₹422.13 billion (~$5.16 billion) at the end of March. Similarly, the total outstanding owed to power generators stood at ₹711.35 billion (~$8.7 billion), higher than ₹679.73 billion (~$8.3 billion) at the end of March.

The current outstanding dues, excluding the latest monthly dues, are ₹262.72 billion (~$3.21 billion). The overdue before the trigger date is ₹262.68 billion (~$3.21 billion), after which the amount increases to ₹262.72 billion (~$3.21 million) as the late payment surcharge (LPS) would become applicable.
The trigger date is one month after the due date of payment or two and a half months after the presentation of the bill by the generating company, whichever is later. The DISCOMs are allowed to pay the outstanding in up to 48 instalments. The Ministry of Power recently proposed provisions in the Electricity (Amendment) Rules, 2023, for subsidy accounting and payment and a framework to ensure the financial sustainability of DISCOMs. The stakeholders can submit their comments and suggestions by May 11, 2023.

Last June, the ministry notified the LPS and Related Matters Rules, 2022, which substantially raised the DISCOMs' cost for delaying payment to suppliers. The new rules provided for an LPS payable on the outstanding sum after the due date at the base rate applicable for the first month of default. The rules say that the rate of LPS for the successive months of default would increase by 0.5% for each month of delay, given that it will not be more than 3% higher than the base rate at any time.

Historically, the poor management of finances by DISCOMs has impeded the growth of the energy sector in India. After at least two decades of bailouts and reform programs, the stateowned utilities continue to be a massive drag on the electricity supply chain's upstream segments (generation and transmission).

The DISCOMs lose ₹0.93 (~$0.011) for every kWh of energy, which means most DISCOMs are perennially dependent on loans for day-to-day operations and struggle to recover the cost of energy supply. Aggregate technical and commercial losses of DISCOMs, however, declined to ~17% in the financial year 2021-22 from 22.32% in FY 2020-21, according to the data published by the Ministry of Power. ***Source***

India's power demand inches closer to 200 GW again

India met a peak power demand of 198.3 gigawatts (GW) on May 10, up from 196.2 GW that was met a day before on May 9. The demand which could not be met on the day, or the peak demand deficit, decreased to 512 megawatts (MW) from 2,348 MW on May 9. The share of renewable energy sources (wind, solar and hybrid) in the total energy generation on May 10 was 10.37 percent. The share of RE along with hydropower, nuclear and others was 20.11 percent, data showed.

Power demand is expected to further climb this week as the India Meteorological Department (IMD) said a heatwave is likely to make a comeback in most parts of India after days of pleasant weather. The IMD stated that parts of Rajasthan, Uttar Pradesh and central India are expected to record temperatures as high as 45 degrees Celsius. Delhi and its neighbouring areas are likely to witness temperatures above 40 degrees Celsius.

Unless there is a drastic change in the weather, India's peak power demand is likely to again cross 200 GW in a day or two. Data showed that between April 1 to May 10, the daily peak demand breached the 200-GW mark in 9 days. With the rise in the overall demand, trade volumes in the power exchanges, except the high-price segment, have also increased.

On April 18, when large parts of the country were reeling under heat-wave conditions, the peak electricity demand that was met was 215.88 GW (215,882 MW), a record high so far. In 2022, the highest peak demand that was met was 212 GW (211,856 MW) on June 10. The summer of 2022 was marked by intense heatwaves that pushed up electricity demand from industries as well as households and a coal shortage led to outages in several parts of the country.

To avoid a repeat this season, the Power Ministry has taken measures such as mandating all imported coal-based thermal plants to operate at full capacity. The ministry expects peak demand to touch 230GW this summer and Power Minister RK Singh told Moneycontrol the country was prepared to meet the demand.

The coal stocks' situation continues to be "manageable", as of now, data showed. Of the 165 domestic coal-based thermal power plants in the country, 28 had critical stocks as on May 10. Last year at this time, the number of such plants was around 96. About 33 million tonnes (MT) of coal are stocked at thermal power plants. Coal stock is said to be at a critical level when power plants have less than 25 percent of the normative 26 days of fuel with them.

A report by CRISIL Ratings released on May 8 also stated that this year, the coal supply situation has fared much better. "Overall despatch of coal to end users increased 11.6 percent on-year to 80.35 MT in April 2023. Despatches made to power plants were up 6.6 percent to 65.41 MT in the same period. The increase in domestic supply, and the mandate to blend 6 percent of requirement with imported coal in the first half of fiscal 2024, has led to adequate buffers at thermal power plants this time," the report stated. ***Source***

Power ministry panel outlines roadmap to develop electricity market

A power ministry-constituted panel has suggested a roadmap outlining the interventions for the near, medium, and long term for the development of the electricity market. The interventions suggested by the panel include setting up a mechanism to monitor whether adequacy of supply is being maintained by the state utilities, enhancing the efficacy of the Day-ahead Market, introducing a market-based mechanism for secondary reserves, and implementing 5-minutes based metering, scheduling, dispatch, and settlement.

The proposed changes also include demand response and aggregation, which could reduce reserve requirements and lower electricity costs, according to a power ministry release. There will be strengthening of market monitoring and surveillance activities to keep track of participation and prevent price volatility. A regional-level balancing framework for deviation management will be implemented which would result in reduction in deviation penalties for the States at the ISTS level and consequently lower the reserve requirements.

The ministry constituted a Group for “Development of Electricity Market in India” under the chairmanship of S Power Secretary Alok Kumar with representation from Ministry of Power, Ministry of New & Renewable Energy, Central Electricity Authority, Central Electricity Regulatory Commission, Grid Controller of India (Grid-India) along with state governments. The Group presented the report to Union Minister of Power and New & Renewable Energy, R. K. Singh, a power ministry statement said.

The Group proposed solutions to address key issues, including the dominance of inflexible long-term contracts, harnessing the inherent diversity of a large and synchronous grid and the need for Resource Adequacy planning in Centre and States. Issues like reduction in system inefficiencies through lesser reliance on self-scheduling, increasing share of renewables in the overall energy mix, encouraging market participation for renewables, and firmness in procurement of ancillary services through well-developed ancillary services market also sought to be addressed by the group.

The solutions are aimed at creating an efficient, optimal, and reliable market framework to enable the energy transition and integration of renewable energy into the grid. The Group has outlined the roadmap and specific recommendations in the redesign of the Indian electricity market of the future. India's electricity markets are set to undergo significant changes in the shift towards renewable energy.

Singh said the proposed reforms are crucial to meeting India's renewable energy targets, and will also create a conducive environment for investment in renewable energy. The changes will enable better grid integration of renewable energy and pave the way for a cleaner, greener future.

Singh said that India’s energy transition towards renewable energy has further highlighted the need for enabling operational and electricity market developments to operate under a new energy order. The minister also said that we need to find out our own solutions instead of depending on the practices being followed in other countries. “India has been in forefront of taking timely interventions and was able to

keep electricity prices in check during the energy crisis in last one year whereas electricity prices shot up many times in electricity markets of many developed countries," Singh added.

The Minister emphasized on the need of ensuring procurement of most efficient power generation capacity while designing the capacity contracts and also agreed with the recommendations of having long term PPAs (Power Purchase Agreements) of 12-15 years duration now onwards. The Union Minister also directed to immediately undertake development of new RE capacity based on Contract for Difference (CfD) methodology in order to ensure competition and transparency. He directed that the power exchange clearing engine may be validated by the CERC.

According to the latest data for 2022-23, the total traded volume in the Indian electricity market was 1,02,276 MU (million units), which represents only a small portion of the energy generated from all sources (including RE) of 16,24,465 MU. The peak demand for electricity in 2022-23 was 215.8 GW, and it is expected to increase to 335 GW by the year 2029-30.The Ministry of Power's initiatives towards electricity market reforms, coupled with the proposed interventions by the Group for Development of Electricity Market in India, will transform India''s electricity markets and help the country achieve its energy goals in a sustainable manner. ***Source***

Niti Ayog Panel Recommends Govt To Allowing Foreign Investment In Nuclear Power Industry: Report

A Niti Ayog panel has recommended that the government consider lifting its ban on foreign investment in its nuclear power industry. The news agency Reuters, citing two government sources, reported that as a part of the cleaner energy push, the government is considering overturning a ban on foreign investment in its atomic sector and allowing greater participation by domestic private firms.

The recommendation came from a government panel, set up by the think-tank Niti Aayog. Under India's Atomic Energy Act 1962, the government plays a central role in developing and running nuclear power stations. Domestic private companies are allowed to participate as "junior equity partners" by supplying components and helping build them.

The consolidated FDI Policy of puts atomic energy on the list of prohibited sectors. However, there is no restriction on FDI in the nuclear industry for manufacturing equipment and providing other supplies for nuclear power plants and related other facilities.

According to the report, Niti Ayog's panel has recommended changes in both the act so that both domestic and foreign private companies can complement nuclear power generation by public companies. The aim is to reduce carbon emissions and nuclear is in focus because it can supply energy 24/7, unlike solar energy, the officials told Reuters.

The report noted that the Department of Atomic Energy has earlier said that various foreign companies such as Westinghouse Electric, GE-Hitachi, Electricite de France, and Rosatom have expressed interest in becoming involved in India's nuclear power projects as technology partners, suppliers, contractors, and service providers.

The officials told Reuters that the emphasis is on private participation through small modular reactors (SMRs) to fast-track nuclear energy generation. Currently, it accounts for only 3 per cent of India's total power production. Factory-built and ready-to-shift, each SMR produces up to 300 megawatts (MW) and requires less capital, time, and land than conventional reactors. They can also safely be deployed in

populated areas, the officials said. In India, Nuclear Power Corporation of India Ltd. (NPCIL) and Bharatiya Nabhikiya Vidyut Nigam are the only two companies responsible for generating nuclear power. However, government-controlled companies such as Thermal power company NTPC and oil marketing firm Indian Oil Corp have partnered with NPCIL to participate in nuclear power.

Last year in December, Minister of State in the Department of Space and Department of Atomic Energy Jitendra Singh said the share of nuclear power in the total electricity generation in the country was about 3.1 per cent in 2020-21.

“The net-zero targets are expected to be met through a combination of various clean energy sources, including nuclear power. In this context, the present nuclear power capacity of 6,780 MW is planned to be increased to 22,480 MW by 2031 on progressive completion of projects under construction and accorded sanction. More nuclear power reactors are planned in future,” Singh had said.

In the same month, the atomic energy department held closed-door consultations with domestic and global industry players who showed significant interest, one of the officials said. "With the right policy push, we see private sector taking up significant deployment in the country," said the official.

The recommendations will next be submitted to Modi's office, said the officials. Adding that the panel has also recommended replacing old coal-based plants with SMRs, amid a proposal to amend its electricity policy to not add any new coal-fired power plants. As a signatory to international conventions on nuclear safety, India will need to ensure that private companies adhere to the established standards. The country currently imports uranium fuel for its nuclear plants from Russia, Kazakhstan, Uzbekistan, France, and Canada through bilateral agreements. ***Source***

Electricity prices on exchanges decline

New Delhi: The price of electricity on the exchanges has declined in the first week of May in tandem with easing temperatures. According to data from the Indian Energy Exchange (IEX), the average price in the day-ahead market in April was above ₹5 kWh/unit in April while so far in May, it has been around ₹3 per kWh. The fall in prices comes on the back of the recent cooling of temperatures amid rainfall in parts of the country.

“The average daily prices were in the range of ₹6.20-7.40 in the second and third weeks of April. However, the widespread rains leading to cooler weather conditions led the prices to drop significantly since the last week of April. In the last week of April, the average day-ahead market price was ₹4.03/unit," said Rohit Bajaj, head, business development, IEX.

He said that on 1 May, prices dropped to as low as ₹2.84 per unit on May and that the average price in the first week of May was ₹3.39/unit. Compared to April, when prices hit the ₹10 per unit price cap on a regular basis, the frequency of prices touching the ceiling has also reduced in the first week of May. “There were just four hours in the entire week when the price reached the ₹10 per kWh in the Day ahead market," Bajaj said.

Naveen Singh, head of business development at Hindustan Power Exchange (HPX) said, “The frequency of day-ahead market prices touching ₹10/kWh is negligible in the first week of May." Peak power demand has come down from the near-record levels reached in April to well below the 200 GW mark. According to the latest data from the Grid Controller of India, the peak power demand on 7 May was 180.377 GW.

"Owing to the change in weather conditions across the country, the demand has fallen significantly over the past few days. The overall peak demand during April 2023 has been 216.87 GW, as opposed to a projected peak demand of 229 GW (for April-May) by the ministry. Even from an exchange perspective, we have seen a huge dip in daily demand across all the power market segments," Singh said.

Bajaj of IEX noted that the overall electricity demand dropped by around 2% in April from the year-ago month. A report by Crisil Ratings said that along with the government's measures to ensure coal supply during the peak demand period of April-May, ample rains last month also freed up the need for coal at power plants to meet the imminent increase in power demand this summer.

However, going ahead, rising temperatures means power demand is expected to rise, sector experts said. Naveen Singh of HPX said that the average market clearing price touched 5.2 per unit. "The start of the second week has already seen prices touching ₹10/kWh during the peak hours," he said. ***Source***

The consumption aspect of energy transition story

India announced five national goals at the UN Climate Change Conference in Glasgow (COP26) regarding its energy transition. Achieving a reduction in emission intensity by 45% as compared with 2005 levels by the end of this decade and achieving carbon neutrality by 2070 are the overarching ones. The other three goals of achieving 50% of power generation capacity from non-fossil fuels, 500 GW of non-fossil fuel-based capacity and a reduction of 1 billion tonnes of CO_2 emissions by 2030 are in a way subsidiary goals.

Recently published IPCC Synthesis Report has drawn worldwide attention to the urgency of accelerating energy transition efforts so that the world is able to avoid disastrous consequences of climate change due to the rise in atmospheric temperature. If we look at the contribution of India in historical emissions and the fact of per-capita emissions in India being just close to one-third of the world average, India's track record in accelerating its energy transition stands out globally.

India has done more than it was expected to do according to principle of common but differentiated responsibilities - a key feature of Paris Agreement. Overall, India's strategy and progress in terms of energy transition goals by 2030 appear to be sound and have a high confidence level. India is likely to surpass its declared goals for this decade if it addresses a few remaining challenges.

Energy transition in this decade could be discussed in two parts, the supply of energy and the consumption side. On the supply side, concerns have been expressed from various quarters regarding the share of coal in power generation. The share of coal-based generation of electricity in India is planned to slashed from about 73% in FY22 to less than 55% in FY30. A detailed action plan has been prepared by the Central Electricity Authority. The most significant intervention is aggressively increasing the share of renewable energy in power generation.

While so much public attention is being paid to the supply side, it is important to note that almost half of our success in energy transition in this decade would depend on implementing consumption-side efficiency or fuel switch initiatives. One rough projection is that out of a reduction of about 740 million tonnes (MT) of emissions per year by 2030 from the consumption side, over 300 MT reduction would come from the industrial sector. In this, about half would come from the steel sector and another about 40% would be contributed by cement, aluminium, paper & pulp and refinery sectors. India is well poised to 'deepen and widen' its flagship PAT Programme. Reduction of emissions from the industrial sector could be further accelerated through emission intensity reduction targets on industrial consumers under the recently amended Energy Conservation Act and a quick roll-out of India Carbon Market.

The next major contribution to the reduction of emissions on the consumption side is projected to come from buildings, both commercial and residential. Close to 200 MT per annum reductions could easily come from the buildings sector. Over half of it could be achieved by further pushing the usage of super-efficient energy appliances like air conditioners. India has a successful Standards and Labelling Programme. India Cooling Action Plan (ICAP) is also being implemented. One of the key objectives of ICAP is the reduction of cooling energy requirements by 25% to 40% by FY38 as compared with FY17 levels.

Implementation is targeted to result in electricity savings of over 300 billion units per year. The remaining part of the reduction in emissions from the buildings sector would need a little more effort in revising the Energy Conservation Buildings Codes (ECBC) as Energy Conservation and Sustainable Buildings Codes. We also need to work closely with state governments for their time-bound implementation through revised building byelaws of our urban local bodies.

The third major sector is transport which is also likely to contribute to a reduction of close to 200 MT per annum. Electric mobility may contribute around 35-40 MT of production per annum. However, the most significant reduction can come from Net Zero railways and the much-desired modal shift of freight traffic from road to rail and from road to coastal shipping. Modal shift is proving to be a real challenge. While our national policy is to increase the share of freight traffic by rail, on the contrary, the share of freight traffic by road has been going up and the share of traffic by rail has been declining. It is estimated that about 200 kg of CO2 is emitted for ten thousand gross tonne-km haulage through road while it goes down to less than 50 kg if we use electrified rail traction. We need to quickly enhance our capacity to run more freight trains with assured punctuality standards and rationalised freight charges to succeed in reversing the freight traffic modal share distribution. Promoting coastal shipping for the transportation of bulk commodities like coal also needs to be promoted by making suitable policy interventions for bringing down its costs and improving logistics efficiency under PM Gati Shakti. ***Source***

DERC seeks figures from discoms to fix 2023-24 power tariff

The Delhi Electricity Regulatory Commission (DERC) has asked power distribution companies and other electricity utilities to submit their annual revenue requirement (ARR) figures by May 21 to help it initiate the procedure to determine the power tariff for the 2023- 24 fiscal year.

Sources said power distribution companies, generation companies and transmission licensees have already filed their petitions for approval of the true-up of expenses for financial year 2021-22. "Once we have the ARR and tariff petition from the discoms, we will upload them in the public domain to invite suggestions and objections. After conducting public hearings we will finalise the tariff order for the 2023-24 financial year," said a DERC official, requesting anonymity.

Generation companies Indraprastha Power Generation Company Limited and Pragati Power Corporation Limited, transmission licensee Delhi Transco Limited, and distribution licensees New Delhi Municipal Council, BSES Rajdhani Power Limited, BSES Yamuna Power Limited and Tata Power Delhi Distribution Limited file their petitions for approval of true-up of expenses of the previous financial year, ARR and tariff for the upcoming financial year before the DERC usually in the month of March.

It is incumbent on the regulatory commission to prepare and upload an executive summary of these petitions and invite comments and suggestions from consumers and other stakeholders before

conducting public hearings and finalising the tariff order for each financial year. It was probably for the first time in 2022-23 that the DERC completed the entire exercise but did not announce the tariff order.

"The power tariff order for the last fiscal initially got delayed due to some court cases and technical reasons, then because of civic elections, and later the retirement of the chairperson and one member," said an official, requesting anonymity. Sources said that as per the direction of the Union ministry of power in 2021, all state power regulators should issue tariff orders before April 1 of a financial year. The ministry also said that tariff orders should be cost reflective. The DERC issued the tariff order for FY 2021-22 in September 2021.

There has been no tariff hike in Delhi after 2014. In its last tariff order of 2021-22, the DERC had increased the pension surcharge from 5% to 7%, leading to a marginal increase in bills, but there was no change in the per unit charge consumption of electricity. While announcing the power tariff in September 2021, the DERC had said that it did not see any "good reason" to increase electricity charges. ***Source***

Power Watch: India's peak power shortage hits 2,348 MW as demand rises

India met a peak power demand of 196.2 gigawatts (GW) on May 9. The demand which could not be met on the day, or the peak demand deficit, increased to 2,348 megawatts (MW) from 1,855 MW on May 8. The share of renewable energy sources (wind, solar and hybrid) in the total energy generation on May 9 was 10.4 percent. The share of RE along with hydropower, nuclear and others was 20.6 percent, data showed.

Last year, the peak demand that was met on May 8 was 198 GW and the deficit was 754 MW. Power demand is expected to further climb this week as the India Meteorological Department (IMD) said a heatwave is likely to make a comeback in most parts of India after days of pleasant weather. The IMD stated that parts of Rajasthan, Uttar Pradesh and central India are expected to record temperatures as high as 45 degrees Celsius. Delhi and its neighbouring areas are likely to witness temperatures above 40 degrees Celsius.

On May 8, the peak demand that was met was 191.6 GW, last year, the same was 189.2 GW. On May 7 this year, the peak demand met was 180.3 GW. On May 6, it was 185.6 GW, while on May 5, the same was 184.35 GW. Until May 7, the power demand remained lower than last year in the same period.

The reduction in demand this year during this period has been attributed to rains and thunderstorms in several parts of the country, leading to a drop in temperature that was lower than normal for this time of year. Normally, North India sees high temperatures and even heatwaves at this time, and the government had predicted the peak power demand to reach 230 GW this April. On May 1, India experienced a peak power demand of 159.7 gigawatts (GW), the lowest for this day in three years.

The coal stocks situation continues to be “manageable”, as of now, data showed. Of the 165 domestic coal-based thermal power plants in the country, 29 had critical stocks as on May 7. Last year at this time, the number of such plants was around 96. About 33 million tonnes (MT) of coal are stocked at thermal power plants.

Coal stock is said to be at a critical level when power plants have less than 25 percent of the normative 26 days of fuel with them. A report by CRISIL Ratings released on May 8 also stated that this year, the coal supply situation has fared much better. "Overall despatch of coal to end users increased 11.6 percent on-year to 80.35 MT in April 2023. Despatches made to power plants were up 6.6 percent to 65.41 MT

in the same period. The increase in domestic supply, and the mandate to blend 6 percent of requirement with imported coal in the first half of fiscal 2024, has led to adequate buffers at thermal power plants this time," the report stated. ***Source***

Transmission charges payable by DICs for the billing month of May 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.

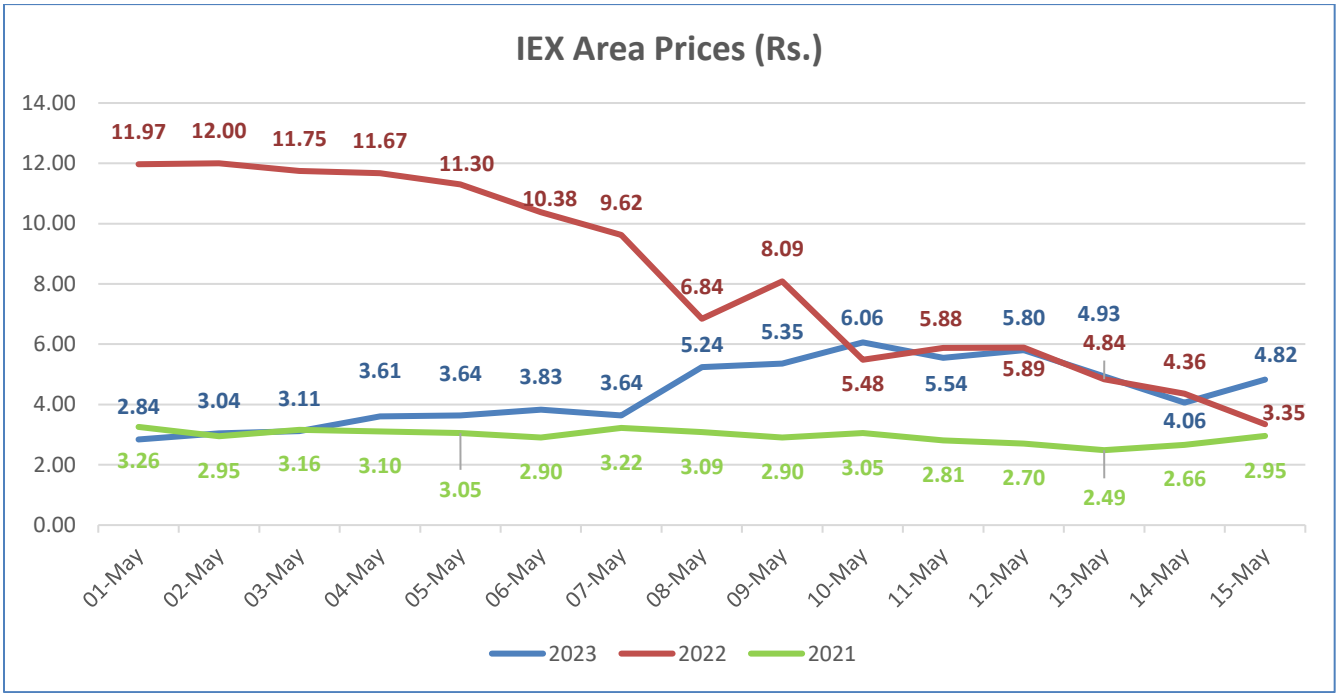
Transmission Charges for Short Term Open Access (STOA)			
Sl. No.	**State**	**Region**	**STOA rate (paise/kWh)**
1	Delhi	NR	46.85
2	UP	NR	48.59
3	Punjab	NR	53.13
4	Haryana	NR	60.17
5	Chandigarh	NR	48.14
6	Rajasthan	NR	53.13
7	HP	NR	46.56
8	J&K	NR	45.77
9	Uttarakhand	NR	54.11
10	Gujarat	WR	48.29
11	Madhya Pradesh	WR	48.23
12	Maharashtra	WR	61.67
13	Chhattisgarh	WR	41.38
14	Goa	WR	48.11
15	Daman Diu	WR	52.97
16	Dadra Nagar Haveli	WR	52.97
17	Andhra Pradesh	SR	90.59
18	Telangana	SR	65.09
19	Tamil Nadu	SR	56.53
20	Kerala	SR	61.79
21	Karnataka	SR	62.07
22	Pondicherry	SR	50.94
23	Goa-SR	SR	49.44
24	West Bengal	ER	45.79
25	Odisha	ER	53.09
26	Bihar	ER	42.77
27	Jharkhand	ER	48.85
28	Sikkim	ER	45.14
29	DVC	ER	46.99
30	Bangladesh	ER	37.82

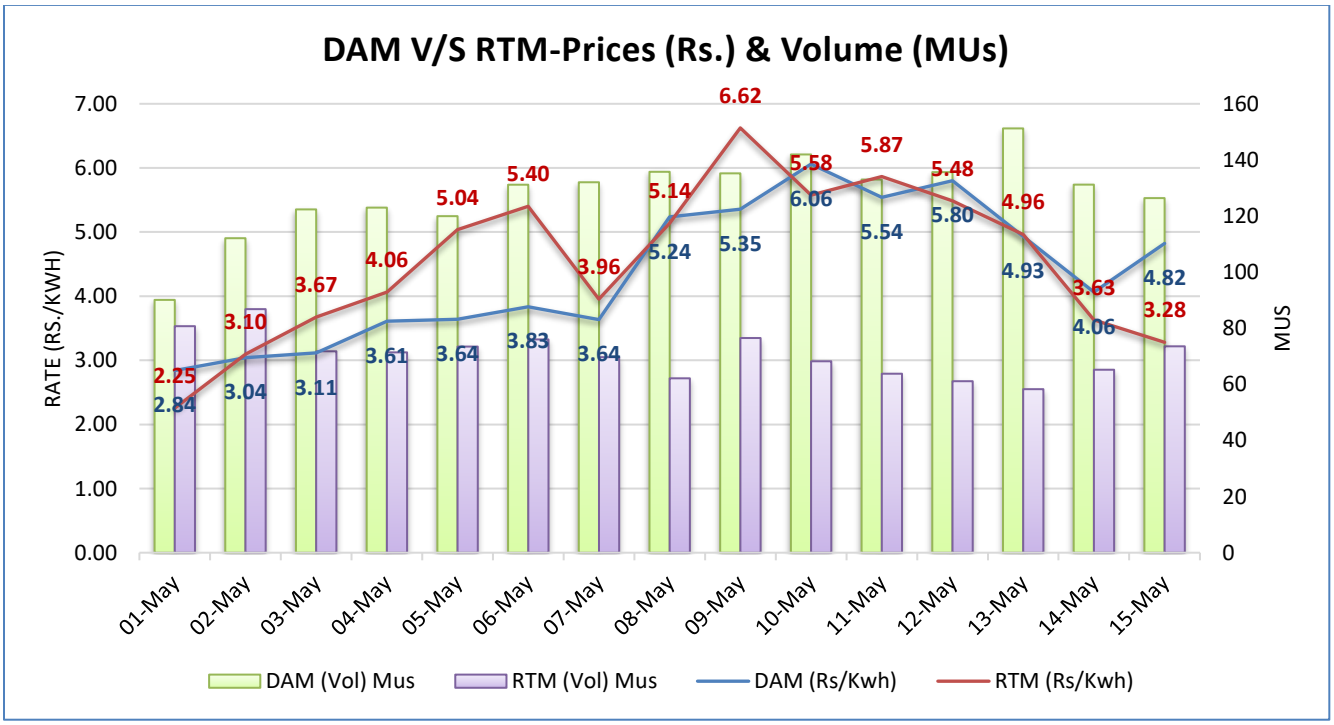
31	Arunachal Pradesh	NER	46.32
32	Assam	NER	43.26
33	Manipur	NER	45.06
34	Meghalaya	NER	46.04
35	Mizoram	NER	43.82
36	Nagaland	NER	57.54
37	Tripura	NER	48.77

Bilateral Tender Results: -

Sl. No.	Tender Quantum (MW)	Supply Period	Time Blocks (Hrs.)	Price (Rs./kWh)	LOI Status
HPSEBL/Short/23-24/RA/37					
1	27	16.10.2023 to 22.10.2023	00:00 to 24:00	6.24 - 6.25	Awaited
2	27	23.10.2023 to 31.10.2023	00:00 to 24:00	6.24 - 6.25	
3	67	01.11.2023 to 07.11.2023	00:00 to 24:00	6.48	
4	128	08.11.2023 to 15.11.2023	00:00 to 24:00	6.48 - 6.50	
5	101	16.11.2023 to 22.11.2023	00:00 to 24:00	6.48 - 6.50	
6	134	23.11.2023 to 30.11.2023	00:00 to 24:00	6.46 - 5.00	
7	168	01.12.2023 to 07.12.2023	00:00 to 24:00	6.48 - 6.50	
8	174	08.12.2023 to 15.12.2023	00:00 to 24:00	5.99 - 6.00	
9	174	16.12.2023 to 22.12.2023	00:00 to 24:00	6.48 - 6.52	
10	201	23.12.2023 to 31.12.2023	00:00 to 24:00	5.99 - 6.50	
11	208	01.01.2024 to 07.01.2024	00:00 to 24:00	6.69 - 8.00	
12	208	08.01.2024 to 15.01.2024	00:00 to 24:00	6.74 - 8.00	
13	208	16.01.2024 to 2.01.2024	00:00 to 24:00	6.75 - 8.00	
14	208	23.01.2024 to 31.01.2024	00:00 to 24:00	6.50 - 8.00	
15	208	01.02.2024 to 07.02.2024	00:00 to 24:00	6.75 - 8.00	
16	208	08.02.2024 to 15.02.2024	00:00 to 24:00	6.75 - 8.00	
17	174	16.02.2024 to 22.02.2024	00:00 to 24:00	6.95 - 8.00	
18	174	23.02.2024 to 29.02.2024	00:00 to 24:00	6.85 - 8.00	
19	134	01.03.2024 to 07.03.2024	00:00 to 24:00	7.00 - 8.00	
20	134	08.03.2024 to 15.03.2024	00:00 to 24:00	7.14 - 8.00	
21	108	16.03.2024 to 22.03.2024	00:00 to 24:00	6.85 - 8.00	
22	40	23.03.2024 to 31.03.2024	00:00 to 24:00	6.83 - 7.00	
PFC Consulting Limited/Short/23-24/RA/48 (UPPCL)					
1	900	01.06.2023 to 30.06.2023	00:00 to 06:00	8.00 - 14.00	LOI Issued
2	900	01.06.2023 to 30.06.2023	19:00 to 24:00	8.00 - 14.00	

IEX Price Trends





Weather (Estimated for next fortnight)

City	Max Temp	Min Temp	Precipitation (Probability)
DELHI	40	28	11%
MUMBAI	34	28	45%
KOLKATA	38	29	33%
CHENNAI	36	29	44%

(Source - Accuweather)

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