TATA POWER

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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

India's power deficit slips from 2% in April to 0.6% in June: R K Singh

Power deficit came down from 2 per cent in April to 0.4 per cent in May and 0.6 per cent in June despite significant rise in demand of electricity, Parliament was informed. In a written reply to the Lok Sabha, Power Minister R K Singh said electricity supplied grew 12.8 per cent in April 2022, as compared to the year-ago month, across India.

Power requirement, on the other hand grew 14.7 per cent in April on all-India basis, resulting in a deficit of 2 per cent. "The gap between energy requirement and energy supplied had been reduced considerably...to 0.4 per cent and 0.6 per cent during the months of May 2022 and June 2022 respectively, despite the significant increase in energy requirement during these months as compared to the corresponding months of May 2021 and June 2021," he said.

The gap between energy demand and supply is generally on account of factors other than inadequacy of power availability in the country e.g. constraints in distribution network, financial constraints, commercial reasons, forced outage of generating units etc, he explained. He said the coal stock available at the power plants monitored by the Central Electricity Authority (CEA) on daily basis was about 25.6 Million Tonnes (MT) as on March 31, 2022.

The stock depleted to 21.9 MT as on April 30, 2022 but increased during May and June and has now reached 28.7 MT as on July 21, 2022, which is sufficient for an average of 10 days at a requirement of 85 per cent Plant Load Factor (PLF), he added. In another reply, the minister said the cumulative inter regional transmission capacity of the National Grid as on June 30, 2022 is 1,12,250 MW, which is likely to get enhanced to 1,18,050 MW by the end of 2023.

In another reply, he said the industrial consumers consume the maximum electricity at 41.16 per cent followed by domestic consumer (25.77 per cent), agriculture consumers (17.67 per cent) and commercial 8.29 per cent. Singh also told the House that the power supply hours in urban areas and rural areas as on July 8, 2022, was 23.78 hours and 21.48 hours, respectively. ***Source***

HPX crosses 100 MUs of traded power in month one

Promoted by PTC India, BSE, ICICI Bank, HPX reached the milestone in 15 days of its commencement of operations The newly launched Hindustan Power Exchange Ltd. (HPX), that commenced operations on July 6, has made a bright start with the exchange claiming a 37% market share of the ‘contingency trading’ market within a fortnite of its launch.

Promoted by PTC India Ltd, Bombay Stock Exchange, and ICICI Bank, it crossed the100 MUs mark on July 20. HPX is now the number two exchange in the country in the segment it launched (Contingency). The peak volume achieved at HPX in first 15 days stands at 15 MUs while the daily average volume of 7.5 MUs has been registered at the HPX platform till date.

Backed by the latest technology and a series of innovative features, the third power exchange of India promises to offer speed, transparency, and better price discovery in the execution of trades. The exchange is presently offering trading in Contingency contracts, Green Contingency contracts, and Renewable Energy Certificates and launching Day Ahead Market, Green Day Ahead Market & Real Time Market soon. It is steadily increasing its product portfolio and is set to provide a wide range of contracts to address the demand of different segments of the electricity market.

HPX promoters – BSE, PTC and ICICI are the leading institutions in their respective field and such combination represents unique blend of expertise and skillset. Apart from the three promoters, several power sector entities including Government utilities, Independent Power Producers (IPPs), Power Traders, Distribution Utilities, sector consultants and others have reposed faith in the company through their investments in HPX. That has given HPX a real headstart in terms of its first cohort of users and clients, and it will not be upto the exchange to make the most of the opportunity, as it goes up against the market leader, IEX.

Based on the same technology platform that powers the Bombay Stock Exchange (BSE), HPX hopes to make significant strides in its first year itself, as India's power trading market continues to expand. ***Source***

Powering over People: Electricity Privatisation in India

The National Coordination Committee of Electricity Employees & Engineers (NCCOEEE), including PSI electricity affiliates, opposed the bill through a massive movement including protest meetings across the country on 19 July 2021, and handing over a memorandum against the bill to the power minister. The power minister had a discussion with the leadership and the bill was not placed in Parliament.

However, this year on the last day of the monsoon session of parliament the government tabled the bill leaving very little scope for the opposition to scrutinise the bill. The opposition and unions are pointing out two issues. First, there was no detailed statement of objects and reasons for the amended bill. Second, the absence of extensive discussion with stakeholders. Publicly owned utilities should be in the state's hands and not at the mercy of greedy capitalists and profit-oriented corporate companies, and therefore PSI will continue to campaign with its affiliates against the bill, which promotes privatization and proliferation of private profiteers.

There are thirteen State Governments already opposing the bill, and trying to entrench the promise made in the Indian Constitution of Cooperative Federalism in the functioning of Union and State Government. This is because electricity belongs to the concurrent list i.e., laws can be framed by both Union and State Governments.

In addition, several of the State Governments are at present giving subsidies to their farmers. Depriving them of subsidised electricity and increasing the tariff per unit of electricity endangers the livelihood of the farmers and increases the cost of farm products. This will mean consumers pay an increased amount not only on consumption of electricity but also inflated agricultural products. Last but the not the least, the electricity workers will be affected especially those who are not regularised.

The Union Government says that there will be multiple licenses system for private companies especially in distribution and as a result there will be more choices for consumers as in the case of internet and mobile connectivity. The choices in the long run will increase the tariff and not the other way around. The bill also provides for inserting a new section 60A in the Act to enable management of power purchase and cross-subsidy in case of multiple distribution licensees in the same area of supply. Since power purchase agreements are for 25 years and the possibility of reduction in the cost of electricity is not feasible. Additionally, the Union Government has created an ambiguous situation by promoting import of coal on one hand and promoting renewable energy on the other. But the intentions are clear, as both the import of coal and promotion of renewable energy are benefitting the private corporate giants as their sole aim is 'profit over people'.

The people of India have been witnessing the privatisation of several key public sectors including banking and airlines. In this mindless spree, one predominant question lingers in the minds of the electricity workers, farmers and the public consumers: will the publicly owned electricity sector in India end up being privatised and force the public to be "powerless"? ***Source***

Gencos can blend up to 20% coal without prior permission from beneficiaries: CERC

The Central Electricity Regulatory Commission (CERC) in a Suo Moto order said that Gencos can blend domestic coal with up to 20 per cent from alternative sources, including imported coal, without taking prior permission from beneficiaries (Discoms). The regulator, in its order, noted that to maintain adequate fuel stocks, coal from alternative sources is required to be arranged to avoid any power crises in the future. The directions issued by the commission will be applicable till October 31, 2022.

"Provided that in such a case, prior permission from beneficiaries shall not be a precondition for blending up to 20 per cent from alternate sources of fuel supply, including imported coal, subject to technical feasibility, unless otherwise agreed specifically in the power purchase agreement (PPA)," the CERC order said.

It will help to facilitate the availability of adequate coal in thermal power plants (TPPs) for smooth and uninterrupted power generation as well as aid Discoms in meeting their universal supply obligation to consumers.

CERC staff paper

The Power Ministry had issued directions to CERC to allow a higher amount of blending of up to 30 per cent with imported coal, subject to technical feasibility, without the requirement of prior consultation with the beneficiaries up to March 31, 2023, to maintain resource adequacy and a 24x7 supply to consumers. This was done in reference to the Central Electricity Regulatory Commission (Terms and Conditions of Tariff) Regulations, 2019, in the public interest.

Subsequently, in June, the CERC published a staff paper on the blending of imported coal with domestic coal to mitigate domestic coal shortages. It sought comments from stakeholders on "to what extent blending of imported coal can be allowed without permission or consultation of beneficiaries and to what extent the increase in energy charge rate (ECR) over and above the base energy charge rate, approved by the Commission for that year, can be allowed upon blending of imported coal."

Stakeholder suggestions

Responding to the staff paper, Gencos suggested that the restriction on the percentage of blending should be removed until the coal shortage situation is normalised. Alternatively, Gencos can also be allowed to procure imported coal equivalent to the shortfall in quantity as per coal requirement and available under the fuel supply agreement (FSA). Another suggestion made by the Gencos was that the cost of imported coal should be allowed to be recovered in full as a pass through; there should not be any cap on the ECR; and the clause pertaining to obtaining consent of beneficiaries should be removed.

Another suggestion made was that the percentage increase in ECR on account of imported coal is very high for the plants with lower ECR (pit head stations) compared to plants with higher ECR (non-pit head stations). The import of coal also requires additional working capital, new infrastructure, and certain modifications in plant design, which involve capital expenditure.

Discoms were of the view that the price of imported coal was volatile and would impact the ECR of power supply. The higher blending of imported coal would lead to an excessive increase in the ECR of power supply to discoms and result in a substantial increase in the cost of power for end consumers. The end users have an option of either paying exorbitantly high charges or else facingf load shedding and the same would impact the finances of the discoms.

Discoms also suggested that the percentage of coal blending may be reduced to the minimum possible extent and a cap may be levied for the cost of imported coal and should not be allowed to exceed 10 per cent. An increase in ECR of up to 30 per cent may also be allowed in a smooth manner so that consumers do not feel the tariff shock. ***Source***

Tamil Nadu government hikes power tariff, spares 1 crore consumers

The Tamil Nadu government announced a hike in the power tariff for TANGEDCO consumers proposing an increase of Rs 27.50 (per month) for those using up to 200 units and 65 paise per unit rise for railways and educational institutions. There would be no change in the scheme of providing free electricity of up to 100 units, Electricity Minister V Senthil Balaji said and claimed the increase was inevitable to reduce the mounting debts of the state power utility.

“The electricity tariff in Tamil Nadu has been proposed to increase without affecting the public. We hope to make up for the huge Rs 12,647 crore debt the TANGEDCO has acquired over the last decade,” Senthil Balaji told reporters here. There will be no change in electricity charges for 42 per cent of the households. “Consumers can opt for waiver of subsidised power of up to first 100 units power consumed if they do not require,” the Minister said.

A tariff of Rs 275 for 601-700 units consumed for a billing period, Rs 155 for 501-600 units, Rs 298.50 (per month) for above 500 units, Rs 147.50 (per month) for 301-400 units and a hike of Rs 27.50 (per month) has been proposed for those using up to 200 units. About 65 paise per unit hike is proposed for railways and educational institutions.

The powerlooms would continue to get the free power up to 750 units. He said the government was considering to strictly implement one electricity connection per household. “The Central government has written 28 times to the Tamil Nadu government insisting upon restructuring the power tariff. It said the State would not get central subsidy if the debts were not reduced,” Senthil Balaji said.

TANGEDCO was reeling under debts and it is not in a position to borrow as lending institutions were not forthcoming, he said. “Further, the Union Government has written to the Reserve Bank of India to stop extending loans to the State if the Tamil Nadu Generation and Distribution Corporation Ltd does not restructure its electricity tariff,” the Minister said. Hence, there was no option left but to enhance the tariff with the sole objective of saving the public power utility, he said and claimed that over one crore consumers would not be affected by this new tariff regime. The proposed tariff hike will be implemented only after being approved by the regulatory body, the Minister said. Source

Powering discom cash-flows: How ailing discoms can shore up revenues

This summer brought to the fore the need to improve the efficacy of our power systems. As a result of the heatwaves, peak power demand rose to 211 GW, the highest ever recorded. Multiple states witnessed severe power outages as the discoms were unable to consistently meet the peak demand. Amid the crisis, the ministry of power, through an amendment to the Electricity (Rights of Consumers) Rules, 2022, directed the discoms to ensure 24X7 supply in cities. To meet the enhanced demand,

discoms could have bought expensive power at the exchanges. However, their poor cash flows proved to be a hindrance.

According to a Power Finance Corporation (PFC) report, state discoms owed Rs 2,38,496 crore to power generation companies in March 2020, while pending payments from consumers stood at Rs 2,12,000 crore. Our public discoms lost Rs 0.35 on every unit supplied, totalling Rs 41,000 crore in 2019-20. Over the last few years, the Centre has been consistently trying to revive discoms' cash flows through schemes such as the financial restructuring plan and Ujjwal Discom Assurance Yojana, and has proposed yet another scheme to pay up discom dues in May. Mounting losses of discoms are mainly because of inaccurate energy accounting and billing, and inefficient collection from consumers. In 2019-20, discoms couldn't bill 15% of the energy injected into their grid. Another 7% of revenue was lost to poor recovery from consumers. Here are five steps that could help revive the financial health of discoms.

First, prioritise investments for capital infrastructure, technology upgradation, and tagging and metering in high loss incurring areas. Additionally, asset mapping and consumer indexing should be prioritised to know how many consumers are receiving supply from which pole, distribution transformer (DT), and feeder. This would help improve energy accounting. Further, locating the consumers on-site will help discom staff to provide quick redressal services and disconnect consumers with high unpaid dues. Discoms in Delh—Tata Power and BSES—have significantly improved billing efficiency by using GIS mapping and scaling up consumer indexing.

Second, ensure universal energy metering of all sub-stations, feeders, DTs, and consumers. As per the UDAY portal, about 37% of rural and 5% of urban DTs are still unmetered. Further, most agricultural connections and more than 10% of rural households are unmetered. To measure how much energy is lost to pilferage and during transit of electricity, all nodes in the network should be metered.

Third, ensure proper and regular meter-reading, bill generation, and bill distribution to each consumer. According to the India Residential Energy Survey (2020), about 10% of Indian households are either irregularly billed or have never received bills. Discoms could save on operational costs through SMS-based billing by updating consumers' mobile numbers in their databases. Further, consumers often complain of erroneous billing, which could be avoided through regular post-billing audits. Efficient post-billing audits have partially contributed to the operational improvement of discoms such as BSES Delhi and JVVNL, Jaipur.

Fourth, improve manpower capacity and overall infrastructure at the discom's sub-divisional offices. In states like UP and Haryana, two engineers in a sub-division typically manage a consumer base of 50,000, and look after billing, collection, supply maintenance, grievance redressal, and on-site disconnections. More on-ground manpower is critical to improve customer satisfaction along with billing and collection. One solution could be that discoms segregate the cadre for revenue-related operations from supply maintenance in local offices, like in Rajasthan and Bihar. Further, smart metering under Revamped Distribution Sector scheme would ease some manpower burden. However, discom staff should be trained and skilled to manage the digitalising grid with a specialised IT cadre.

Fifth, find a permanent solution for collection-related losses from consumers. As per PFC, an average consumer paid their bills to discoms in 160 days in March 2020. Ensuring reliable power supply, timely grievance redressal, and access to easy payment modes could help improve payment discipline. Discoms in UP, Odisha, and Maharashtra have made progress on this front by deploying women self-help groups and kirana shop owners as collection agents in rural areas, in addition to introducing online payment mechanisms. Finally, nudge government departments to explore prepaid supply and directly transfer electricity payments from the departmental budgets. In FY 20, unpaid electricity dues by

government departments and subsidies by state governments stood at Rs 97,000 crore. Unpaid subsidies worth Rs 6,365 crore further exacerbated the situation for discoms. Hence, state governments must transfer subsidies upfront.

The rules and regulations mandating the discoms to supply reliable power to the consumers already exist. Periodically, inefficient discoms could be penalised by regulators. In addition, regulators must also ensure that tariffs are reflective of the cost incurred by the discoms. If reviving cashflows isn't prioritised, then discoms would remain financially unviable. ***Source***

World's electricity demand growth slowing sharply as prices soar: IEA

The world's electricity demand growth is slowing sharply from its strong recovery the previous year as economic growth weakens and energy prices soar following Russia's invasion of Ukraine, International Energy Agency's (IEA) Electricity Market Report. Global electricity demand is expected to grow by 2.4 per cent in 2022 after last year's six per cent increase, bringing it in line with its average growth rate over the five years prior to the Covid-19 pandemic, the report said.

While electricity demand is currently expected to continue on a similar growth path into 2023, the outlook is clouded by economic turbulence and uncertainty over how fuel prices could impact the generation mix. Strong capacity additions are set to push up global renewable power generation by more than 10 per cent in 2022, displacing some fossil fuel generation. Despite nuclear's three per cent decline, low-carbon generation is set to rise by seven per cent overall, leading to a one per cent drop in total fossil fuel-based generation.

As a result, carbon dioxide (CO2) emissions from the global electricity sector are set to decline in 2022 from the all-time high they reached in 2021, albeit by less than one per cent. In the first half of 2022, average natural gas prices in Europe were four times as high as in the same period in 2021 while coal prices were more than three times as high, resulting in wholesale electricity prices more than tripling in many markets.

The IEA's price index for major global electricity wholesale markets reached levels that were twice the first-half average of the 2016-2021 period. Due to high gas prices and supply constraints, coal is replacing natural gas for power generation in markets with spare coal plant capacity, particularly in the European countries seeking to end their reliance on Russian gas imports. To secure energy supplies following Russia's invasion of Ukraine, some European countries have delayed coal phase-out plans and lifted previously imposed restrictions on coal.

Globally, coal use for power is expected to increase slightly in 2022 as growth in Europe is balanced by contractions in China, due to strong renewables' growth and only a modest rise in electricity demand, and the US, due to constraints on supply and coal power plant capacity. Gas power is expected to fall by 2.6 per cent as declines in Europe and South America outweigh growth in North America and the Middle East.

"The world is in the midst of the first truly global energy crisis, triggered by Russia's invasion of Ukraine, and the electricity sector is one of the most heavily affected," said IEA Director of Energy Markets and Security Keisuke Sadamori. "This is especially evident in Europe, which is experiencing severe energy market turmoil, and in emerging and developing economies, where supply disruptions and soaring fuel prices are putting huge strains on fragile power systems and resulting in blackouts.

"Governments are having to resort to emergency measures to tackle the immediate challenges, but they also need to focus on accelerating investment in clean energy transitions as the most effective lasting response to the current crisis." ***Source***

Coal India building up stocks to meet power sector demand: Government

State-run Coal India Ltd is building up stockpiles at its railway sidings, washeries and ports to ensure sufficient supply to thermal power plants, Union minister Pralhad Joshi said on July 20. Coal stocks at power plants have increased to 28.34 MT as of July 14 from 25.6 MT as of March 31, according to the Central Electricity Authority.

Coal India (CIL) "has already started building stock at its railway sidings along with goods shed and private washery sidings and ports," Coal Minister Pralhad Joshi said in a reply to a question in the Lok Sabha. With regard to Coal India's sidings, 1.8 million tonnes (MT) of coal has been stockpiled, 1.4 MT at goods shed, 0.95 MT at washeries and 1.39 MT at ports, the minister said.

CIL, which is one of the major suppliers of fossil fuel to the power sector, dispatched 152.49 MT of coal to the sector in the first quarter of FY'23, registering a growth of 19 per cent over the year-ago period. Thermal power plants faced acute coal shortages in April and May due to supply constraints and high prices of imported coal, which hit their power production.

The government in April attributed the power crisis largely to the sharp decline in electricity generation from different fuel sources and not due to the non-availability of domestic coal. ***Source***

India's gencos saw 92 lakh tonnes of coal import during April-June, says Power Minister

During the April-June period, India's power generating firms imported 92.07 lakh tonnes of coal, according to the Union Power Ministry. In a written response to the Lok Sabha, Union Power Minister RK Singh informed the House that the Ministry had advised all gencos to complete placement of awards for import of coal before May 31, 2022, to avoid trouble before the onset of the monsoon season.

"Ministry of Power (in April) advised Central Gencos, State Gencos and Independent Power Producers (IPPs) to import coal for blending purpose during 2022-23," Singh's reply said. Of the 92.07 lakh tonnes of coal imported during the April-June period, 57.17 lakh tonnes were imported by central gencos, 28.85 lakh tonnes were imported by IPPs and 6.05 lakh tonnes were imported by state gencos. State-owned power giant NTPC and the NTPC-JV (joint venture) imported 49.3 lakh tonnes of coal.

As of July 14, India's domestic stock is at 23.126 million tonnes - 40% of the stock requirement for July 2022 - down from 24.18 million tonnes on March 31. According to Singh, the all India average gap between energy requirement and supply for April-June was 1%. In another reply, the Power Minister informed the House that state gencos have been sanction a Rs 3,700 crore loan for the purchase of coal. Of that amount, Rs 1,800 crore is destined for the Maharashtra State Power Generation Company Ltd. ***Source***

Global 2021 coal-fired electricity generation surges to record high

The world's coal-fired generators produced a record 10,244 terawatt-hours (TWh) in 2021 surpassing the previous record of 10,098 TWh set in 2018 ("Statistical review of world energy", BP, July 2022). Coal-fuelled generation is on course to set an even higher record in 2022 as generators in Europe and Asia

minimise the use of expensive gas following Russia's invasion of Ukraine and U.S. and EU sanctions imposed in response.

By contrast, mine output was still fractionally below the record set between 2012 and 2014 because older and less efficient coal generators have been replaced by newer and more efficient ones needing less fuel per kilowatt.

Global coal mine production was 8,173 million tonnes in 2021 compared with 8,180-8,256 million a year between 2012 and 2014. But mine production is also likely to set a new record this year as the surging demand for coal-fuelled generation overtakes efficiency improvements.

COAL RESILIENCE

Coal's resurgence has confounded U.S. and EU policymakers who expected it to diminish as part of their plan for net zero emissions. Between 2011 and 2021, generation from coal grew more slowly (1.2% per year) than from hydro (2.0%), gas (2.8%), wind (15.5%) and solar (31.7%).

As a result, coal's share of total generation worldwide has declined 36.0% in 2021 from a recent peak of 40.8% in 2013. But the enormous growth in electricity demand (2.5% per year) ensured growing demand for all sources of generation. Coal production and generation is set to continue rising through at least 2027 as the rising demand for electricity overwhelms efficiency improvements in combustion and the deployment of gas and renewables as alternatives.

TURBOCHARGED

The rapid economic recovery after the pandemic has turbocharged these trends, boosting electricity demand and the dependence on coal-fired generation, and lifting coal consumption to a record high. Russia's invasion of Ukraine and the resulting reduction in gas exports has stimulated demand even further as generators try to minimise consumption of expensive gas and countries try to indigene's their energy supplies.

In Europe, governments are encouraging coal-burning generators to remain in service for longer rather than closing in case gas flows from Russia cease in winter 2022/23. Responding to shortages and security concerns, China and India are encouraging domestic miners to raise output to record levels to ensure adequate fuel stocks and cut their reliance on expensive imported coal and gas. China's coal production climbed to a record 2,192 million tonnes between January and June compared with 1,949 million in the same period a year earlier and 1,758 million before the pandemic in 2019.
India's production climbed to a record 393 million tonnes between January and May compared with 349 million a year ago.

FUEL SHORTAGE

Despite the rapid growth in domestic coal production in China and India, there is still a worldwide shortage of fuel, which has sent coal prices to their highest level in real terms for more than 50 years. U.S. and EU sanctions have intensified upward pressure on prices by re-routing Russian coal to Asia and coal from Australia and Indonesia to Europe, resulting in longer and more expensive voyages.

Coal is the bulkiest and most expensive commodity to transport relative to its value so longer voyages have a direct and significant impact on the landed price paid by power producers. Higher gas prices in Europe are also pulling coal prices up in their wake as coal-fired generators scramble to secure fuel in order to be able to run their units for as many hours as possible.

Front-month futures prices for gas delivered in Northwest Europe have climbed to €157 per megawatt-hour from €41 at the same point in 2021 while coal prices have risen to €53 from €16. If the northern hemisphere winter of 2022/23 is colder than normal, shortages of coal, gas and electricity are likely to become severe and are likely to force some form of energy rationing or allocation.
The global coal shortage is part of a wider shortage of energy evident across the markets for crude, diesel, gas and electricity.

In each case, the shortage stems from the strong cyclical rebound from the pandemic and has been intensified by Russia's invasion of Ukraine and sanctions imposed as a result.
Record prices are sending a strong signal to producers to increase output and to consumers to conserve as much fuel as possible. Like crude and diesel, however, rebalancing the coal market will likely require a significant slowdown in the major economies to ease the immediate pressure on inventories and give production time to catch up with consumption. ***Source***

Indian scientists extract record uranium from seawater that could power nuclear plants

As the world faces the effects of climate change, and pressure mounts to reduce emissions from fossil fuel-based energy sources, countries are looking at newer ways to switch to renewable, including shifting existing technologies to non-polluting methods. Now, a group of Indian researchers have demonstrated a way in which nuclear energy can go truly renewable. But wait. Isn't nuclear power a renewable source of energy? Well, kind of. Let us explain.

IS NUCLEAR ENERGY RENEWABLE?

Nuclear power, mostly used in the production of electricity, is widely considered to be a renewable source of energy. However, the raw material that is used to generate nuclear power through a process called fission is non-renewable. Nuclear power plants need a specific form of uranium called Uranim-235. Now, this is a depleting resource.

Uranium reserves found naturally are on a course to reach exhaustion within a century, which means that countries will have to look for alternatives to generate this critical element that powers nuclear plants across the world. The world at the moment has a nuclear reserve of 7.6 million metric tons.

THE ANSWER LIES AT SEA

In an attempt to address this worry, a group of scientists at the Indian Institute of Science Education and Research (IISER), Pune, attempted to extract uranium from seawater. Their attempts were successful and the findings were published in the journal Royal Society of Chemistry. "With rising global energy demand and environmental concerns associated with fossil fuels, sustainable energy supply to the global community remains a great challenge. Large-scale uranium extraction from seawater (UES) is widely considered as reconciliation to increasing global energy demand and climate change crises," the scientists said in their paper.

Researchers estimate that seawater contains 4.5 billion metric tons, nearly 1,000 times more uranium that conventional sources. But, with existing technologies, we are far from extracting this element from seawater cost effectively. Experts have said that uranium recovery from seawater is extremely challenging due to its very low concentration in comparison to the high abundance of interfering ions.

WHAT THE INDIAN SCIENTISTS DID

The team of researchers at IISER have developed a rare ionic macroporous metalorganic framework, which can effectively capture uranium. They managed to capture 95 per cent of uranium within two hours,

which is in sharp contrast to the other existing adsorbent. A proper absorbent combining the features of high capacity, excellent selectivity, and ultra-fast kinetics has been a long challenge.

Uranium reserves found naturally are on a course to reach exhaustion. (Photo: Getty)
They collected seawater from the Arabian Sea (Juhu beach), Mumbai for uranium extraction and the absorbent resulted in a record uranium uptake capacity of 28.2 mg per gram in only 25 days and "satisfies the remarkable uranium extraction from seawater standard only in 2 days compared to existing adsorbents including commercially available materials reported so far."
"Combined with exceptional selectivity, record capacity, ultrafast kinetics, and long service life, this material could be a potential candidate for the efficient extraction of uranium from natural seawater. The selective ion exchanged harvesting method introduces the concept of extracting uranium from natural seawater may lead to an unlimited supply of uranium at an economically affordable cost," Professor Sujit K. Ghosh, who was part of the study, told IndiaToday.in. ***Source***

Power Ministry asks states to formulate plans for biomass co-firing in power plants

The Ministry of Power has asked states to formulate time-bound plans to ensure the utilisation of biomass for co-firing in thermal power plants ahead of the Kharif harvest season to reduce stubble burning and air pollution. To address the issue of air pollution and to reduce the carbon footprint of thermal power generation, the Ministry of Power issued a revised policy in October last year for the use of agro residue-based biomass and mandated the use of five to seven per cent of biomass co-fired along with the coal for all thermal power plants.

Farm stubble burning plays a major role in air pollution across the country. A senior official told PTI that the power ministry had written a letter to all states and union territories to draft time-bound implementation plans to ensure the utilization of biomass to co-fire it with coal in their thermal power plants and in IPPs (independent power plants) from where power is being procured by states.

In the letter, the ministry further urged all states/UTs to take up the matter with their SERCs (state electricity regulatory commissions) for inclusion of biomass utilization in respective Tariff Regulations. This assumes significance because the air pollution level rises after the Kharif harvest season in autumn and winters. The stubble burning by farmers contributes to pollution to a great extent. In the letter, the ministry has highlighted that in the current context of the supply of coal to power plants, the significance of co-firing of biomass has increased considerably.

It has underlined the economic perspective added to biomass (available at a lower price) owing to the rising prices of imported coal. It has emphasized that co-firing of biomass pellets is not only environment-friendly but also an economical option for power utilities as compared to the blending of imported coal.
The ministry has said that full policy and regulatory support needs to be provided to this initiative. Ministry of Power (MOP) set up a National Mission on the use of Biomass in thermal power plants in July last year named as SAMARTH Mission. Biomass co-firing along with coal presents a viable solution to the stubble burning problem while affording multiple benefits like additional income for farmers, power generation, and reduction of dependence on coal. The ministry has reiterated that this initiative and the efforts of the Mission Directorate (SAMARTH) have made encouraging progress, which needs to be accelerated.

The CERC (Central Electricity Regulatory Commission) has provided specific provisions in its Tariff Regulations 2019 for co- firing of biomass in coal-based plants. These provisions which have encouraged central sector Gencos in co-firing biomass in their thermal power plants provide for capital expenditure on account of biomass handling equipment and facilities for co- firing in new projects.

These are provided that in the case of blending biomass with coal, the landed cost of biomass fuel shall be worked out based on the delivered cost of biomass at the unloading point of the generating station, inclusive of taxes and duties as applicable. The energy charge rate of the blended fuel shall be worked out considering consumption of biomass based on blending ratio as specified by Authority or actual consumption of biomass, whichever is lower, it provided. In September 2019, the Ministry of New and Renewable Energy had clarified that power generated from co-firing of biomass in thermal power plants is renewable energy and is eligible for meeting non-solar Renewable Purchase Obligation (RPO). ***Source***

Good news for UP residents, govt does away with Rs 7 tariff slab, check new electricity rates

In a slight relief to Uttar Pradesh consumers, the Uttar Pradesh Electricity Regulatory Commission (UPREC), released the new electricity tariff prices for the current fiscal year 2022–2023. The major change in the new tariffs is that the highest slab of Rs 7 per unit has been eliminated by the state government. The highest slab has now been capped at Rs 6.50 per unit. Now, even after consuming more than 500 units, consumers will have to pay their electricity bill at Rs 6.50 per unit, instead of Rs 7.

The commission has also made changes to other slabs as well. For instance, the 0-150 slab, which has electricity rates fixed at Rs 5.50 per unit, has now been fixed to 0-100. At the same time, the old slab of 151-300, under which consumers used to pay electricity bills at Rs 6 per unit, has now been fixed at 101-150 units. (ALSO READ: Taste candy and earn Rs 62 lakh! Too good to be true job offer has social media's attention)

Also, the government has changed the old range from 301-500 units to 151-300 units. Under this slab, customers have to pay electricity bills at Rs 6.50 per unit. (ALSO READ: ICICI Bank Q1 profit zooms 50% to Rs 6,905 crore) Meanwhile, in cities, domestic BPL families will have to pay a bill of Rs 3.00 per unit for up to 100 units. Also, an additional 10% cut in electricity prices for users has been declared under the purview of Noida Power Company.

The cost of electricity in rural areas would be Rs 3.35 per unit from 0 to 100, Rs 3.85 per unit from 101 to 150, Rs 5.00 per unit from 151 to 300, and Rs 5.50 per unit for units over 300. In contrast, rural domestic BPL families will pay three rupees for up to 100 units of power. For rural customers, the price of Rs 3.35 per unit for 0 to 100 units has not changed. ***Source***

Govt taking efforts to enhance coal supply to power plants: Minister

The government is making sustained efforts to enhance coal production and supply of coal to thermal power plants, Union Minister of Coal, Mines and Parliamentary Affairs Pralhad Joshi said.
In 2022-2023 (April 2022 to June 2022), all India average gap between the Energy Requirement and Energy Supplied was only one per cent. Gap between energy demand and supply is generally on account of factors other than inadequacy of power availability in the country, e.g. constraints in the distribution network, financial constraints, commercial reasons, forced outage of generating units, etc, the minister said in a written reply to a question in Rajya Sabha.

There is no shortage of coal in the country. The all-India coal production in the year 2021-2022 was 778.19 Million Tonne (MT) in comparison to 716.083 MT in the year 2020-2021. Further, in the current financial year (upto June'22), the country has produced 204.876 MT of coal as compared to 156.11 MT during the same period of last year with a growth of about 31 per cent, Joshi informed the upper house of the parliament.

The Government on May 4, 2016 allowed States to use their coal in any private generating stations (IPPs) selected through e-bidding process and take equivalent power. The methodology named flexibility in utilization of domestic coal (Case-4) has been issued on February 20, 2017 by Ministry of Power. Supercritical technology and Ultra Super-Critical Technology for thermal power generation having improved efficiency of thermal power stations have already been adopted. This will lead to a reduction in fossil fuel consumption and thereby reducing CO2 emissions.

As per Government approval, Annual Contracted Quantity (ACQ) per Mega Watt (MW) entitlement of all power plants, irrespective of age or technical parameters, shall be calculated based on normative station heat rate with upper ceiling of 2600 kcal/kwh. Accordingly, in view of efficient utilization of coal in efficient units, normative coal requirement of less efficient power plants with heat rate above 2600 Kcal/Kwh has been limited to coal corresponding to 2600 kcal/kwh, the minister said.

To address the issues of coal supplies to power sector, an Inter-Ministerial Sub Group comprising of representatives from Ministries of Power, Ministry of Coal, Ministry of Railways, CEA, CIL and SCCL meet regularly to take various operational decisions to enhance supply of coal to thermal power plants as well as for meeting any contingent situations relating to Power Sector including to alleviate critical coal stock position in power plants.

In addition to this, an Inter-Ministerial Committee (IMC) has been constituted comprising of Chairman, Railway Board, Secretary, Ministry of Coal, Secretary, Ministry of Environment, Forest and Climate Change and Secretary, Ministry of Power to monitor augmentation of coal supply and power generation capacity. Secretary, Ministry of New and Renewable Energy and Chairperson, CEA are co-opted as Special Invitees as and when required by the IMC. Coal dispatch from the captive coal blocks is also being monitored regularly.

Coal India Limited, the largest supplier of coal in the country, has dispatched 152.49 MT of coal to Power Sector in the first quarter of the current fiscal surpassing all the previous highs of the same period and achieving a growth of 19 per cent over last year same period.

Singareni Collieries Company Limited (SCCL) has dispatched 14.43 MT of coal to Power Sector in the first quarter of the current fiscal achieving a growth of 4.1 per cent over last year same period. As per Central Electricity Authority (CEA), coal stock at the power plants has improved from the level of 25.6 MT as on 31.03.2022 to 28.3 MT on 18.07.2022. ***Source***

Electricity generation from non-fossil fuel sources to account for more than 50% of capacity: Minister

Union Power and New & Renewable Energy Minister R K Singh said the country's electricity generation capacity will reach 820GW by 2030, including over 500GW from non-fossil fuel sources. In his message at the launch of a report of The Energy Resource Institute (TERI), Singh said: "By 2030, the total capacity for power production would be about 820GW. Out of that, more than 500GW will be non-fossil."

Pointing out that India has already started adding storage capacity to renewable energy, the minister said the government has come out with one of the largest bids on storage and is trying to bring down the storage cost by adding volume. He also emphasised on India's commitment to energy transition targets though the country has one of the lowest per capita emissions.

TERI released a roadmap charting the feasible pathways to achieving the ambitious decarbonisation targets. Apart from suggesting policies as well as technological interventions to achieve the 2030 goals, TERI's roadmap also calls for state leadership in the development of pumped storage plants and feed-in-tariff for solar generation.

Vibha Dhawan, Director General, TERI, said in the statement, "While India has the right policy regime in place, we need to adopt new energy storage solutions and technologies which bring stability and flexibility to the grid. We need collaborations for investing in research and development of new technologies." ***Source***

Transmission charges payable by DICs for the billing month of August'22

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	51.23
2	UP	NR	53.50
3	Punjab	NR	56.41
4	Haryana	NR	67.82
5	Chandigarh	NR	43.66
6	Rajasthan	NR	55.38
7	HP	NR	40.70
8	J&K	NR	42.63
9	Uttarakhand	NR	55.07
10	Gujarat	WR	42.14
11	Madhya Pradesh	WR	42.09
12	Maharashtra	WR	46.79
13	Chhattisgarh	WR	37.35
14	Goa	WR	46.70
15	Daman Diu	WR	46.31
16	Dadra Nagar Haveli	WR	46.31
17	Andhra Pradesh	SR	54.67
18	Telangana	SR	39.31
19	Tamil Nadu	SR	40.68
20	Kerala	SR	42.07
21	Karnataka	SR	45.89
22	Pondicherry	SR	38.68

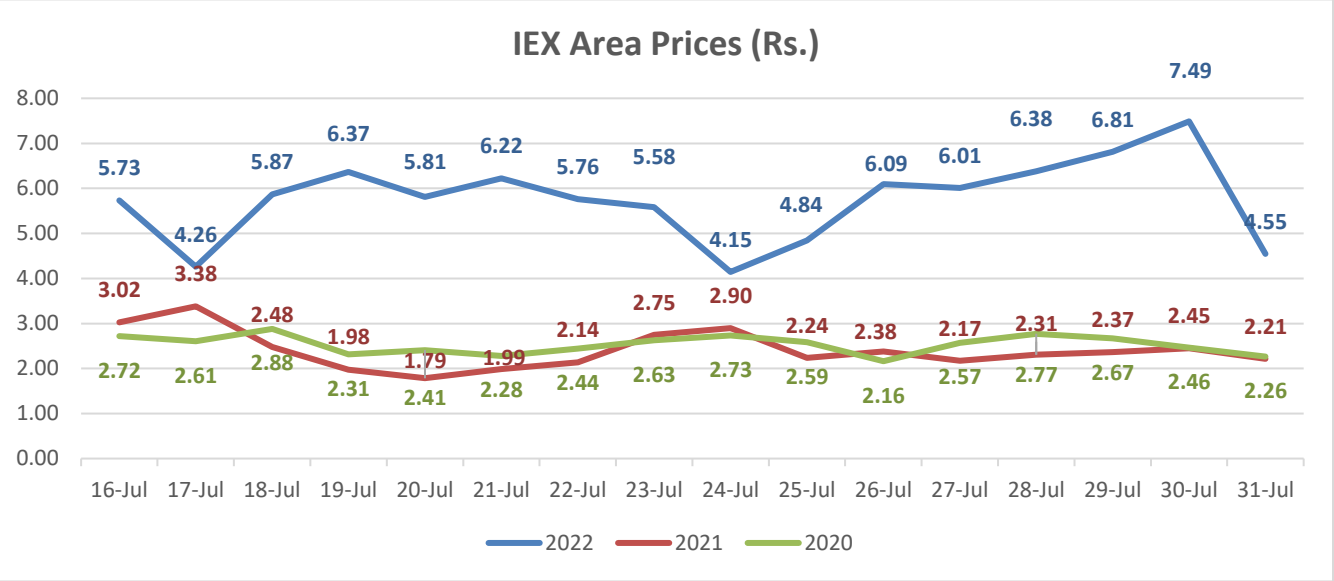
23	Goa-SR	SR	31.88
24	West Bengal	ER	48.95
25	Odisha	ER	48.46
26	Bihar	ER	42.07
27	Jharkhand	ER	49.95
28	Sikkim	ER	37.33
29	DVC	ER	43.67
30	Bangladesh	ER	35.50
31	Arunachal Pradesh	NER	41.77
32	Assam	NER	46.72
33	Manipur	NER	38.73
34	Meghalaya	NER	40.04
35	Mizoram	NER	39.24
36	Nagaland	NER	55.40
37	Tripura	NER	46.35

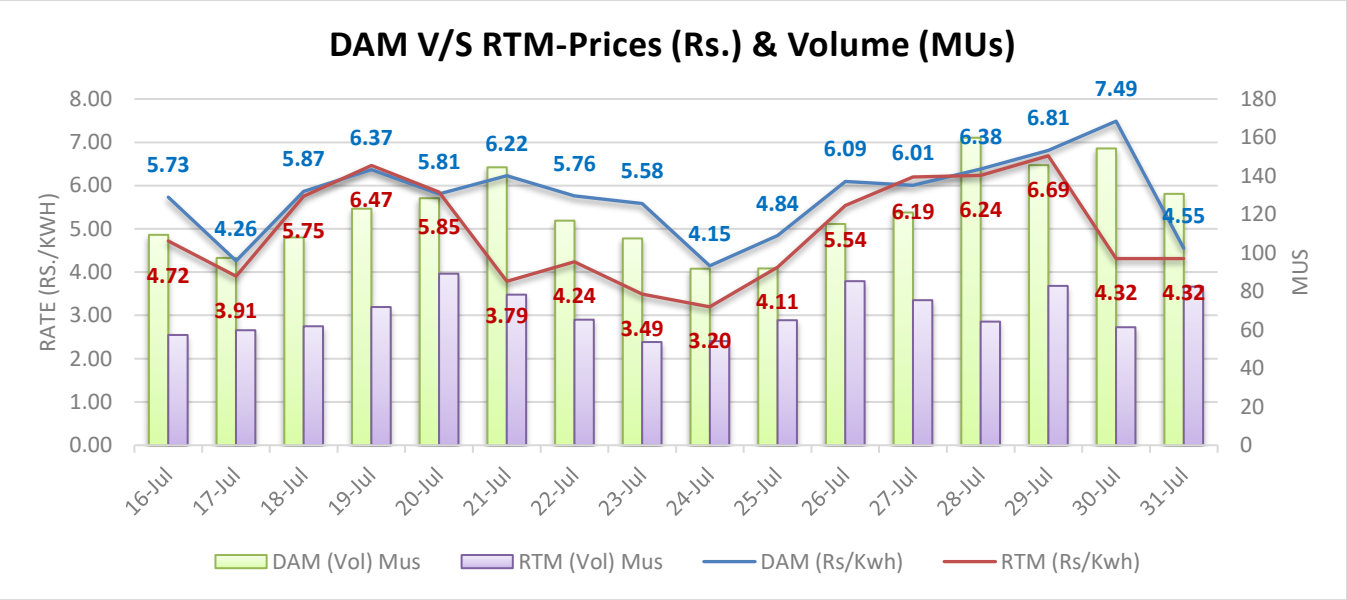
Bilateral Tender Results: -

Sl. No.	Tender Quantum (MW)	Supply Period	Time Blocks (Hrs.)	Price (Rs./kWh)	LOI Status
UPCL/Short/22-23/RA/110					
1	50	15.07.2022 to 31.07.2022	00:00 to 24:00	7.79	LOI not issued
2	50	01.08.2022 to 31.08.2022	00:00 to 24:00	7.24	
3	100	01.09.2022 to 30.09.2022	00:00 to 24:00	7.24-7.25	
4	250	01.10.2022 to 31.10.2022	00:00 to 24:00	8.82-9.52	
5	300	01.11.2022 to 30.11.2022	00:00 to 24:00	8.04-9.52	
6	600	01.12.2022 to 31.12.2022	00:00 to 24:00	8.06-12.00	
7	600	01.01.2023 to 31.01.2023	00:00 to 24:00	8.99-12.90	
8	500	01.02.2023 to 28.02.2023	00:00 to 24:00	8.99-12.00	
9	400	01.03.2023 to 31.03.2023	00:00 to 24:00	8.99-12.90	
KSEBL/Short/21-22/RA/106					
1	250	01.08.2022 to 31.08.2022	00:00 to 24:00	6.24-14	Awaited
2	250	01.09.2022 to 30.09.2022	00:00 to 24:00	7.80-9.00	
3	250	01.10.2022 to 31.10.2022	00:00 to 24:00	8.06-8.30	
4	350	01.11.2022 to 30.11.2022	00:00 to 24:00	7.27-7.28	
5	350	01.12.2022 to 31.12.2022	00:00 to 24:00	7.27-7.28	
6	350	01.01.2023 to 31.01.2023	00:00 to 24:00	7.80-7.94	
7	500	01.02.2023 to 28.02.2023	00:00 to 24:00	7.80-7.94	

8	500	01.03.2023 to 31.03.2023	00:00 to 24:00	8.03-8.83	
9	500	01.04.2023 to 30.04.2023	00:00 to 24:00	7.95-8.83	
10	500	01.05.2023 to 31.05.2023	00:00 to 24:00	7.95-8.83	
CESC/Short/22-23/RA/114					
1	36	27.08.2022 to 25.08.2023	00:00 to 24:00	5.96	LOI not issued
BSES/Short/22-23/RA/117					
1	100	01.08.2022 to 15.08.2022	00:00 to 24:00	6.29	Awaited
2	200	01.08.2022 to 15.08.2022	00:00 to 02:00	-	
3	300	01.08.2022 to 15.08.2022	18:00 to 24:00	9.5	
4	150	01.08.2022 to 15.08.2022	21:00 to 24:00	-	
5	150	16.08.2022 to 31.08.2022	00:00 to 24:00	6.29-7.95	
6	200	16.08.2022 to 31.08.2022	00:00 to 02:00	-	
7	300	16.08.2022 to 31.08.2022	18:00 to 24:00	9.5	
8	150	16.08.2022 to 31.08.2022	21:00 to 24:00	-	
9	300	01.09.2022 to 15.09.2022	00:00 to 24:00	8.42	
10	200	01.09.2022 to 15.09.2022	00:00 to 02:00	-	
11	300	01.09.2022 to 15.09.2022	18:00 to 24:00	10.5	
12	250	01.09.2022 to 15.09.2022	21:00 to 24:00	-	
13	200	16.09.2022 to 30.09.2022	00:00 to 24:00	8.42	
14	200	16.09.2022 to 30.09.2022	00:00 to 02:00	-	
15	300	16.09.2022 to 30.09.2022	18:00 to 24:00	10.5	
16	150	16.09.2022 to 30.09.2022	21:00 to 24:00	-	
17	400	01.10.2022 to 15.10.2022	00:00 to 24:00	9.25	
18	200	01.10.2022 to 15.10.2022	00:00 to 02:00	-	
19	200	01.10.2022 to 15.10.2022	18:00 to 24:00	10.5	
20	100	01.10.2022 to 15.10.2022	21:00 to 24:00	-	
21	250	16.10.2022 to 31.10.2022	00:00 to 24:00	9.25	
TAMILNADU GENERATION AND DISTRIBUTION CORPN LTD/Short/22-23/RA/109					
1	1000	01.10.2022 to 31.10.2022	18:00 to 22:00	15.00-15.01	Awaited
Noida Power Company Limited/Short/22-23/RA/118					
1	20	01.11.2022 to 30.11.2022	00:00 to 24:00	8.51	LOI Issued
2	50	01.12.2022 to 31.12.2022	00:00 to 24:00	8.48	
3	80	01.01.2023 to 31.01.2023	00:00 to 24:00	6.22	
4	60	01.02.2023 to 28.02.2023	00:00 to 24:00	6.67	
5	80	01.03.2023 to 31.03.2023	00:00 to 24:00	7.97	
6	50	01.11.2022 to 31.03.2023	00:00 to 04:00	9.24	
7	50	01.11.2022 to 31.03.2023	20:00 to 24:00	9.24	

IEX Price Trends





Weather (Estimated for next fortnight)

City	Max Temp	Min Temp	Precipitation (Probability)
DELHI	33	27	51%
MUMBAI	30	25	68%
KOLKATA	32	26	59%
CHENNAI	35	27	39%

(Source - Accuweather)

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