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Current News
மின் செய்திகள்

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Hydrogen as a fuel (Part-3)

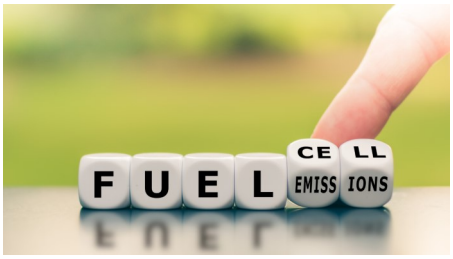
The previous issue introduced the use of Hydrogen as fuel in the transportation sector. This issue will elaborate the usage of fuel in various modes of transport and further provide insights into its use in industry.

1.2 Trucks

Hydrogen offers to bridge the gap between the clean energy options and the end uses that are not connected with the electricity grid. Trucks have a huge potential for the adoption of hydrogen fuel. In light vehicles with low-speed, short journeys can be managed using Electric Vehicles. However, heavy vehicles with long-distance travel requirements have high energy utilisation and are likely to require hydrogen. Hydrogen is being used in US forklift trucks and Nikola is developing long distance heavy goods vehicles in the US. Getting the right policies and infrastructure in place is the need of the hour, as policies and incentives are required for promoting early-stage technologies.

1.3 Trains

Hydrogen can power trains and replace diesel. In the routes which are difficult or uneconomical to electrify, hydrogen trains could be used. Germany has started a fuel cell-powered train having a range of 500 miles with rooftop-mounted hydrogen tanks.



Source: Canva

Fuel cell-powered trams have been developed and operated by China.

The use of hydrogen in railways has many potential benefits. Apart from being a zero carbon-emitting fuel and renewable source, it provides efficient energy output compared to fossil fuels. It is a fully mobile source and can be carried in trains. Currently, this technology is not widespread. But as the regulations and climate responsibility takes the center stage in the coming years, the transportation sector is more likely to adopt fuel cell technology with green hydrogen.

2. Industry

Industries which produce ammonia and refining oil rely on fossil fuels for their fuel mix. Heat and power requirements for industries could be fulfilled by hydrogen. It can act as an alternative to natural gas.

High-temperature industries such as cement and steel-making can also use hydrogen. But commercialisation of hydrogen fuel would take time due to low technical maturity, the need for redesigning the equipment, and uncertain costs as costs would vary depending on the usage.

Next issue will focus on the use of hydrogen in power systems, India's hydrogen scenario and drawbacks.

(To be continued)

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Can solar water pumps redefine the future of farm irrigation? (Part - 1)

The estimated number of agricultural households in Tamil Nadu is 32.44 Lakh. Over 21 lakh agriculture pumps in the state require 8900 MW capacity - which is approximately 20% of the state's electricity consumption. Moreover, the power supply is intermittent and still, over 4 lakh farmers are waiting for their free connection and are also demanding diesel subsidies for their existing pumps.

Given the context, it is crucial to look beyond diesel pumps and pursue lucrative alternatives for farm irrigation. One such alternative is the solar powered agriculture pump and below are the reasons why they have adequate potential to create a positive impact in the future of irrigation.

Solar powered pumps are growing in market size: A recent international report predicted that the total serviceable market for solar water pumps will grow by 12.3% year-on-year until 2030. It is said that by then the market could be reaching over 2.8 million farmers, including 500 million small-scale farmers globally. Furthermore, studies suggest that there remains huge potential for growth even after that.

Solar powered irrigation; Source - Canva

Projections as outlined above raise a central question - Why is the solar pump suddenly growing in market share? On the one hand, given the growing demand, there is a need for an alternative. On the other hand, decentralised solar pumps are the technology that serves the needs of farmers without costing operational expenditure. Factors such as (i) high diesel cost, (ii) lack of continuous reliable electricity supply and (iii) subsidy burden on government as in many states the agriculture is supplied for free, steer the case further away from free electricity supply and diesel pumps. Above all, solar pumps come at a viable cost.

The prices of solar pumps are on the decline: The price of solar panels have plummeted and continue to fall. The cost of solar power has declined 90% over the past two decades, and it is expected to go down another 15% to 25% in the upcoming decade. A joint study by Climate Policy Initiative (CPI) revealed that the cost of generation of solar power is set to fall to as low as Rs 1.9 per unit by 2030.

Solar pumps enhance user convenience: In comparison to its diesel counterpart, solar agriculture pumps are less demanding in terms of labour and maintenance. Firstly, there is no need to re-fuel the pump since solar energy is constantly generated during the course of the day. Secondly, in addition to being environmentally friendly, solar pumps come with a long life-span and good warranty period. Finally, solar pumps do not demand regular servicing/maintenance.

In keeping with the potential of solar pumps as a lucrative and sustainable alternative, the Government provides schemes for agricultural consumers to make the switch to solar. The next issue will focus on the various aspects of the schemes offered to consumers applying for solar agricultural pumps.

(To be continued)

Tamil Nadu News

Older thermal power plants to make way for green energy

The renewed thrust on green energy has come amid environmental activists' constant appeal to the TANGEDCO to scrap its massive coal-based thermal power projects and replace them with solar power, which is clean energy and cheaper. Till now, the State-owned power utility has invested largely in expanding its coal thermal power plant capacity but kept way from setting up solar power projects on its own. "The installed generation capacity of TANGEDCO's own thermal power plants is only 4,320 MW, of which 12 units with an installed generation capacity of 2,520 MW are more than 25 years old and may need to be replaced soon. This government is determined not only to ensure that the State is assured of adequate availability of power but also to ensure that it does not suffer any shortage of power even in the long run. This will be achieved by the addition of adequate green power to its installed generating capacity," Electricity Minister V Senthilbalaji.

"It is proposed to increase the generation capacity by not only taking action for completion of ongoing thermal projects on a war footing but also by increasing the generation capacity from green resources of energy such as solar and wind. As per the principles of the climate change agenda, all efforts will be taken to increase the share of Renewable Energy (RE) in the total energy mix of the State by resolving all the challenges including difficulties related to its integration to the Electricity Grid," he assured. On Monday, TANGEDCO entered into an MoU with Indian Renewable Energy Development Agency (IREDA), to provide advisory services in the areas of renewable energy augmentation. TANGEDCO plans to add 25,000 MW generation capacity, including 20,000 MW solar, 3,000 MW pumped hydro stations and 2,000 MW gas-based power stations in the next 10 years at an estimated cost of Rs 1.35 lakh crore.

Source: DTNext, September 25, 2021

India News

Unprecedented: 100 Gw power plants left with low coal stock

Coal stocks at power stations continue to deplete as a massive 100 Gw is left with critical average stock sufficient to run for a week. Government officials said in the last 3-4 days the rate of depletion has come down but the low stocks remain a concern. Of the projects low on coal, a major 81,200-Mw is operating with a stock below four days. Data available with the Central Electricity Authority (CEA) showed 78 projects of 1,00372-Mw had low coal stock as on August 31. The extent of low coal stock at such a large power capacity is unprecedented. CEA through its daily coal report monitors 135 coal plants with 168 Gw. "Coal stocks are depleting, albiet at a slower pace now. We are taking all possible measures to increase the coal stock in preparation for September when India witnesses a peak," a senior government official said. He said the power ministry is putting pressure on states that are defaulting on payments to coal India and hence receiving regulated supplies. The pressure on coal-based generation is expected to continue till October first week with tapering hydro and wind generation. Data for August 18 showed coal stocks were low at 75 Gw projects, depleting further to 91 Gw by August 23. The position stabilised till August 29, but deteriorated on August 30 and 100 Gw the following day. Analysts expect a spurt in electricity demand in the current month till first week of October on the back of retreating monsoon and seasonal agricultural demand. Power demand for August 2021 grew an unprecedented 17% over the same month last year. It is 16% higher than demand in August 2019. The peak demand in August this year touched 199GW.

Source: Economic times, September 03, 2021

Consumer Focus

The petitioner is a domestic consumer who has four service connections in his premises. The meters initially installed in his premises were conventional electro-mechancial meters. These meters were later replaced with static or electronic meters. The petitioner complained that the new meters were not tested and that he got an unusually high meter reading for two of his service connections on 30.06.2020. On 07.07.2020, the petitioner approached the respective Assistant Engineer (AE) with a written letter to review and revise the assessment readings on 07.07.2020. After repeated requests, the AE visited the premises for inspection and advised that the earthing connection needs to be checked. Subsequently, on 29.07.2020, based on a test report form the Meter and Relay Testing (MRT), the AE revealed that tampering was observed in the earthing for the two service connections in question.

The AE further instructed the Assessor to revise the readings and the petitioner was in-turn requested to wait for a couple of days. Meanwhile, the AE was transferred and the new AE who had taken charge needed to be briefed about the ongoing issue. On 19.09.2020, the new AE visited the premises and advised the petitioner that the Earth-Neutral link needs to be checked. She also informed him that one common neutral had been extended to 3 Service connections and that needed to be rectified as well.

Despite several follow ups, no further action was taken on this issue. Since the petitioner did not get a proper response from the EE/AE, he approached the Consumer Grievance Redressal Forum (CGRF).

During the hearing, the TANGEDCO officials stated that they insisted that the earth had to be checked on two occasions (1-10-2020 and 3-10-2020) On 21.10.2020, the petitioner informed the officials that the earth linked with the Bore well motor is disconnected and a separate neutral given for each service connection. The officials carried out the inspection on the same day and ensured the high consumption was due to the wrong wiring at the premises. On 06.11.2020, the petitioner requested to waive the excess amount paid by him. On 17.11.2020, replied that the high consumption was due to the fault in the wiring and revision of CC charges can not be made. On the other hand, the petitioner requested to carry out load checks and to find the reason for high reading. He requested to generate bills based on actual consumption or consider average billing. On hearing both sides, CGRF decided to provide an alternate meter in series to check the healthiness of the existing 2 meters. The alternate meters for the check was fixed in the petitioner's premises on 04.12.2020. The consumption of the check meters and the consumer meters were checked for the period from 04.12.2020 to 24.12.2020 and found healthy. Hence CGRF dismissed the case. Aggrieved by the order, the petitioner appealed to the Electricity Ombudsman. During the Ombudsman hearing, the same arguments were put forth. Based on the arguments, the Ombudsman referred to, Tamil Nadu Electricity Distribution Code, Regulation 30 - *Consumer's Installation* which states that the maintenance or testing of equipment and wiring on premises shall lie upon the consumer. Since the meters were working fine and consumption readings were in order, the Ombudsman ordered that the revision of consumption charges or average billing is not feasible. Hence the Ombudsman dismissed the case.

Source - Ombudsman case, TNERC

ECC VOICE

திருவண்ணாமலை மாவட்டம், ராமநாதபுரம் கிராமத்தில் வசிக்கும் திருமதி. சிவரஞ்சனி அவர்களது விவசாய நிலத்தில் அண்டை வீட்டுக்காரர் மின்சார வேலியை அமைத்து உள்ளனர். இதனால் தங்கள் குழந்தைகள் மற்றும் கால்நடைகளுக்கு மிகவும் அபாயகரமாக/ அச்சுறுத்துவதாக இருப்பதால் அதனை அகற்ற கேட்டு உள்ளனர். ஆனால் அவர்கள் எந்தவித பதிலும் அளிக்கவில்லை. எனவே, படவேடு மின்சார அலுவலகத்தில் புகார் அளித்தார். பலமுறை அணுகியும், அவரின் புகார் மீது எந்தவித நடவடிக்கையும் மேற்கொள்ளப்படவில்லை. அப்பொழுது, திருவண்ணாமலை மின் நுகர்வோர் மையத்தினைப் பற்றி, செய்தித்தாளின் மூலமாக அறிந்து, அதன் மின் ஆலோசகர் திரு. ஆனந்தன் அவர்களை தொடர்பு கொண்டு பிரச்சனைகளை கூறி புகாராக அளித்தார். மின் ஆலோசகர் திரு. ஆனந்தன் அவர்கள் புகாரினை பெற்றுக்கொண்டு, படவேடு உதவி பொறியாளரை (Assistant Engineer) தொடர்பு கொண்டார். இப்புகாரின் முக்கியத்துவத்தை விளக்கி விரைவில் நடவடிக்கை எடுக்குமாறு கேட்டுக்கொண்டார். மறுநாள் படவேடு மின்சார வாரிய அதிகாரிகள் அவ்விடத்திற்கு வந்து மின்சார வேலியை அகற்றி உள்ளனர். மீண்டும் இச்செயலில் ஈடுபட்டால் காவல் நிலையத்தில் புகார் அளிப்போம் என்றும் தெரிவித்தனர். தக்க ஆலோசனை மற்றும் நடவடிக்கை எடுத்து அபாயகரமாக பிரச்சனைக்கு உதவிய திருவண்ணாமலை மின் நுகர்வோர் மையத்திற்கும், மின் ஆலோசகர் திரு.ஆனந்தன் அவர்களுக்கும் திருமதி. சிவரஞ்சனி தனது நன்றியினை தெரிவித்தார்.

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CAG
Citizen consumer and civic Action Group

Citizen consumer and civic Action Group (CAG) is a non-profit, non-political and professional organization that works towards protecting citizen's rights in consumer and environmental issues and promoting good governance processes including transparency, accountability and participatory decision making.

World News

Current News

China energy crunch triggers shutdowns, pleas for more coal

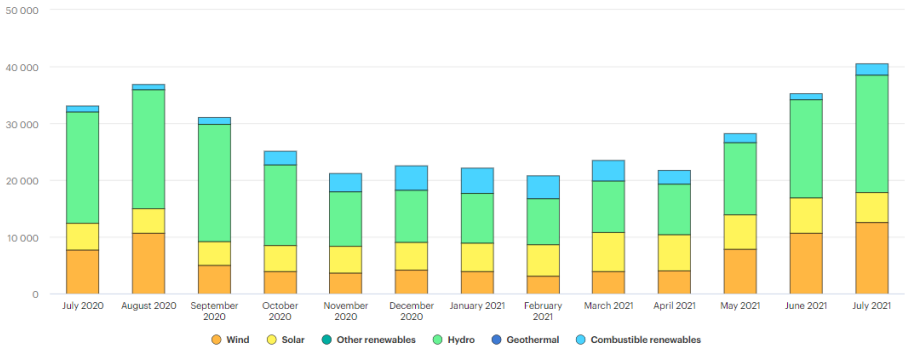
China faces mounting pressure to ramp up coal imports and ensure supplies to keep lights on, factories open and water flowing as a severe power crunch roils the northeastern industrial heartland. With electricity shortages sparked by coal shortages crippling large sections of industry, the governor of Jilin province, one of the hardest hit in the world's no.2 economy, called for a surge in coal imports, while a power company association said supply was being expanded "at any cost". News organisations and social media carried reports and posts saying the lack of power in the northeast had shut down traffic lights, residential elevators and 3G mobile phone coverage as well as triggering factory shutdowns. A utility in Jilin even warned power shortages could disrupt water supplies at any time, before apologising for causing alarm. For the second straight day, the main state grid operator sought to reassure customers, saying it would work to guarantee coal supply and strictly control power use by high-energy consuming and polluting sectors, and ensure power supply to residents during the October holidays and winter heating season. Cities such as Shenyang and Dalian - home to more than 13 million people - have been hit, with disruption at factories owned by suppliers to global companies like Apple (AAPL.O) and Tesla (TSLA.O). Jilin is one of more than 10 provinces forced to ration power as generators feel the heat of soaring coal prices that they can't pass on to consumers. It said China needed to increase production and supply of coal while guaranteeing safety and environmental protection. More medium- and long-term contracts needed to be signed to raise power plant inventories ahead of winter. Coal traders said finding fresh import sources may be easier said than done. "Russia has to first meet demand from Europe, Japan and South Korea," said one northeast China based trader. "Indonesia's export shipments have been curbed by rainy weather the last couple of months and Mongolia's exports, mostly by trucks, are small."

Source: Reuters, September 28, 2021

Publications / Regulations

- PM KUSUM reforms, MNRE, 2021
- Utility-scale Solar and Wind Areas: Burkina Faso.IRENA 2021
- Policy Brief: The case for electric CSE 2021

Electricity production by renewable fuel, India



Source: IEA