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Current News
மின் செய்திகள்

October, 2021

Hydrogen as a fuel (Part-4)

The previous issue introduced the use of Hydrogen as fuel in the transportation sector. This issue will focus on the use of hydrogen in power systems, India's hydrogen scenario.

3. Power System

Fuel cells are flexible, controllable, co-located with the demand, and generate electricity with demand. It can reduce peak demand stress on the grid by generating when the demand is high. But the decarbonization potential depends on supply chains and hydrogen feedstock. When assessing the opportunity for decarbonized hydrogen in the power sector, blue hydrogen has lesser potential than green hydrogen. Even though blue hydrogen is available at a much cheaper cost than green hydrogen, it is expected that the production cost of green hydrogen could fall below 1.00/kgH2 in the long term with improved systems operations and electrolyzer technologies.

Hydrogen can be used in business as usual scenario with changes to turbine design. But lack of infrastructure is an impediment to this idea and would require on-site production and storage of hydrogen. Another disadvantage is the high operating cost due to the low efficiency of combustion. But the key advantage is that they retain their performance at a small scale. Having small modular units near demand centers will reduce transmission and distribution losses.

With the growing ratio of renewable energy sources in power systems, flexibility and supply control becomes important. With hydrogen fuel, temporal shifting of electrical energy over time periods and storage for longer periods can be achieved. For long discharge durations, hydrogen overcomes its energy efficiency disadvantages as compared to a battery, compressed air power, or pumped hydropower storage. Albeit, considerable energy is lost in the conversion to hydrogen and reconversion to electricity, hydrogen can be stored for a long period of time at a lesser cost than other storage options.

Even though hydrogen has the potential to effectively contribute to a low carbon power sector, it will be cost-effective only in the long run. The capital cost of green hydrogen needs to decline and inexpensive methods of storage and transportation need to be established. Lastly, with increasing shares and falling costs of wind and solar power, the cost of grid-connected hydrogen will fall and long-term storage value will rise. Since these factors vary by region, so will the timing for cost-effective hydrogen in the power sector.

(To be continued)

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Can solar water pumps redefine the future of farm irrigation? (Part - 2)

The previous issue introduced solar water pumps as a lucrative and sustainable alternative to diesel pumps. This issue will outline the policies and schemes that further position them as an economical option for farm irrigation, especially in Tamil Nadu (TN).

Tamil Nadu Solar Policy, 2019 :

With 300 days of sun, TN has immense potential to ensure that solar energy is a major contributor to a sustainable energy future for the state. The key objective of TN's solar policy (2019) is to tap into the potential and promote solar energy in the state's efforts to ensure available, accessible and affordable power for all its citizens. The policy sets an ambitious target of 9000 MW installed solar energy generation by 2023. It further outlines several mandates/programs and highlights that the Tamil Nadu Energy Development Agency (TEDA) shall launch the solar energy policy and lead the efforts to promote solar energy in the state.

The role of TEDA :

TEDA is an independent agency setup by the Government of TN to create awareness and migrate the State from using fossil fuels to renewable energy. As of April 2020, with all its renewable energy programs/systems, TEDA reports a cumulative achievement of 4049.95 MW of solar power (PV) in the state. So far, the agency has led the installation of around 285 solar water pumps at a subsidised rate. The agency further envisages an ambitious plan to roll out one lakh grid-connected solar powered agriculture pumps at a project cost of ₹13,500 crore.

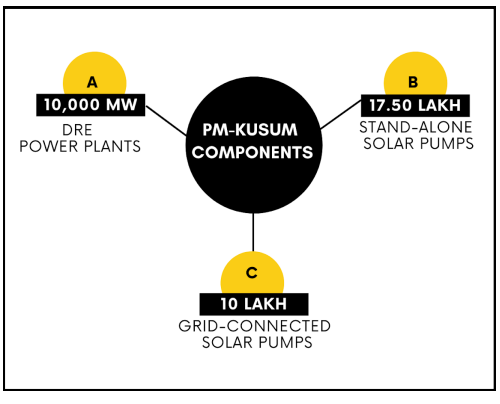
An average solar water pump could tentatively cost anywhere between INR 2.10 lakhs and INR5.10 lakhs depending upon its type and capacity. TEDA, as outlined by the State's solar policy, facilitates the installation of solar pumps at a subsidy as provided by the Ministry of New and Renewable Energy (MNRE). The amount received by farmers as subsidy on their solar water pump largely depends on the ministry's scheme - Pradhan Mantri Kisan Urja Suraksha evem Utthan Mahabhiyan (PM KUSUM) Scheme.

Agricultural Engineering Department and its role:

Another State Government entity that focuses on promoting solar pumps for agriculture is the Agricultural Engineering Department (AED). It is a service department that emerged in the 1940s with the objective of conserving, developing and managing the soil and water resources of the state. One of its key thrust areas is renewable energy under which it has been providing subsidy assistance to the farmers to install solar pumps since 2013-14. Between 2013 and 2019, a total of 4,826 solar powered pumping systems have been installed in the farmers' fields at a total subsidy of Rs.185.77 crore as granted by the TN state Government. In october 2019, AED obtained sanction from MNRE under the PM KUSUM Scheme for installation of off-grid standalone solar powered pumping systems from 5 hp to 10 hp capacity. AED received a subsidy assistance of Rs.107.31 crore from MNRE during the year 2019-20 for the installation of 4,000 solar powered pumpsets.

PM-KUSUM scheme and subsidy on solar water pumps:

The KUSUM scheme has provision for decentralised renewable energy plants, Solar agriculture water pumps and solarisation of existing Grid-connected Agriculture pumps. The scheme was announced in 2019 with three key components: (i) Component-A: Setting up of 10,000 MW of decentralised renewable energy (DRE) based power plants (ii) Component-B: Installation of 17.50 Lakh stand-alone solar agriculture pumps (iii) Component-C: Solarisation of 10 Lakh grid connected agriculture pumps.



Source: *Author's adaptation from MNRE's guidelines for PM-KUSUM scheme*

(To be continued)

Tamil Nadu News

Tamil Nadu buys power at Rs 20/unit to tackle crisis

Debt-ridden Tangedco has been forced to procure power from exchanges at a high cost of up to Rs 20 per unit with private thermal plants unable to supply contracted quantities owing to coal shortage. Wind power generation has also started to drop due to SW monsoon withdrawal. Even though coal stock in Tangedco's thermal power plants fell below four days, power managers were able to handle the private thermal plants' decline thanks to the availability of wind power. But, with the SW monsoon nearing its end, wind power generation has started showing a declining trend, sources said. On Friday evening, wind power generation fell to about 1,200 MW at 6 pm from 1,900 MW while the State's power demand was peaking. When TN met its peak demand of 13,728 around 7 pm, wind generation dropped to about 700 MW. "To meet peak demand, Tangedco has to procure about 2,300 MW to 2,850 MW from spot market in the power exchanges," a source said, adding, that with coal shortage pushing the demand for power, spot market prices have gone up to Rs 20 per unit. On Friday, Tangedco procured 19.87 million units from the Indian Power Exchange (IEX) and Power Exchange India Ltd (PXIL). "Power sold through bids for the 15-minute block for 24 hours varies based on demand. For one 15-minute block from 7.45 pm to 8 pm, the price touched Rs 20 per unit," a source said. A senior Tangedco official said when the wind power season ends, NE monsoon would set in TN bringing rains which in turn will bring down power demand. "If power demand comes down to 13,000 MW - 14,000 MW, we can overcome the decline in wind power with our existing sources of power generation and would only need to procure power from the sot markets sometimes," the official said, adding that the surge in spot market power prices would impact finances of all utilities, including Tangedco, which is bleeding.

Source: DTNext, October 17, 2021

India News

Power consumption up 3% at 57.22 billion units in October 1-15

India's power consumption grew 3.35 per cent in the first half of October to 57.22 billion units (BU), showing recovery amid coal shortage at electricity generation plants, according to power ministry data. Last year during October 1-15, power consumption stood at 55.36 BU which was higher than 49.66 BU in the same period in 2019. The data clearly shows that there is recovery in power consumption as well as demand in the country. Amid the coal shortage at power plants in the country, the peak power shortage moderated to 986 MW on October 15 in sharp contrast to 11,626 MW on October 7. It is to be noted that the 11,626 MW peak power shortage on October 7 was the highest during the first half of this month. Power consumption witnessed 6.6 per cent year-on-year growth in May this year at 108.80 BU despite a low base of 102.08 BU in the same month of 2020. As per the latest data, in June it grew nearly 9 per cent to 114.48 BU, compared to 105.08 BU in the same month last year. In July, it rose to 123.72 BU from 112.14 BU in the same month a year ago. Power consumption in February this year was recorded at 103.25 BU, compared to 103.81 BU a year ago. In March, power consumption rose nearly 22 per cent to 120.63 BU, compared to 98.95 BU in the same month of 2020. After a gap of six months, power consumption had recorded 4.6 per cent year-on-year growth in September 2020, and 11.6 per cent in October 2020. In November, power consumption growth slowed to 3.12 per cent, mainly due to early onset of winters. In December, it grew 4.5 per cent, while this was 4.4 per cent higher in January 2021.

Source: Economic times, October 17, 2021

Consumer Focus

The petitioner purchased two agricultural lands and he submitted a name transfer application for the same on 06.06.2020. In order to complete the name transfer, the Assistant Accounts Officer (AAO) at the Executive Engineer office demanded a field report from the Assistant Engineer. On receiving the report, it was noted that there were outstanding electricity bill amounts for the two service connections for 1 year - from 2003 to 2004. It was also observed that the service connections were not disconnected till date. Assistant Engineer informed the petitioner through a letter dated 02.07.2020 that he had sought permission and was awaiting approval from the relevant officials for collecting the outstanding electricity bill amount along with interest from the petitioner, and would act further on getting the required approvals.

The petitioner was ready to pay the outstanding electricity bill amount and informed the same through his application and request letter. However, no action was taken by the TANGEDCO officials. Hence, the petitioner approached Consumer Grievance Redressal Forum (CGRF). Since he had experienced delays with the CGRF in taking up the matter, the petitioner further appealed to the Electricity Ombudsman. During the hearing, the petitioner informed that no TANGEDCO officials came forward to do the name transfer even though he agreed to pay the outstanding electricity bill amount. Further, the petitioner quoted Section 56 of the Electricity Act 2003 D*isconnection of supply in default of payment,* and Clause 21 (2) of Tamil Nadu Electricity Supply Code, under *Disconnection of Supply,* both state that any outstanding amount must be collected from the consumer within two years from the date of its first due. If the outstanding amount is not collected as such and not shown as recoverable of arrears for electricity supplied, it should not be charged.

The petitioner informed that since the outstanding amount collection period had expired fourteen years ago, TANGEDCO should not be charging him anything. Further, the petitioner quoted Clause 8 of the Distribution Standards of Performance (DSOP) Regulations, - *Transfer of Service Connection which states "The transfer of service connection shall be effected within 7 days from the date of receipt of complete application."* Since eight months had passed with no action from TANGEDCO's side, the petitioner demanded Rs. 1000 as maximum compensation as per Clause 21 (Compensation) of the DSOP Regulations. On the other hand, the AE referred to the internal memo dated 04.01.2021 (Memo No.CE/Coml/SE/EE3/AEE3/F.Test Report/FLM-CM/323/2020, dt. 04.01.2021), which stated that TANGEDCO officials are to decide among their Divisions and do name transfer for service connections based on consumer's demand after collecting the outstanding amount (if any). Accordingly, TANGEDCO's divisional office had given approval for implementing this, however, it remained pending and was not implemented. On hearing the arguments the Ombudsman stated the following: Since TANGEDCO came to know about the outstanding amount only after receiving the letter from the petitioner on 06.06.2020, it can raise the outstanding amount request report, as the two year period for collecting the outstanding amount started only from 06/2020. The Ombudsman highlighted the same with reference to Clause 21 (2) of the Tamil Nadu Electricity Supply Code - *Disconnection of Supply and ordered that since the two year period had not expired, TANGEDCO was eligible to collect the outstanding amount.* As TANGEDCO failed to do the name transfer within the stipulated time period of 7 days, the Ombudsman ordered a maximum of compensation of Rs. 1000 to the petitioner and dismissed the case.

Source - Ombudsman case, TNERC

ECC VOICE

திருச்சி மாவட்டம், அய்யம்பாளையம் கிராமத்தில் வசிக்கும் திரு. தங்கராசு என்பவரின் வீட்டின் மின் பயனீட்டை குறிப்பதற்கு மின் வாரிய கணக்கீட்டாளர் வந்துள்ளார். அப்பொழுது, அவர் மின் மீட்டர் இயங்கவில்லை என தெரிவித்துள்ளார். இது தொடர்பாக திரு. தங்கராசு மின் வாரிய லயன் மேனிடம் புகார் அளித்துள்ளார். சரி செய்வதாக கூறிய லயன் மேன், நாட்கள் ஆகியும் தகுந்த நடவடிக்கையை எடுக்கவில்லை. அப்பொழுது, திருச்சி மின் நுகர்வோர் மையத்தின் மாதாந்திர விழிப்புணர்வு கூட்டம் செவ்வந்திலிங்கபுரத்தில் நடைபெற்றது. திரு. தங்கராசு அதில் கலந்து கொண்டு மின் ஆலோசகர் திரு. செல்வம் அவர்களை தொடர்பு கொண்டு பிரச்சனைகளை கூறி புகாராக அளித்தார். புகாரினை பெற்றுக்கொண்ட மின் ஆலோசகர் அய்யம்பாளையம் இளநிலை பொறியாளரை அணுகி விரைவில் நடவடிக்கையினை எடுக்குமாறு கேட்டுக் கொண்டார். அதன் பிறகு, லயன் மேன் திரு. தங்கராசுவின் மின் மீட்டரை ஆய்வு செய்து வயரிங் தளர்வாக இருப்பதை அறிந்து அவற்றை சரி செய்தார். குறுகிய காலத்தில் தனது பிரச்சனைக்கு தக்க நடவடிக்கை எடுத்து உதவிய திருச்சி மின் நுகர்வோர் மையத்திற்கும், மின் ஆலோசகர் திரு.செல்வம் அவர்களுக்கும் திரு. தங்கராசு தனது நன்றியினை தெரிவித்தார்.

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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

World's longest under-sea electricity cable begins operations

A 450-mile subsea cable which connects the U.K. and Norway, enabling them to share renewable energy, has started operations. In a statement at the end of last week, Britain's National Grid dubbed the 1.6 billion euro ($1.86 billion) North Sea Link "the world's longest subsea electricity interconnector." The North Sea Link is a joint venture with Norway's Statnett, the owner and operator of the country's power transmission network.

While Norway has a long history of oil and gas production, authorities there say 98% of its electricity production stems from renewables, with hydropower accounting for the vast majority. National Grid has previously described interconnectors as "high voltage cables that are used to connect the electricity systems of neighbouring countries," facilitating the trade of surplus power. This will increase to a "full capacity" of 1,400 MW across a three-month timeframe. In its own announcement, Statnett referred to the three months as a "trial period." In comments published by National Grid, Statnett's CEO Hilde Tonne said: "As North Sea Link goes into trial operations, I am proud of the engineering feat produced by our joint team."

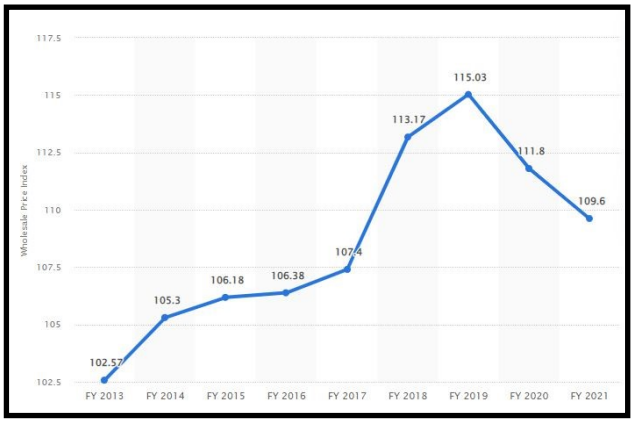
The North Sea Link is National Grid's fifth interconnector — others link to the Netherlands, France and Belgium. Looking ahead, National Grid said 90% of the electricity imported through its interconnectors would come from zero-carbon sources by the year 2030. Last November, plans were announced for a multi-billion pound "underwater energy superhighway" which would allow electricity produced in Scotland to be sent to the northeast of England. The Eastern Link project, as it's known, is to focus on the development of a pair of high-voltage direct current cables that will have a total capacity of up to 4 gigawatts. If fully realized the project, which is currently in the early stages of , would connect two points in Scotland — Peterhead and Torness — to Selby and Hawthorn Point in England.

Source: CNBC, October 04,2021

Publications / Regulations

- Renewable Energy and Jobs - Annual Review 2021, IRENA, 2021
- World Energy Model Documentation, IEA, 2021
- Provisional renewable energy generation report - October 2021, CEA

Wholesale Price Index of electricity across India from financial year 2013 to 2021



Source: Statista