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Current News
மின் செய்திகள்

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Hydrogen as a fuel (Part-5)

The previous issue introduced the use of Hydrogen as fuel in the power system. This issue will focus on the drawbacks of the hydrogen fuel in Indian scenario in detail.

Drawbacks

For Hydrogen to be completely green, it has to be produced by electrolysis of water. While splitting water into H2 and O2, around 30% of the energy is lost. Then energy losses take place in transportation and inefficient power trains. Hence such losses make it not very cost-effective.

There are also few safety reasons which have to be kept in mind while using it as fuel. Hydrogen being lighter than air dissipates easily in case of leaks. Also, it burns with invisible flame and hence special flame detectors are required.

Some metals become brittle when exposed to hydrogen. Hence, safety designs should be made using suitable metals.

India's Hydrogen scenario

Green Hydrogen could play an important role in India's clean energy future.

A report by TERI called "The Potential Role of Hydrogen in India" states that all hydrogen consumed in India comes from fossil fuels. The report also added that by 2050, nearly 80% of India's hydrogen is projected to be green as the price of hydrogen produced by renewable energy would fall.

Even though the government has been promoting such measures, India has to acknowledge certain challenges for its faster adoption.

A major hindrance to hydrogen fuel cells' growth is infrastructure. India has only a few dispensing stations which are less than adequate to encourage its promotion. Moreover, hydrogen fuel is highly inflammable. Even if it is stored in the form of hydrogen-generating sources like methane, propane, or alcohol, inflammability issues are still a concern.

As far as the transportation sector is concerned, the hydrogen fuel cell powertrains are not very robust. Very high or very low-temperature results in system failure. So Indian climatic conditions might lead to the breakdown of these powertrains. Hydrogen fuel cell powertrains use rare earth metals like platinum, hence it is quite expensive and this may drive the investors away.

It is important that we take these challenges on and find working solutions if we really intend to achieve our green energy targets.

Concluded

INSIDE THIS ISSUE:

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Can solar water pumps redefine the future of farm irrigation? (Part - 3)

The previous issue highlighted the policy, scheme and agencies that promote solar pumps for farm irrigation. This issue will capture the various components of the scheme (PM-KUSUM scheme) its implementation and financial assistance.

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 (Component A, B and C). All three components of the scheme aim to add solar capacity of 25,750 MW by 2022 with the total Central Financial Assistance (CFA) of ₹ 34,422 crore.

Component-A: Setting up of 10,000 MW of decentralised renewable energy (DRE) based power plants on a pilot basis.

a. Based on the learnings from the pilot project, the same shall be scaled up with necessary modifications and financial support from the Central Government.
b. Under this component, decentralized ground/stilt mounted grid connected solar or other renewable energy based power plants (REPP) of capacity 500 kW to 2 MW will be set up by individual farmers or groups of farmers.
c. The REPP will be preferably installed within a five km radius of the sub-stations in order to avoid the high cost of sub-transmission lines and to reduce transmission losses.
d. The distribution companies (discoms) shall invite applications from interested beneficiaries for setting up the plants.
e. The power generated will be purchased by discoms at a pre-fixed levelised tariff.
f. Discoms/Developers can lease land from farmers to develop projects: In case the farmers/group of farmers are not able to arrange equity required for setting up the REPP under the component-A of the scheme, they can opt for developing the REPP through developer(s) or even through local discom. In such a case, the landowner will get lease rent as mutually agreed between the parties.
g. Time frame for commissioning of the projects: The REPP shall be commissioned within nine months from the date of issuance of the Lease-option Agreement.
h. Performance Based Incentives for the Discoms: The discoms would be eligible to get a Performance Based Incentive of Rs 0.40 per unit power purchased or Rs 6.6 lakh per MW of capacity installed, whichever is less, for a period of five years from the commercial operation date (COD).

Component-B: Installation of 17.50 Lakh stand-alone solar agriculture pumps

a. Under this Component, individual farmers will be supported to install standalone solar agriculture pumps of capacity up to 7.5 HP for replacement of existing diesel agriculture pumps/ irrigation systems in off-grid areas, where grid supply is not available.
b. The Agriculture Engineering Department will be responsible for the implementation of this component and ensure that priority is given to small and marginal farmers.
c. Under this component, farmers applying for a solar water pump will have to pay only 40% of the pump's price as they receive 30% subsidy from the CFA and another 30% subsidy from the state government.

Component-C: Solarisation of 10 Lakh grid connected agriculture pumps

a. Under this component, individual farmers having grid-connected agriculture pumps will be supported to solarise pumps.
b. Solar PV capacity up to two times the pump capacity in kW is allowed under the scheme.
c. The Tamil Nadu Energy Development Agency (TEDA) will be responsible for implementation of the KUSUM (Component C) Agricultural Solar Pump Scheme in 20,000 pump sets by installing 11 kW solar PV plants in each of the pump sets in Tamil Nadu and approval of benchmark tariff.
d. Under this component, farmers applying for a solar water pump will have to pay only 40% of the pump's price as they receive 30% subsidy from the CFA and another 30% subsidy from the state government.

(Concluded)

Tamil Nadu News

TN may soon be the largest source of nuclear energy in India

In the recent Climate Change meeting at Glasgow, the International Atomic Energy Agency said that nuclear power provides more than a quarter of the world's clean power. "Over the last half century, nuclear power has avoided release of more than 70 giga-tonnes of greenhouse gasses. Without nuclear power, many of the world's biggest economies would lack their main source of clean electricity," said IAEA Director General Rafael Mariano Grossi. Tamil Nadu has less thermal power capacity, but has the maximum capacity of nuclear power among all states. It has the maximum wind power capacity, and solar power capacity is expected to increase in the coming years. India has a total nuclear power capacity of 6800MW and out of this, Tamil Nadu alone has 2440MW. In percentage terms, Tamil Nadu has 35 per cent of the total nuclear power capacity in the country. Kudankulam has two nuclear reactors with a capacity of 1000MW each and similarly, Kalpakkam has two nuclear units with a capacity of 220MW each.

In Kudankulam, four nuclear units with a capacity of 1000MW are being constructed and very soon, Kudankulam may become another Zaporizhzhia in Ukraine, where similarly, there are six nuclear reactors, generating nearly 80 percent of power for the country. "Woods are burning, floods and hurricanes are multiplying, and temperatures are rising. Now is the time for action, and this action must be based on science and on facts. According to the best science of our day, nuclear power is part of the solution," said Grossi. The IAEA recently released reports detailing the roles of nuclear science and technology in climate change adaptation and of nuclear power in achieving the goals of the Paris Agreement and Agenda 2030 for Sustainable Development.

"Nuclear energy provides more than a quarter of the world's clean power," Grossi said. "It may be one of our last best opportunities to agree on concrete steps to achieve sustainable prosperity for all. In the face of climate change, we are all one nation," he said. The IAEA chief highlighted examples of how nuclear techniques are being applied to adapt to consequences of climate change, such as tracking and quantifying carbon, water and nutrient movement, and by inducing variability in crops to make them tolerant to drought, salinity or pests. Nuclear power experts dismiss the opposition in some sections of society. "Till now only two big accidents have happened in nuclear reactors. Fukushima and Chernobyl are the two big accidents and many deaths happened. Due to radioactive pollution many people were injured and the deaths happened. But beyond these, other nuclear reactors in the world are safe and are generating power without any pollution," said a senior NPCIL official.

Source: TheFederal, November 24, 2021

India News

Govt issues updated list of approved solar modules, manufacturers

The ministry of new and renewable energy (MNRE) has issued an updated list of approved models of solar modules and domestic manufacturers (ALMM) to be used for government projects. According to the detailed list shared by the ministry as on 10 November 2021, an additional 1,767 MW module capacity has been included, with Vikram Solar's 972 MW capacity from its Chennai plant taking the major share among the new entrants. According to the detailed list shared by the ministry as on 10 November 2021, an additional 1,767 MW module capacity has been included, with Vikram Solar's 972 MW capacity from its Chennai plant taking the major share among the new entrants. The list included capacities from Alpex Solar's Uttar Pradesh-based manufacturing facility, Pixon Green Energy's and Pahal Solar's Gujarat unit, and Novasys Greenergy's Maharashtra unit. With this, the total capacity under the ALMM list now stands at 10,819 MW. The government had earlier notified that only the manufacturers and approved modules contained in the ALMM list will be eligible for use in government projects, schemes, and projects bid-out on or after 10 April 2021.

Source: ETEnergyWorld, November 15, 2021

Consumer Focus

On 23.03.2021, the petitioner applied for a new service connection under the commercial category. He had paid the requisite fees of Rs.16,368/- towards Application fees, CC Deposit, Development charges, MCD and Service connection charges. On 24.03.2021 TANGEDCO officials inspected his building and noted the height of the building as 14.478 meter. Subsequently, his application was put on hold by the officials citing the requirement for a safety certificate from Chief Electrical Inspector to Government (CEIG) since the building had five floors (ground +4 floors). The petitioner approached the Consumer Grievance Redressal Forum (CGRF) with this issue. On hearing the arguments, CGRF found that the building was constructed in violation of the sanctioned plan and quoted Tamil Nadu Combined Development and Building Rules 2019, (TNCDBR) Section 74(4) which states that *"These rules shall not apply to the constructions in progress as per the valid approved plans on the date of coming into force of these rules provisions (i.e. 4th day of February 2019) and the exemption is applicable till the expiry of the Planning Permit or Building Permit with renewal period for the above such constructions in progress. It shall also not apply in cases of buildings constructed already as per the approved plan and completion certificate is awaited from the competent authority".* Hence CGRF ordered that the supply could not be extended due to the deviated / unauthorised construction of the building.

Aggrieved over the order, the petitioner appealed to the Electricity Ombudsman. During the hearing, the petitioner informed that CGRF had not considered his explanation that since the building was regularised by the Municipality Corporation, he did not need to get the safety certificate from CEIG. He declared that he has paid his property tax, water tax, drainage tax and a penalty to the Corporation. He further confirmed that following the payments, water & drainage connections were extended to his building. In support for his claims the following documents were submitted by him (i) Approved plan, (ii) Copy of building License issued by the Corporation, (iii) Intimation for payment of Building License fee dated 06.11.2020 for deviation from the Plan approved by the Corporation, and (iv) License fees payment & Tax payment receipts.

On the other hand, the Assistant Engineer referred to the internal memo dated 01.03.2018 (Memo. No. CE/Comml/SE/EE3/AEE2/F.15 mts.ht./D.58/18, dt. 01.03.2018), which states that if a building exceeds 4 floors (including ground floor) or 15 meters in height, it is necessary to get a safety certificate from CEIG as the building comes under special and multi-storied building category. On hearing the arguments, the Ombudsman referred to an internal memo dated 04.07.2020 (MemoNo.CE/Comml/SE/Comml/EE3/AEE2/F.Plg.Per/D-139/2020, dt. 04-07-2020) which states that, if the construction is in progress or completed before 04.01.2019, planning permission and Completion Certificate would be adequate for effecting the service connection. The Ombudsman highlighted that the petitioner's building construction was in progress when the TNCDBR, 2019 came into effect and the petitioner had completed the construction within the building permit period of three years. The Ombudsman also referred to Tamil Nadu Electricity Distribution Code, Regulation 27 (11A) which states that if the height of the building is greater than 15 meter and approved by the planning commission, then it is necessary to get approval from the Electrical Inspector in compliance with CEA Regulations 2010. However, the petitioner's building was under 15 meter. Hence the Ombudsman ordered the officials to effect the electricity service connection within 7 days and to submit a compliance report within 15 days from the date of receiving the order.

Source - Ombudsman case, TNERC

ECC VOICE

கடலூர் மாவட்டம், சுந்தரவாண்டி பகுதி, பிள்ளையார் கோயில் தெருவில் வசிக்கும் திரு. கங்காதரன் என்பவர், தங்கள் பகுதியில் உள்ள 15 குடியிருப்புகளுக்கு அடிக்கடி மின்தடை ஏற்படுவதாகவும், அவற்றை சரி செய்யுமாறு லயன் மேனிடம் தெரிவித்துள்ளார். ஆனால், அவரின் புகாருக்கு எந்தவித நடவடிக்கையும் மேற்கொள்ளப்படவில்லை. நவம்பர் மாதம் செய்தித்தாளில் வந்த கடலூர் மின் நுகர்வோர் மையத்தின் விழிப்புணர்வு படிவத்தை பார்த்து, அதன் மின் ஆலோசகர் திரு. கோவிந்தராஜீலு அவர்களை தொலைபேசி மூலம் தொடர்பு கொண்டு அவர்களது பிரச்சனையைக் கூறி புகாராக அளித்தார். பின்னர், திரு. கோவிந்தராஜீலு அப்பகுதிக்கு நேரில் சென்று கள ஆய்வு செய்து, பிரச்சனை அறிந்தார். பிள்ளையார் கோயில் தெருவில் உள்ள நுகர்வோருக்கு வரும் மின்சாரமானது, 17 ஸ்பன் (அதாவது 595 மீட்டர்) தள்ளி உள்ள மின்னூட்டியில் (Transformer) இருந்து வருவதை அறிந்தார். ஆனால் அப்பகுதிக்கு அருகில் 3 ஸ்பன் (அதாவது 105 மீட்டர்) தொலைவில் உள்ள மின்னூட்டில் இருந்தும் மின்சாரம் சீராக பெற முடியும் என்பதை அறிந்தார். பிறகு உதவி பொறியாளரை தொலைபேசி மூலம் தொடர்பு கொண்டு புகாரினை விவரித்தார். புகாரினை சரி செய்வதற்கான ஆலோசனைகளை பரிந்துரைத்து, விரைவில் சரி செய்து கொடுக்குமாறு கேட்டுள்ளார். உதவி பொறியாளர் புகாரினை பரிசீலனை செய்து, மின் ஆலோசகரின் பரிந்துரைகளை ஆராய்ந்து, தகுந்த நடவடிக்கையை எடுத்தார். நீண்ட காலமாக தொடர்ந்து வந்த பிரச்சனைக்கு தீர்வு காண உதவிய கடலூர் மின் நுகர்வோர் மையத்திற்கும், மின் ஆலோசகர் திரு. கோவிந்தராஜீலு அவர்களுக்கும் திரு. கங்காதரன் மற்றும் அப்பகுதி பொதுமக்கள் தங்கள் நன்றியினை தெரிவித்தனர்.

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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

Portugal closes its last remaining coal plant

Portugal has shuttered its last remaining coal plant, becoming the fourth country in the European Union to do so, along with Austria, Belgium, and Sweden. The vPego plant in central Portugal was shut down on Friday, 10 days ahead of schedule. It was Portugal's second-largest emitter of carbon dioxide. Saturday was the first day that electricity was produced in Portugal without the use of coal. As Electrek reported in July 2020, Portuguese energy utility EDP announced the closure of its Sines coal power plant, which emitted 13.5% of all carbon dioxide in Portugal. In 2017, Portugal signed a declaration to exit coal by 2030 at COP23 in Bonn, Germany. The country beat its original target by nine years.

Kathrin Gutmann, Europe Beyond Coal campaign director, said: Portugal is the perfect example of how once a country commits to quitting coal, the pace of the phase out inevitably accelerates. The benefits of transitioning to renewables are so great, once started, it only makes sense to get out of coal as fast as possible.

The challenge now is to ensure utilities do not make the mistake of replacing coal with fossil gas, or unsustainable biomass. Pego's owner, Endesa, is considering converting the 682 megawatt plant to burn wood pellets. The EU is considering tightening rules on whether wood-burning energy could be classified as clean energy.

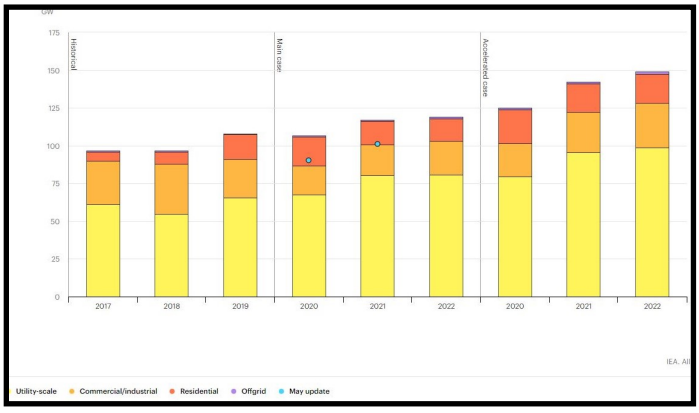
Francisco Ferreira, president of Portuguese, ZERO, said [via Berlin-based group Europe Beyond Coal]: Freeing ourselves from our biggest source of greenhouse gases is a momentous day for Portugal. But it is soured by the prospect of the plant being converted to burn forests. Ditching coal only to switch to the next worst fuel is clearly not an answer. Instead, the focus should be on rapidly upscaling our renewable energy capacity in wind and solar.

Source: electrek, October 04,2021

Publications / Regulations

- IRENA's Energy Transition Support to Strengthen Climate Action, IRENA, 2021
- Renewable Energy for Agri-food Systems, IRENA, 2021
- Energy Efficiency 2021, IEA

Solar PV net capacity additions by application segment, 2017-2022



Source: IEA