ECAM
A MAGAZINE DEVOTED TO PROFESSIONAL DEVELOPMENT & TECHNOLOGY UPGRADATION
ESTD - 1925
Total No. of Pages: 64

JUNE 2024 Rs. 50.00

Indian Electrical Contractor & Trader

Regd. No. MCE/80/2024-26
at Mumbai Patrika Channel, Mumbai GPO, Mumbai-1,
on 27th & 28th of Previous month. R.N.I. No. 11498 / 57
Date of Publishing 26th of Every Previous Month

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Ethics and Social Responsibility in Organisation

It is important to do business ethically and responsibly including environmental impact, industry regulations, and compliance.

Business ethics are important for several reasons:
Reputation: Adhering to ethical standards helps companies build a positive reputation, which is important for attracting customers, employees, and investors. If a company acts in an unethical way, it could hurt its reputation and lose the trust of its stakeholders.

Employee morale: A company that operates ethically creates a positive work environment, which can improve employee morale and reduce turnover. Employees are more likely to be committed to their work and to the company when they feel that it operates with integrity.

Customer trust: Companies that have a strong commitment to ethics are more likely to win the trust of their customers. Customers are more likely to continue to do business with a company that operates with integrity and is transparent about its practices.

Legal compliance: Adhering to ethical standards helps companies comply with laws and regulations, reducing the risk of legal penalties and lawsuits. Companies that engage in unethical behaviour risk facing legal consequences and damaging their reputation.

Social responsibility: Businesses have a responsibility to operate in a manner that benefits society and the environment. Adhering to ethical standards helps companies fulfil this responsibility, contributing to a better and more sustainable future

To be ethically sound, businesses must uphold the principle of social responsibility, which requires them to think about how their actions will affect the people and the planet. This can be anything from poverty and inequality to protecting the environment and making sure people have their basic rights.

Companies have an obligation to reduce the negative effects of their operations on the environment through measures such as recycling more, using less energy, and switching to more eco-friendly products and procedures. A socially responsible business will work to lessen its impact on the environment, safeguard wildlife and habitats, and promote long-term prosperity

Organizations must protect human rights by not doing things like forced labour, child labour, or discrimination themselves or by helping to make them happen. A socially responsible business, for instance, will make sure that its suppliers follow the law regarding working conditions, and that its operations don't negatively impact locals and the environment.

One way for businesses to show they care about social responsibility is by giving back to the community. In order to give back to the communities they operate in, businesses do things like donate to charities, encourage employee volunteerism, and fund social initiatives. Reports on corporate social responsibility (CSR) are another way for businesses to show they care about the world outside their doors and are willing to take action to improve it. Through these reports, investors, employees, customers, and the public can learn about what the company is doing to deal with social and environmental problems. In addition to benefiting the company's bottom line and image, adhering to ethical standards in business practices is good for the business, its employees, its clients, and society at large. Long-term prosperity and social benefits are more likely to accrue to businesses that treat their employees fairly and operate with integrity. Companies that place a strong emphasis on social responsibility tend to be seen as trustworthy and responsible by their constituents. By taking an ethical approach to decision-making, we can create a world that is equitable, responsible, and respectful of all individuals.

WAMAN GODABAI BHAGWAN BHURE
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नमस्कार मित्रांनो,

दिनांक ०८.०५.२०२४ रोजी सार्वजनिक बांधकाम विद्युत विभागाच्या अधिक्षक अभियंता (मुंबई) यांची सदिच्छा भेट घेऊन इकॅम शिष्टमंडळाने सार्वजनिक बांधकाम विभागात काम करत असताना सभासद ठेकेदारांना येणाऱ्या विविध अडीअडचणींबाबत चर्चा विनिमय करण्यात आला. त्यामध्ये बऱ्याच ठिकाणी सार्वजनिक बांधकाम खात्याने मंजुरी दिलेल्या यादीतील साहित्य वापरू दिले जात नाही. ज्या साहित्यास सार्वजनिक बांधकाम खात्याने मंजुरी दिलेली नाही असे साहित्य वापरण्यासाठी भाग पाडले जात होते. सदरबाबतीत मंजुरी दिलेल्या यादीतील साहित्य वापरू दिले जावे, निविदांमध्ये असणाऱ्या अनामत रक्कमा या वेळीच परत मिळत नाहीत, त्या लवकर मिळाव्यात तसेच सामानाच्या किंमती वाढल्याने DSR वाढवुन मिळावा अशा महत्वाचे मुद्दे त्यांच्यासमोर मांडण्यात आले सार्वजनिक बांधकाम विद्युत विभागाच्या अधिक्षक अभियंता (मुंबई) यांनी सर्व अडचणी समजुन घेऊन काही अडचणी सोडवण्याची ग्वाही दिली तसेच इतर अडचणींबाबत योग्य ते मार्गदर्शन केले. या इकॅम शिष्टमंडळात महासचिव श्री देवांग ठाकुर, इकॅम सार्वजनिक बांधकाम समितीचे चेअरमन श्री. प्रविण बडगुजर, इकॅम ठाणे विभागाचे चेअरमन श्री निलेश तिवरामकर, संचालक श्री. माधव गद्रे, श्री. कमलेश पटेल, तसेच सभासद श्री विनोद शर्मा, श्री अजय सावंत यांचा समावेश होता.

मा.अधिक्षक अभियंता विद्युत सा.बा. खाते मुंबई श्री आर एस पाटील साहेब याना निवेदन देताना ECAM चे महासचिव श्री देवांग ठाकुर, PWD कमेटी चेअरमन श्री प्रविण बडगुजर, श्री निलेश तिवरामकर, श्री माधव गद्रे, श्री कल्पेश पटेल, अजय सावंत, शर्माजी सर्व उपस्थित होते व सर्व सकारात्मक चर्चा झाली.

Messe Frankfurt Trade Fairs India Pvt. Ltd. या International संस्थेच्या वतीने ९ ते ११ मे २०२४ दरम्यान एलईडी एक्स्पो हे प्रदर्शन Jio Convention Centre, मुंबई येथे भरविले होते. सदर प्रदर्शनाचे उदघाटन इकॅमचे अध्यक्ष श्री वामन भुरे यांच्या हस्ते करण्यात आले सदर प्रदर्शनास इकॅमच्या सर्व पदाधिकाऱ्यांनी तसेच संचालकांनी भेट दिली. सदर प्रदर्शनास अभुतपुर्व प्रतिसाद मिळाला. आपण या प्रदर्शनास संपुर्ण सहयोग दिला होता.

सभासदांनी आपली संघटना मजबुत करण्यासाठी तसेच संघटनेची पाळेमुळे संपुर्ण महाराष्ट्रात पोहोचवण्यासाठी नवीन अनुज्ञाप्तीधारक ठेकेदारांना शोधुन संघटनेबद्दल माहिती देऊन नवीन सभासद जास्तीत प्रमाणात करण्याचे प्रयत्न करावेत.

आपल्याला आपला व्यवसाय करताना काही अडी-अडचणी येत असतील तर त्या अडचणी आपण इकॅम मुख्यालयाला लेखी कळवाव्यात इकॅमच्या सभासदांना येणाऱ्या अडचणींचे निराकरण करण्यासाठी आम्ही कसोशीने प्रयत्न करू.

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Maintenance of dry transformers

Friends, we all electrical contractors are well aware of the importance of transformers. The transformer is the most important part as regards safety of the electrical installation. Let us review the maintenance of the same.

Maintaining dry transformers is crucial for ensuring their safety, reliability, and longevity. Here are key maintenance practices for dry-type transformers.

It is very important to do a Visual Inspection, which includes Regular Inspection. We must perform the visual inspections periodically to check for any signs of wear, damage, or overheating. Similarly, cleanliness has to be ensured for the transformer and its environment has to be clean to prevent dust and dirt buildup, which can impede cooling and cause overheating.

We have to regularly monitor the temperature and keep the ambient temperature within the transformer's specified limits.

Again the cooling system has to verify that it (such as fans or ventilation) is operating correctly to maintain the transformer's temperature.

While doing the electrical testing, we have to see the Insulation Resistance which has to be measured regularly to ensure it is within acceptable limits.

Equally important is the Winding Resistance. We must test the winding resistance to detect any issues with the windings.

Please remember that for identifying any insulation degradation we have to do a partial Discharge Testing.

Another important point is regular check up and tightening of electrical connections to prevent arcing and overheating due to loose connections.

Friends, moisture levels are also important. One has to ensure that the transformer remains dry. We can use hygrometers to monitor moisture levels inside the transformer enclosure.

The interior of the transformer has to be dry. So we have to replace the desiccants or silica gel packets if used, to keep the interior dry.

One of the major requirements is the Airflow. Please ensure there is adequate ventilation around the transformer to prevent overheating. Also clean or replace air filters periodically to maintain proper airflow.

The maintenance guy has to observe unusual noises. He has to listen for any unusual noises that might indicate mechanical issues. Similarly, he must check for excessive vibration, which could indicate problems with the transformer's internal components.

Protection of the relays is necessary. We have to test and calibrate protection relays regularly to ensure they are functioning correctly. At the same time one must verify the grounding system to ensure it is intact and effective.

Any system requires record keeping for better performance. The person in charge has to maintain detailed records of all inspections, tests, and maintenance activities. He has to record operational data such as load, temperature,and any anomalies to identify trends or potential issues.

The manufacturer of the transformer knows every detail of his product. Hence we have to follow all the maintenance guidelines and recommendations given by the manufacturer for specific models and types of dry transformers. Similarly we have to adhere to the recommended service intervals for comprehensive checks and maintenance activities.

Friends, by adhering to these maintenance practices, we can enhance the safety, performance, and longevity of dry transformers, ensuring they operate reliably in the electrical system.

Satish Sinnarkar

Editor, IECT

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DIGITAL TWIN

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Preface

In an era where digital transformation is happening in all fields, the concept of the digital twin emerges as a radical change in entire system having great future potential. A digital twin in simple term can be said as virtual replica of any physical object, system, or process. Additionally, there is synergy between the physical and virtual replica. Hence many advantages such as improvement in efficiency, productivity, and sustainability can be obtained. There are lot of applications with this new technology and will be placing profound impact in future.

Overview

Digital Twin as defined by IBM is - A digital twin is a virtual representation of an object or system designed to reflect a physical object accurately. It spans the object's lifecycle, is updated from real-time data and uses simulation, machine learning and reasoning to help make decisions. In short it is a virtual replica of a physical object, process, system, or even of a person. It is being created digitally and using data from sensors, Internet of Things (IoT) devices, and other sources fully matching to pretend as similar as similar which is in existence in the real-world. As digital twins have evolved rapidly and have been adopted across various sectors, including manufacturing, healthcare, transportation, and smart cities. Digital twins are used in various industries such as manufacturing, engineering, healthcare, transportation, planning etc. It is being used to monitor, analyze, optimize performance, predict maintenance needs, simulate scenarios, and improve decision-making. They enable organizations to gain deeper insights, enhance efficiency, and innovate in a way that were not previously possible. It can be shown as fig.

Cedit- https://www.reliableplant.com/Read/31897/digital-twins-ai

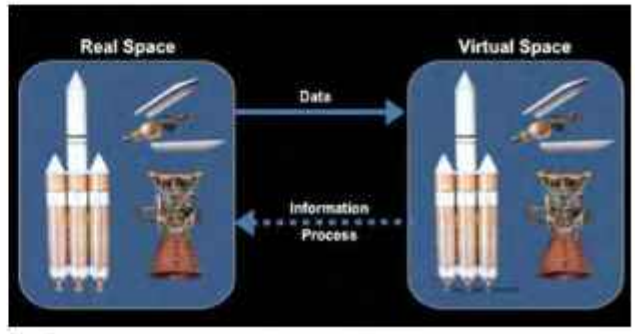
History

Digital twins were predicted by David Gelernter's 1991 book Mirror Worlds. In early 2000, idea originated in manufacturing industries. Michael Grieves, first publicly introduced the concept and model in 2002. Grieves proposed the digital twin as the conceptual model primarily for lifecycle management of product.

Earlier it was having different names but was called "digital twin" by John Vickers of NASA in a 2010. It gained more thrust after the advancement of IoT technologies, big data analytics, and simulation software in 2010.

The digital twin concept then made consists of three distinct parts- (1) the physical object or process and its physical environment, (2) the digital representation of the object or process, and (3) the communication channel between the physical and virtual representations.

The connections between the physical version and the digital version include information flows and data that includes physical sensor flows between the physical and virtual objects and environments. The communication connection is referred to as the digital thread. An early Digital Twin concept by Grieves and Vickers was as per fig.



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How it works-

Digital twins work by creating virtual replicas of physical objects, systems, or processes. Replica is created using a combination of 3D modeling, sensor data and artificial intelligence. Then same are integrated with real-time data and simulation models to simulate their behavior and performance. Simplified overview of how digital twins work is as –

1) **3D modeling-** A digital twin begins with a 3D model of the physical object or system. This model can be created using computer aided design software or other 3D modeling tools.

2) **Simulation-** Using the collected data, mathematical models, and simulation techniques, a virtual representation of the physical object or system is created. This digital model captures the key characteristics, components, and interactions of the real-world counterpart, allowing it to simulate its behavior under different conditions.

3) **Data Collection-** The process begins with the collection of data from various sources, including sensors, IoT devices, monitoring systems, and historical records. These data sources provide information about the physical object or system being replicated, such as its condition, size, shape, material, performance, temperature, pressure, vibration, operating parameters, environmental factors, performance etc.

4) **Integration of Real Time Data-** Real time data from sensors and monitoring devices are integrated into the digital twin. So that current state of the physical object or system is informed to digital version. And due to which digital twin respond dynamically to changes happening in operating conditions and environmental factors.

5) **Artificial intelligence-** The digital twin is then integrated with AI algorithms, which are used to simulate and analyze the behavior of the physical object or system. These algorithms can predict how the object or system will behave under different conditions and identify potential problems before they occur.

6) **Analysis and Visualization-** The digital twin analyzes the incoming data, simulates various scenarios, and performs predictive analytics. With which it gets insights into the behavior, performance, and future outcomes of the physical object or system. These insights are visualized through interactive dashboards, graphical representations, and other visualization tools for easy interpretation and decision making.

7) **Feedback Loop-** The digital twin continuously interacts with the physical object or system and exchanges data with recommendations in a feedback loop. This feedback loop allows for optimization, control, and decision making based on the analysis and simulations performed by the digital twin.

8) **Decision Support and Action-** Based on the insights generated by the digital twin, stakeholders can make informed decisions, take corrective actions, and optimize the performance, efficiency, and reliability of the physical object or system. These decisions may involve preventive maintenance, process optimization, resource allocation, or operational adjustments and many more.

9) Overall, digital twins enable organizations to gain a deeper understanding of their assets, systems, and processes, optimize performance, predict and prevent issues, and make data driven decisions.

Early use –

It was utilized to create virtual representations of physical products, such as airplanes, automobiles, or industrial machinery. These virtual models allowed manufacturers to simulate and optimize the design, production, and performance of their products before they were physically built, thereby reducing costs and time.

Additionally, digital twins were also used in the field of process engineering, particularly in industries like oil and gas, where they simulated the behavior of complex systems such as refineries or pipelines. This enabled engineers to test various scenarios, optimize operations, and predict potential issues or failures. Overall, the early use of digital twins was focused on improving product design and manufacturing processes, also partially used for optimizing the operation of complex industrial systems.

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Present Applications-

Digital twins have a wide range of applications across various industries, including but not limited to :

1) Energy- In the energy sector, digital twins can be used to simulate power grids, optimize energy distribution, power generation, predict demand, manage renewable energy sources, and ensure grid stability and resilience.

2) Buildings or Structures- Design can be improved through digital twins. Also, it will be useful in designing the systems operating within those structures, such as electricity, HVAC systems, structural stability, water etc.

3) Manufacturing- Digital twins can be used to simulate manufacturing processes, optimize production lines, monitor equipment performance, and predict maintenance needs.

4) Healthcare- In healthcare, digital twins can replicate patient data, organs, or even entire healthcare systems to improve diagnosis, treatment planning, and personalized medicine.

5) Smart Cities- Digital twins of urban areas can help city planners and policymakers visualize infrastructure, optimize traffic flow, manage energy consumption, and enhance public services like waste management and emergency response.

6) Transportation- Digital twins of vehicles, railways, airports, and traffic systems can enable predictive maintenance, optimize logistics and fleet management, and improve safety and efficiency in transportation networks.

7) Aerospace- Digital twins of aircraft and spacecraft can be employed for design validation, predictive maintenance, performance optimization, and training simulations.

8) Building Management- Digital twins of buildings can help to optimize energy usage, monitor occupancy, predict maintenance needs, and enhance comfort and safety for occupants.

9) Supply Chain Management- Digital twins of supply chains can enable real time monitoring, predictive analytics, and optimization of inventory, logistics, and production processes.

10) Environmental Monitoring- Digital twins can simulate ecosystems, monitor environmental parameters, predict natural disasters, and support conservation efforts.

11) Retail- In retail, digital twins can be used to personalize customer experiences, optimize store layouts, predict demand, and manage inventory efficiently.

These are just a few examples, and the potential applications of digital twins continue to expand as technology advances and new use cases emerge.

Cont. in next issue of IECT

How AI Impacts Various Sectors of Activity

AI is becoming ubiquitous and progressively impacting all sectors of activity. The most affected sector today is software.This sector was first transformed by the cloud, shifting from licenses for locally installed software to subscriptions for server-hosted software, with more collaborative features. Notable examples include Zoom, Slack, and Notion. Today, if you are developing software, it is essential to rethink the product and user experience through the lens of AI. Notion has been an excellent example of rapid adaptation with Notion AI.

Another significantly impacted sector is autonomous vehicles and, more broadly, transportation, with companies like Tesla and Scale AI. Currently, the primary use of AI in this sector is to enhance passenger safety. However, this sector will likely be further transformed when fully autonomous vehicles are deployed: goods transport, on-demand vehicles, etc. It is probably one of the sectors where it is easiest to predict future uses, as they are quite logical. However, it is also one of the sectors where the implementation and deployment of these uses are the most complex. The third significantly impacted sector is robotics and automation. AI enables the creation of smarter robots that can adapt to changing environments. This includes industrial robots, service robots, and even personal robots.

The impact of AI is not limited to these areas. It is also transforming the health, finance, retail sectors, and many others by providing more efficient, personalized, and intelligent solutions.

The next generation of billionaires and companies valued at several hundred billion dollars will undoubtedly be those that build the best AI applications in their industry.

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Current Transformers' Market Size to Expand

The current transformer market size is expected to grow by USD 422.01 million till 2027. However, the growth momentum of the market will progress at a CAGR of 8% during the forecast period...

According to Technavio's latest market research report titled Global Current Transformer Market 2023-2027, the burgeoning demand for electricity in emerging economies is fuelling market expansion. Urbanization, propelled by industrial development, is catalyzing residential and commercial construction activities. India, boasting one of the globe's swiftest urbanization rates due to its burgeoning populace and rising incomes, stands as a prime example.

Furthermore, the manufacturing sector in these regions holds immense growth prospects, bolstering electricity demand. Anticipated to emerge as major manufacturing hubs, these nations are driving substantial market growth. This trend has spurred both public and private entities within the electricity industry to embark on planned network capacity expansion initiatives, indicative of the burgeoning demand. These endeavours underscore the significant market growth forecasted for the forthcoming period.

The emerging market trend

The very sophisticated manufacturing processes result in the production of high-quality electrical equipment like ABB instrument transformers, which are the next generation. Similarly, the APG process is subject to multiple casting parameters, such as temperature, pressure, and curing time. Such a variable is posed by epoxy producers as a challenge for optimizing the production process in order to obtain a better product.

The key segment

The oil-immersed segment is significant during the forecast period. These transformers are meant to be immersed into insulating oil for better insulation and cooling and are widely applied in high voltage applications, e.g., to generate electricity, transmission, and distribution systems.

The market overview

The Current Transformer (CT) market is experiencing a surge, driven by heightened demands in energy distribution and the modernization of power networks. As power usage increases and electric vehicles become more prevalent, the need for efficient energy consumption rises. CTs play a pivotal role in power distribution, accurately measuring and monitoring current flow.

With the modernization of power distribution infrastructure, CTs are evolving to meet the demands of smart grids and renewable energy integration. Their

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reliability and accuracy make them indispensable in ensuring stable and efficient electricity delivery. As the push for sustainable energy intensifies, the CT market is poised for sustained growth, catering to the evolving needs of the energy landscape.

Analyst review

In the realm of energy distribution and power networks, Current Transformers (CTs) play a pivotal role in monitoring power usage and ensuring efficient energy distribution. As the world moves towards modernizing power distribution infrastructure, the demand for CTs is experiencing a significant upsurge. This surge is fuelled by various factors ranging from the integration of renewable energy sources to the proliferation of electric vehicles.

One of the primary drivers stimulating the current transformer market is the global push towards energy efficiency. With mounting environmental concerns, there's an urgent need to minimize transmission losses and enhance energy efficiency throughout transmission and distribution networks. Energy-efficient transformers equipped with smart sensors have emerged as a solution to mitigate energy wastage and optimize power usage.

However, the modernization of power distribution infrastructure comes with its challenges, notably the high initial costs associated with upgrading aging systems. Despite the long-term benefits, the upfront investment can be a deterrent for many stakeholders. Nonetheless, the promise of reduced transmission losses and enhanced energy efficiency acts as a compelling incentive for investment.

In the context of environmental sustainability, the prevalence of oil-based insulation in traditional transformers raises concerns regarding environmental impact and safety. This has led to a growing emphasis on adopting eco-friendly alternatives and exploring innovative insulation materials to mitigate environmental risks.

Moreover, the advent of electric vehicles has reshaped the energy landscape, necessitating robust power networks capable of supporting widespread adoption. Current transformers play a crucial role in monitoring and managing the power flow required for charging infrastructure, contributing to the seamless integration of electric vehicles into the grid.

Furthermore, the digitalization of power systems has revolutionized the way energy is monitored and managed. Advanced CTs equipped with digital technology offer real-time data monitoring and analysis, enabling proactive maintenance and optimizing energy distribution.

In parallel, the shift towards renewable energy sources such as solar and wind necessitates adaptable CT solutions capable of accommodating fluctuating power generation. Transformer and circuit breaker bushing advancements cater to this need, ensuring seamless integration of renewable energy into existing grids.

In conclusion, the current transformer market is witnessing dynamic growth driven by the imperative for energy efficiency, the adoption of renewable energy sources, the proliferation of electric vehicles, and the digitalization of power systems. With innovation at its core, the industry is poised to address the challenges of modernizing power distribution infrastructure while advancing towards a sustainable energy future.

However, the high cost of upgrading electricity distribution networks hampers market growth.

Green Hydrogen

As India strides towards a greener future, the burgeoning demand from its vast industrial sector is propelling the nation towards innovative energy solutions like green hydrogen, pivotal for reducing carbon emissions and enhancing sustainability. Industries, notably steel and fertilizer, are transitioning towards green hydrogen to meet their energy needs and explore export potentials, particularly in the form of green ammonia. This shift not only addresses domestic energy requirements but also positions India on the global green energy map, facilitated by strategically located production facilities along the coastal states such as Odisha and Gujarat.

To overcome technological challenges and escalate production, India is engaging in significant international collaborations. Partnerships with global leaders in hydrogen technology from Japan, Europe, and Australia are central to this strategy, aiming to foster long-term technological exchanges and ensure Indian projects remain at the technological forefront. This global cooperation spans beyond mere technology transfer, encompassing joint research and development, policy crafting, and environmental management.

The Bureau of Energy Efficiency (BEE) underlines institutional support, accrediting agencies to monitor and certify green hydrogen projects. Milestones like the commissioning of India's first 99% pure green hydrogen plant by Oil India Limited in Assam, and NTPC's initiation of green hydrogen blending in Surat, underscore significant advancements. Additionally, the Pune Municipal Corporation's collaboration to convert waste into green hydrogen exemplifies innovative waste-to-energy projects. Despite these advances, the journey ahead is fraught with challenges, including the need for substantial increases in electrolyzer capacity and the intensive energy requirements for hydrogen production. India's strategic approach, however, combining policy support, technological innovation, and international partnerships, positions it well to navigate these challenges, aiming for a sustainable and energy-independent future.

Saurav Anand, Principal Correspondent,
ETEnergyWorld | The Economic Times

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Adani, Tata eye bigger pie in Mumbai power distribution

As Mumbai's real estate and electric vehicle penetration grows, two of the city's private power distribution companies, Adani Electricity and Tata Power, are eyeing a bigger business pie, particularly betting on high-value customers.

Adani Electricity Mumbai (AEML), the subsidiary which houses Adani Energy Solutions' Mumbai distribution business, recorded a six per cent growth in total units sold in the financial year 2023-24 (FY24), the company's presentation shows.

This gain came at over 13 per cent growth in the year-ago period.

Rating agency Fitch attributed this growth to strong commercial and industrial demand.

Tata Power, the other private power distributor in Mumbai, in a response to *Business Standard*'s query last week said, "With the addition of new direct consumers, we have seen a growth of Rs 20 per cent in our direct customer's segment."

The company added that with the number of direct customers increasing, electricity demand too has surged by over 40 per cent during the last three years.

Gautam Adani-promoted Adani Energy Solutions entered the Mumbai distribution business in 2018 through the purchase of assets from Anil Ambani-promoted Reliance Infrastructure.

Tata Power has been an existing competitor since November 2009.

In the last five years, Adani Electricity Mumbai has grown its consumer base by 29 per cent, while Tata Power's base, in the same period, grew by eight per cent.

The city has also been rapidly growing post-pandemic in terms of new infrastructure and realty construction.

The battle between the two companies for high-tension (HT) customers in the public services category is also heating up.

According to people in the know, one of the city's main infrastructure projects – the Metro 2A line has explored a transfer of connection from Tata Power to Adani Electricity. Tata Power, in its response, however, said no connections related to the Metro-2A line and the Monorail have moved out from its network.

A Maharashtra Electricity Regulatory Commission (MERC) order in March this year highlighted a Tata Power submission which said, "a negative CAGR has been observed in HT VI(B) - Public Services category where a significant number of sales have switched over to other Distribution Licensee(s)."

However, in a response to *Business Standard*, Tata Power said, "In the last financial year, no Tata Power consumer migrated to any other distribution utility under HT Public services category due to competitive tariff and better Value-Added Services (VAS) like green power supply, and EV charging facilities."

"Across all segments, Tata Power has acquired more customers in this category by providing the best open-access solutions, and VAS to its customers.

"It is worth mentioning that our consumers have enjoyed the benefit of competitive tariff, along with better quality of services," the response said.

Since 2019, the city's international airport has been among the public service category customers that have moved to Adani Electricity from Tata Power.

Some bus depots of the city's wide BEST bus network were already part of Adani's Mumbai portfolio, which is now witnessing electric-vehicle charging growth in the same category.

Construction activity in the city has been on the rise – both for infrastructure and residential projects, which industry executives noted will add to both volumes and customers for distribution companies in the coming years.

The expected growth makes analysts bullish on the distribution business for both entities.

"The company has a well-planned strategy to shift towards clean energy and targets a 2x rise in its profit after tax (PAT) (before minority) by FY27E over FY23.

"We believe growth would be largely driven by distribution and renewable energy business," analysts at brokerage firm Sharekhan said in a February note on Tata Power.

"Adani's assets are those privatised to Reliance Infra and had the lion's share of the city's business," said an industry executive, adding, "Which also means the company will capitalise growth in similar proportion."

An email query sent to Adani Energy Solutions remained unanswered.

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45-Days Payment Security Clause Creating Hurdles for MSMEs as Companies Place Orders with Unregistered Players. SC Allows Vyapar Mandal to Move HC: Reports

A new provision in the Income-Tax (I-T) Act in budget 2023-24 that aimed to secure payments to micro, small and medium enterprises (MSMEs) within 45 days of the supply of goods or services has resulted in a peculiar problem — that of large companies cancelling orders to registered MSMEs and placing these with unregistered MSMEs, says a report. Meanwhile, the Supreme Court, while refusing to hear a plea, directed the Federation of All India Vyapar Mandal to approach the high court against the 45-day payment rule under section 43B(H) of the I-T Act.

According to the report fromIndian Express, the Union ministry of MSME is learnt to have reached out to industry players for solutions. "It has asked stakeholders to suggest ways to resolve the issues arising from the I-T Act and to recommend possible alternate mechanisms for timely clearance of MSME bills."

Tax experts, however, are of the view that the payment timelines are unrealistic and the government needs to reconsider extending it to at least the time of filing of returns rather than at the end of a financial year, the report says.

This is the second time the ministry is reaching out to MSMEs. A fortnight after presenting the interim budget for 2024-25, it had formally written to MSMEs seeking comments on the new clause in section 43B of the I-T Act introduced in 2023-24 that aimed to secure timely payments for smaller units. A new clause (h) in section 43B allowed for deduction for larger companies against payments done to MSMEs only after they were actually paid. Larger companies were otherwise not allowed to make deductions in their tax returns, resulting in the prospect of increased tax liability.

This led to a peculiar problem, the newspaper says. "As balance sheets get audited in the assessment year 2024-25 for transactions in financial year 2023-24, bigger companies started flagging concerns about ballooning tax liability and many MSME owners too reported cancellation of orders due to the new tax clause."

"MSMEs also pointed to big companies shifting business to unregistered MSMEs, as it lends them the flexibility to not meet the mandatory provision and continue with a longer payment cycle of 90-120 days," the report says quoting people aware of the developments.

KE Raghunathan, national chairman of the Association of Indian Entrepreneurs, told the newspaper that "Many cancellations have been reported from MSMEs such as ancillary units and dedicated suppliers. Some corporations are also trying to force suppliers to cancel their MSME registration. Most people realised the full impact of the tax provision only towards January-end because they were supposed to get the payments by March 31 but did not. The earlier payment cycle between the buyer and the supplier would be longer, say 90 days or 120 days. But now companies don't want to buy from an MSME."

According to the report, the new provision has also unintentionally resulted in a competition between registered and unregistered MSMEs, with many smaller entities opting to de-register themselves to survive and not lose business. "They (companies) want to purchase goods from the MSMEs not having a registration. For small players, they have to supply, otherwise business will collapse. To avoid competition, MSMEs are surrendering their registrations," Jalapathi K, secretary of the Tamil Nadu and Puducherry Chartered Accountants' Association, told the newspaper.

Last month, more than 40,000 Indian small businesses, including 12,000 in Gujarat, have cancelled their registration and approached the Supreme Court with an appeal to remove the mandated rule to clear payments within 45 days, says a report from CNBC Tv 18.

Earlier, the Federation reached the apex court challenging section 43B(H) of the I-T Act, that limits MSMEs from extending credit to buyers beyond 45 days. Any buyer exceeding this limit faces tax penalties and compound interest charges at three times the bank rates notified by the Reserve Bank of India (RBI).

The petition filed by the Federation challenges the constitutionality of section 43 (B) (h), citing its detrimental impact on the entire business community, particularly Gujarat-based textiles, chemicals and engineering units.

Various industry associations have echoed these concerns to the Union government, highlighting the adverse effects of the provision on MSMEs and urging its reconsideration. (Read : Traders File Petition in SC against I-T Penalty Clause on MSME Credit to Buyers : Report)

While granting the Federation permission to withdraw their petition, the apex court provided the MSMEs with the liberty to pursue their case in the HC, says another report fromCNBCTv18.

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Developing Future with Solar Energy

Mr. Naitik Punamiya
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Solar energy is renewable, in-exhaustible and non-polluting. Hence, the world has perfect reason to switch to Solar energy. The target set by the Government to increase the solar power generation in India, has led to an unanticipated surge in the demand for solar panels, solar inverters, batteries and the most vital connecting link – Solar Cables. But, in a rush to grab huge market opportunities, market shelves are filled with non-standard solar cables. These look-alike constructions may absolutely be price competitive but cannot ensure reliability, safety and longevity of a solar power plant. As the integrity of whole project depends on these cables, it is meaningless to have price-oriented quality benchmarks.

This article shall surely help understand the importance of choosing correct solar cable to have a sustainable future with Solar energy.

Solar energy generation and utilization for mankind has been making headlines since the early 1930s. However, it indeed took more than 60 years to supply electricity to millions of human beings from renewable energy such as Solar. The world has shown its readiness to accelerate the transition towards global energy decarbonisation. Today human efforts are towards judicious utilization of finite fossil fuel and reduction in carbon footprints.

Solar energy can be considered as never a depleting source of clean energy for humans, since the Sun still has more than 5 billion years of life according to NASA. Every 24 hours, enough sunlight touches the Earth to provide the energy for the entire planet for 24 years. As per some publications, "the Earth's surface receives 120,000 Terawatts of solar irradiation, which represents 20,000 times more power than the whole planet needs."

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Solar energy is renewable, inexhaustible and non-polluting. It is versatile and can be applied for small scale areas isolated from network to large scale energy generation. Hence, this form of renewable energy has taken a central place in India's National Action Plan on Climate Change with National Solar Mission as one of the key Missions. The installed solar energy capacity has increased by 30 times in last 9 years and stands at 72.31 GW as of November 2023. Recently, the central government launches, 'PM Suryoday Yojna & PM Surya Ghar Yojna' which aims to add 30 GW of solar capacity through roof top in the residential sectors.

Impact of using a non-standard Solar Cable

India's Goal to reach 500 GW of renewable energy by 2030, has led to an unanticipated surge in solar power generation. This has further led to enormous demand for solar panels, solar inverters, batteries, performance monitoring systems and not to mention, the PV Solar cables. These cables constitute a very small percentage of the total project cost, however, the type and quality of the cables selected for the solar application, may directly impact the power output, performance, reliability and system safety.

The choice of components is critical in any PV system. Good quality and properly sized cables provide optimized safety and longer-lasting systems. Solar cables are often exposed to harsh environmental conditions – UV radiation, moisture, temperature fluctuations as well as wind, snow and rain. Spurious or low-quality cables can deteriorate quickly, thus reducing a system's power generation capacity and, therefore, its revenues. Every KW lost in generation due to poor quality cables is a loss in terms of return on investment. Cables are one of the first components of a system to show failures, causing power generation disruptions and implying high replacement costs related not only to the replacement of cables, but also, and mostly, to the works required and the possible collateral damages to panels or other components.

Fig -1 : Risk of failure by using a non-standard Solar Cable

Below instance clearly illustrates the impact of using spurious or non-standard cable with the PV solar installations.

Considering a power plant of size = 1 MW
Estimated investment required = ₹ 3 Crore
Estimated cost of non-standard cables (X) = ₹ 3 Lakh
Estimated cost of standardized cables (R) = ₹ 3.3 Lakh
Amount saved by choosing non-standard cable = ₹ 40 Thousand

Selecting cable X has saved 0.13 percent of the total project cost at the initial stage. However, these cables cannot withstand the harsh environmental conditions and severely impacts the entire operations and plant efficiency

Information Bulletin

National Conference on
Best Practices for Underground EHV Power Cables

(Under the aegis of CIGRE NSC B1 on Insulated Cables)

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Venue: CBIP Conference hall, New Delhi

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resulting in repair / replacement of the damaged cables and components, installations cost, down time and loss of energy production, only adding to the cost and compromising the reliability and safety of the entire project.

Estimated Repair cost = ₹ 2 Lakh
Cost of Cable R (Right) = ₹ 3.4 Lakh
Estimated loss of energy production = ₹ 75000
Total replacement cost = ₹ 6.15 Lakh

Initial saving from choosing the wrong cable X instead of standardized cable R ≈ ₹ 40 Thousand.

Repair cost due to failure caused by poor choice ≈ ₹ 6.15 Lakh.

Choosing a correct cable is often not considered a critical factor, however neglecting the same can be expensive and a compromise to the overall life of a solar power plant.

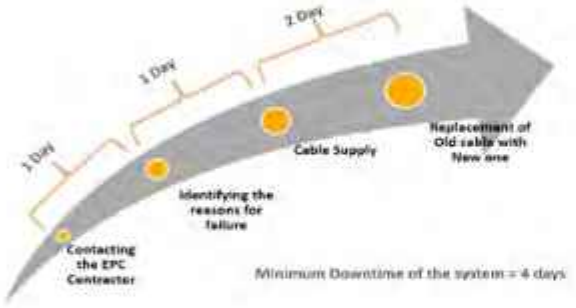

Fig-2 : Downtime due to replacement of non-standard Solar Cable

Solar Cable – IS 17293

Solar cables popularly known as DC cables are generally placed at an isolated location. They must survive constant high temperatures, UV radiations, ozone, mineral oils, acid, alkali, ammonia, and fire risks with a life expectancy of more than 25 years. The quality, safety and profitability of a solar plant or project depends on the workmanship and efficiency of the components used. These DC cables are the lifelines of Solar Power plant. Hence choosing an ordinary cable for such application may lead to high maintenance cost, reduced efficiency, and compromise in fire safety.

In a rush to grab huge business opportunity, market shelves are filled with non-standard solar cables. Cables with look-alike constructions may absolutely be price competitive but cannot meet the required technical parameters and the adverse environmental condition. When the integrity of the whole project depends on these cables, it is meaningless to have price-oriented quality benchmarks for solar cables. We need to ensure the correct cable with the updated applicable standards and requirements.

Solar cables marked with IS 17293 is offered with halogen free construction and complies to the most adverse environmental conditions. They maintain longevity performance and reliability of PV system. These cables provide excellent mechanical properties and superior weather resistance for outdoor installations. They are designed to operate at a maximum conductor temperature of 90°C, but for a maximum of 20,000 hours a max. conductor temperature of 120°C at a max. ambient temp. of 90°C is permitted.

Features of Solar Cable as per IS 17293:

- ✓ Ultraviolet (UV) resistant
- ✓ Weather (Ozone) resistant
- ✓ Damp-Heat resistant (tested for 1000 hours at 90°C and 85% humidity)
- ✓ Non-toxic & non-corrosive
- ✓ Smoke emission is negligible & transparent.
- ✓ Short Circuit Temperature of 250°C
- ✓ Excellent water resistant
- ✓ Acid and alkali resistant
- ✓ Ammonia resistant
- ✓ Self-extinguishing and flame retardant according to IS 10810 part 53 & IS 10810 part 62

Statutory Requirements

TÜV Rheinland's well established TUV 2PfG 1169 standard for PV (solar) cable has been withdrawn on October 27th, 2017. PV Solar cables with only these certificates can no longer be installed in PV systems.

The Quality Control Order (QCO) on DC Solar Cable released by the Ministry of Commerce & Industry on 24th August 2023, mandates the use of DC Solar cable marked with IS 17293 in India. Any person who contravenes the provisions of this Order shall be punishable under the provisions of the Bureau of Indian Standards Act, 2016.

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MINISTRY OF COMMERCE AND INDUSTRY
(DEPARTMENT FOR PROMOTION OF INDUSTRY AND INTERNAL TRADE)

ORDER

New Delhi, the 24th August, 2023

S.O. 3807(E).—In exercise of the powers conferred by section 16 of the Bureau of Indian Standards Act, 2016 (11 of 2016), the Central Government, after consulting the Bureau of Indian Standards, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following Order, namely:-

1. Short title and commencement. - (1) This order may be called the Solar DC Cable and Fire Survival Cable (Quality Control) Order, 2023.

(2) It shall come into force on the expiry of six months from the date of publication of this notification in the Official Gazette.

2. Compulsory use of Standard Mark. - Goods or articles specified in the column (1) of the Table shall conform to the corresponding Indian Standard mentioned in column (2) of the Table and shall bear the Standard Mark under a license from the Bureau of Indian Standards as per Scheme-1 of Schedule-II to the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018.

Provided that nothing in this order shall apply to goods or articles manufactured domestically for export.

3. Certification and enforcement authority. - The Bureau of Indian Standards shall be the certifying and enforcing authority for the goods or articles specified in the Table.

4. Penalty for Contravention. – Any person who contravenes the provisions of this Order shall be punishable under the provisions of the Bureau of Indian Standards Act, 2016.

Goods or articles	Indian Standard	Title of Indian Standard
(1)	(2)	(3)
Solar DC Cable	17293: 2020	Electric Cable for Photovoltaic Systems for rated voltage 1500 V DC
Fire Survival Cable	17505 (Part 1): 2021	Thermosetting Insulated, Fire Survival Cables for working voltages upto and including 1100 V AC and 1500 V DC

Fig 3: Extract from QCO on DC Solar Cable and Fire Survival Cable

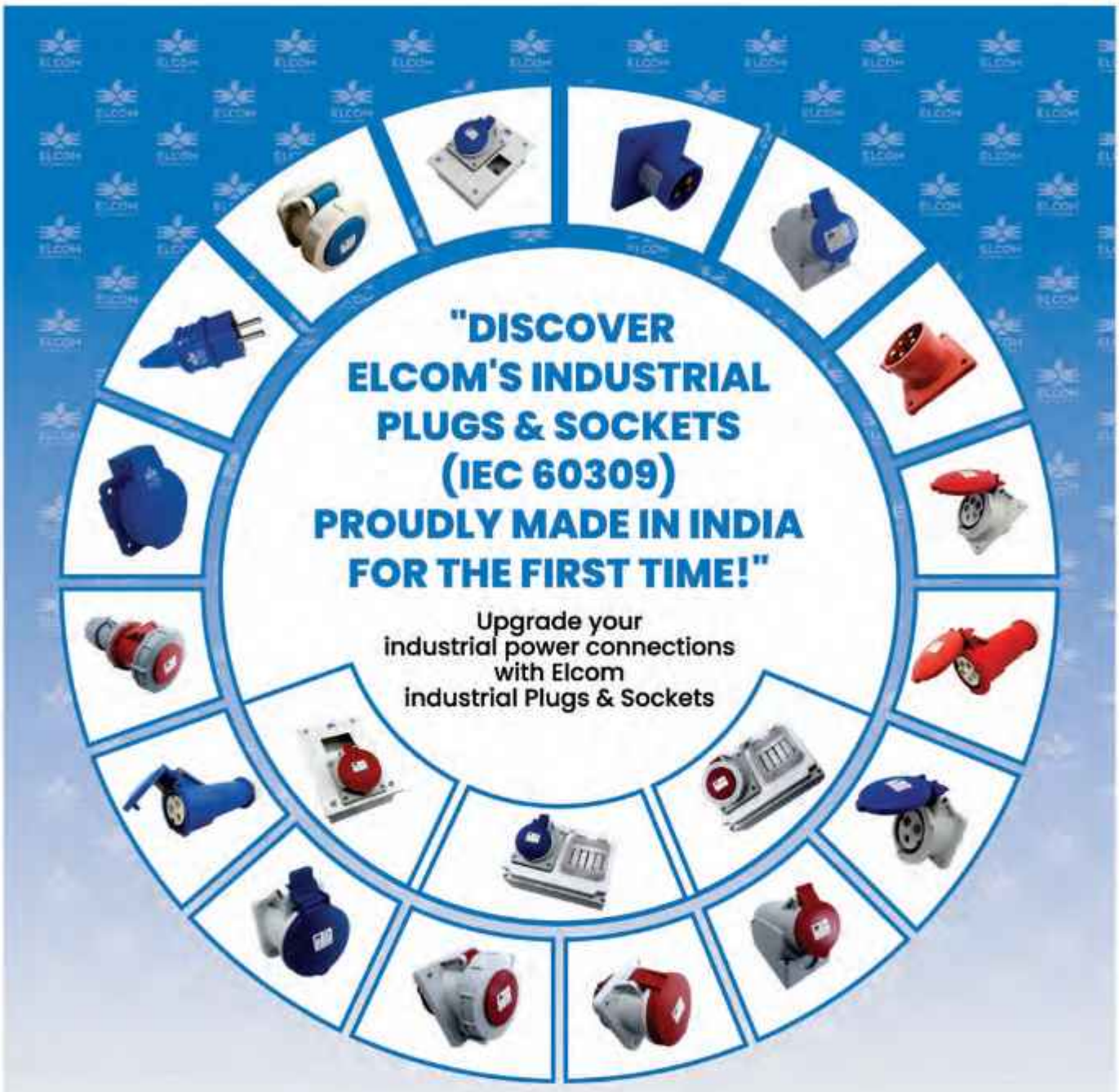
The National Electrical Code (NEC) 2023 released on 6th January 2023, also sets a new benchmark and mandates the use of DC Solar Cable as per IS 17293 in India.

4.9 Cables

4.9.1 *d.c. Cables*

All solar PV d.c. cabling shall comply with IS 17293. This standard applies to low smoke halogen-free, flame retardant, UV resistant, flexible, tinned-copper conductor, single-core, double insulated power cables with electron beam cross-linked (EBXL) insulation and sheath, for use at the d.c. side of photovoltaic systems, with a nominal d.c. voltage up to 1.5 kV between conductors and between conductor and earth and temperature rating of –40 °C to +90 °C.

Fig 4: Extract from National Electric Code - (Clause 4.9 of Part 8 of NEC SP30:2023)



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Conclusion:

As the world continues to witness a global shift towards an increasing demand for renewable energy, harnessing solar energy is an inevitable choice. The solar power plant has the potential to generate large amount of clean energy. Among all the components involved in a solar project, cable constitute a very small percentage. But they form a vital link ensuring longevity (minimum life should be 25 years), reliability and efficiency.

It is a high time that all the stakeholders should ensure the specification, purchase and installation of a correct solar cable which assures excellent performance even if those are used in adverse weather conditions throughout the life of a solar power plant.

Mr. Naitik Punamiya is the Head of Product Marketing at RR Kabel Ltd. and has been associated with the organization at various levels for more than 10 years. He is an electrical engineer with rich technical experience in design & development of special wires and cables. He is a part of core team at RR Kabel and instrumental in designing, developing and promoting various categories of wires and cables.

Mr. Punamiya has been a speaker at various National and International platforms and has been associated with the organizations and committees like FSAI, IEEMA, ECAM, COSMA, ELCA, AHSRAE, CREDAI, MES, CPWD, BARC, IITs, MOEE & MOC-Myanmar, Ministry of works, Bhutan, etc. He has many articles published and interviews to his credit across various prestigious journals, magazines and media houses. A passionate teacher and trainer, Mr. Punamiya has delivered more than 12000 manhours of training to various organizations, electrical consultants, contractors & electricians. He has addressed more than 5000 students covering 85+ schools and colleges across the nation on various topics.

Focus Areas

- Power Distribution Reforms, RDSS & Approval Process
- Power Quality Management
- Adaptability of New Energies
- R&D Innovation Drive, Smart Grid & Digitalization
- Safety, Quality & Reliability, Resilient Prosumer Infrastructure and Commercial e-mobility with its charging infrastructure.

Dignitaries & Key Delegates

- Policy makers, State and Private Utility officials
- Public Sector Officials
- IT / Software Technology Providers
- Regulatory Bodies, Energy Development Agencies
- OEMs and Solutions providers
- Standardisation bodies / Testing labs, System Integrators
- R&D and Technical Institutes
- Key officials from: Railways, Metro, Airport Authorities, Ports, Oil sectors PSU, MEP Consultants, Electrical Consultants and Contractors

Key Takeaways

- State Power Sector Growth Plan covering operational efficiencies (including RDSS)
- State EV Policy & EV Charging Roadmap
- New Business Opportunities in Railways, Metro, Smart City etc.,
- Development in Academia / Institutions in R&D for partnering with Industry
- Start-up initiatives & prospects in the State

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महावितरणच्या प्रशिक्षण केंद्रांत

पुणे परिमंडल सलग दुसऱ्यांदा अव्वल

श्री राजेंद्र पवार
मुख्य अभियंता महावितरण पुणे

पुणे : महावितरणच्या राज्यभरातील २५ लघू प्रशिक्षण केंद्रांच्या सन २०२३-२४ च्या कार्य मूल्यमापनाचा अहवाल नुकताच जाहीर झाला. यात पुणे परिमंडलाच्या लघू प्रशिक्षण केंद्राने सलग दुसऱ्या वर्षी तब्बल १८४ टक्के उद्दिष्ट पूर्ण करीत अव्वल क्रमांक कायम ठेवला आहे. नागरिक, विद्यार्थी, विविध एजन्सीजचे कर्मचारी यांच्यासह महावितरणचे अभियंता, अधिकारी व कर्मचाऱ्यांचे प्रशिक्षण, कार्यशाळा, प्रबोधन व जनजागृतीसाठी पुणे परिमंडलाने प्रथम क्रमांक पटकावला आहे.

महावितरणअंतर्गत नाशिक येथील मुख्य प्रशिक्षण, संशोधन व सुरक्षा विभाग अंतर्गत राज्यात २५ ठिकाणी लघु प्रशिक्षण केंद्रे सुरू आहेत. पुणे परिमंडलाचे मुख्य अभियंता राजेंद्र पवार यांनी प्रशासकीय कामकाज अधिक गतिमान करण्यासाठी प्रशिक्षणाला मोठा वेग दिला आहे. त्यानुसार लघू प्रशिक्षण केंद्राचे समन्वयक डॉ. संतोष पाटणी यांनी गेल्या आर्थिक वर्षामध्ये तब्बल १४९ प्रशिक्षण वर्गांचे आयोजन केले. राज्यात सर्वाधिक ५३ हजार ७०० अभियंता, अधिकारी, कर्मचारी, विद्यार्थी, नागरिकांशी थेट संवाद साधून वीजसुरक्षेसह विविध विषयांवर प्रशिक्षण दिले आहे. मुख्य प्रशिक्षण केंद्राने दिलेले उद्दिष्ट पुणे लघु प्रशिक्षण केंद्राने १८४ टक्के पूर्ण करीत राज्यात प्रथम क्रमांक मिळविला आहे. यासाठी मुख्य महाव्यवस्थापक दत्तात्रेय बनसोडे (नाशिक) यांचेही महत्त्वाचे सहकार्य मिळाले.

डॉ संतोष पाटणी
उपकार्यकारी अभियंता
महावितरण प्रशिक्षण केंद्र, पुणे

सन २०२३-२४ मध्ये पुणे परिमंडलातील ४ हजार ६१२ अभियंते, अधिकारी तसेच नियमित व बाह्यस्रोत कर्मचारी तसेच मीटर रीडिंग, सौरऊर्जा एजन्सीजच्या कर्मचाऱ्यांना प्रशिक्षण देण्यात आले. तसेच घरगुती व सार्वजनिक वीजसुरक्षा, डिजिटल ग्राहकसेवा, वीजबचत आदींबाबत शहरी व ग्रामीण भागात मेळावे, पथनाट्य, शाळा व महाविद्यालयांमध्ये प्रशिक्षण वर्गाद्वारे प्रबोधन करण्यात आले. या विद्युत अभियांत्रिकीच्या ९ हजार ५०० विद्यार्थ्यांशी थेट संवाद साधून नॉलेज शेअरिंग करण्यात येत आहे.

टाटा पॉवरची दोन प्रकल्पांमुळे राज्यात हरित ऊर्जा क्रांती

मुंबई, प्रतिनिधी मुंबईकरांना हरित ऊर्जा संपन्न करण्यासाठी टाटा पॉवरच्या माध्यमातून महाराष्ट्रात पर्यावरणपूरक पवन आणि सौरऊर्जा पार्क उभारत ऊर्जानिर्मिती क्षेत्रात लक्षणीय आघाडी गाठली आहे. साताऱ्यातील आगासवाडी पवन ऊर्जा प्रकल्पामध्ये टाटा पॉवरने नैसर्गिक वाऱ्यांच्या गतीज ऊर्जेचा वापर केला असून वर्षाला जवळपास १०० मिलियन युनिट्स (केडब्ल्यूएच) वीज निर्माण केली जाते.

सातारा जिल्ह्यातील माण तालुक्यामध्ये असलेल्या ४९.५ मेगावॅट क्षमतेच्या पवन ऊर्जा प्रकल्पामध्ये ३३ रिजेन मेक मॉडेल व्ही-७७च्या १५०० केडब्ल्यू क्षमतेच्या पवनचक्क्या बसविण्यात आल्या आहेत. पवन ऊर्जा तंत्रज्ञान केंद्र आणि महाराष्ट्र ऊर्जा विकास अभिकरण यांच्या मार्गदर्शक तत्त्वांना अनुसरून, बिनशेती जमिनीवर वाऱ्याची इष्टतम घनता असलेल्या मोक्याच्या ठिकाणी हा प्रकल्प उभारण्यात आला आहे.

याठिकाणी अतिशय कार्यक्षम ऊर्जा निर्मिती केली जाते. हा प्रकल्प उभारताना वाहतूक आणि पायाभूत सोयीसुविधांच्या बांधकामासहित इतर अनेक आव्हाने होती. मात्र, यावर मात करत आगासवाडी पवन ऊर्जा प्रकल्पामध्ये दरवर्षी अंदाजे ७० हजार, ३०० टन कार्बन उत्सर्जन ऑफसेट केले जाते. 'एमएसईटीसीएल' आणि ङ्गएमएसईडीसीएलफ ग्रिड्सना ऊर्जा पाठवणारा हा पवन ऊर्जा प्रकल्प या क्षेत्रातील शेती आणि ग्रामीण समुदायासाठी महत्त्वाचा ऊर्जा स्रोत बनला आहे. पळसवाडी सौर प्रकल्पामध्ये दरवर्षी जवळपास १०० मिलियन युनिट्स शुद्ध ऊर्जा निर्मिती केली जाते.

मुंबई लोड सेंटरची मागणी पूर्ण करण्यासाठी अतिशय मोक्याच्या ठिकाणी बसवण्यात आलेल्या या सौर प्रकल्पामुळे दरवर्षी अंदाजे ७० हजार टन कार्बन उत्सर्जन ऑफसेट केले जाते. उपकरणांची वाहतूक, कुशल मनुष्यबळाची उपलब्धता अशा अनेक अडचणी येऊनदेखील पळसवाडी सौर प्रकल्प या क्षेत्राच्या ऊर्जा मागण्या पूर्ण करतो. तसेच, कार्बन फूटप्रिंट्स कमी करण्यात लक्षणीय योगदान देतो.

आगासवाडी पवन ऊर्जा प्रकल्प आणि पळसवाडी सौर ऊर्जा प्रकल्प टाटा पॉवर मुंबई डिस्ट्रिब्युशन तसेच 'सोलार एनर्जी कॉर्पोरेशन ऑफ इंडिया'ला ऊर्जा पुरवतात. विविध श्रेणींमधील ग्राहकांना पर्यावरणपूरक ऊर्जा सुविधा पुरविण्यातील त्यांचे महत्त्व यातून दिसून येते. नूतनीकरणीय ऊर्जा उपक्रमांसाठी टाटा पॉवर सातत्याने प्रयत्नशील आहे. पर्यावरणाचे संवर्धन आणि संरक्षण तसेच प्रकल्पांच्या आजूबाजूच्या समुदायांच्या आर्थिक विकासाला चालना देण्याप्रती कंपनीची वचनबद्धता त्यांच्या नूतनीकरणीय ऊर्जा उपक्रमांमधून ठळकपणे दिसून येत आहे.

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We can support the electrical contractors for the reactive power requirement

- Sony Jacob
CEO & Founder
Power Matrix Solutions Pvt Ltd

- **Electrical consultant association of india has organised this exhibition El Asia in Bangalore. What is your expectation?**
  Providing a demonstration of the best in class solutions available for power quality improvement.
  Communicating to the market and the visitor segment about the basic features that they should expect from any manufacturer who would be providing them a solution.
  Educating how the IS 16636 type test standard enables the engineering of the Apfc panels be better
- **Any new launches here? Or any new business development? Or any new plans? Please explain.**
  Our intention here is part of our strategy for geographical expansion and south is priority 1 for expansion. Chennai Telangana AP and Bangalore
- **Are you exporting your products? How is the response in the international market? Do you have any suggestions for government?**
  Yes we are exporting marginally. our product quality is international quality and hence acceptance is very high. But our focus is India till 2027
- **As you know, we are representing electrical contractors. What do you expect from us? How we can co operate each other?**
  Electrical contractors depend on the technical specification handed out to them and very few of this segment have a technically qualified team to understand the exact delivery requirement for the project .. we can support the team for the reactive power requirement and power quality and support them for any technical queries
- **Are you interested in organising seminars, workshops or factory visits of electrical contractors to understand your products and services?**
  Yes, definitely
- **Please tell us about your hobbies, travelling, art, culture, csr etc.**
  Building PMX

सार्वजनिक बांधकाम विद्युत खात्यात काम करणाऱ्या ठेकेदारांच्या विविध अडचणींबाबत, इकॅमचे पत्र

इकॅम/सा.बां.खाते/२०२४/३७४ दिनांक : ०२.०५.२०२४

प्रति,

मा.अधिक्षक अभियंता,

सार्वजनिक बांधकाम खाते (विद्युत) प्रादेशिक मंडळ,

मुंबई/नागपुर/पुणे/नांदेड.

विषय – सार्वजनिक बांधकाम विद्युत खात्यात काम करणाऱ्या ठेकेदारांच्या विविध अडचणींबाबत

महोदय,

उपरोक्त विषयास अनुसरून संघटनेकडे विविध ठेकेदारांच्या अडचणींबाबत कळविण्यात आले आहे. त्या खालील अडचणी आपणास आम्ही निदर्शनास आणू इच्छितो व आपणाकडून त्या सोडविण्यास मदत होईल अशी आपणास विनंती करतो.

१. सध्या बाजारामध्ये Copper/Aluminum/Iron & PVC च्या दरात सातत्याने वाढ होत आहे, तसेच कामे करण्याकरता कुशल/अकुशल मनुष्यबळाचे दर मोठया प्रमाणात वाढलेले असल्याने सध्या प्रचलित असलेल्या CSR मध्ये ४०% ते ५०% वाढ करून मिळणे अपेक्षित आहे. जेणेकरून आमच्या ठेकेदारांना कामे करण्यास अडचणी येणार नाहीत.

२. इमारतीचे अथवा इतर तत्सम बांधकामाच्या पूर्णत्वाअभावी किंवा सदर कामांना निधी अभावी विलंब होत असेल तर ठेकेदाराच्या विनंतीनुसार व आपणातर्फे परिस्थितीचे अवलोकन करून सदरहु कामास ठेकेदाराच्या Bid Capacity मध्ये धरण्यात येऊ नये व अशा कामाकरिता Price Variation Clause लागू करण्यात यावा हि विनंती.

३. MSME Registered Contractors साठी नियमानुसार Suppliers चे Payment 45 दिवसात देणे बंधनकारक असल्याने सदर ठेकेदारांच्या कामाचे देयक प्रचलित चडचए कायद्यानुसार देण्यात यावे.

४. मा. अधिक्षक अभियंता, दक्षता गुण नियंत्रण मंडळामार्फत मुख्य अभियंता (विद्युत) यांनी मान्यता दिलेल्या विद्युत साहित्यास वापरण्याची मुभा देण्यात यावी.

५. पूर्ण झालेल्या कामाचा दोष दायित्व कालावधी पूर्ण झाल्यावर ठेकेदाराच्या विनंतीनुसार SD (सुरक्षा अनामत) ताबडतोब परत करावी. सन २०१४ पासून निविदा सुरक्षा अनामत व Online/Offline पध्दतीने भरलेली निविदा इसारा रक्कम विभागीय कार्यालयांकडे प्रलंबित आहेत त्या तत्काळ मिळणेबाबत विनंती.

६. Civil Electrical एकत्रित निविदेची मर्यादा सध्या 15 Cr. रूपयांपर्यंत आहे. ती मर्यादा रूपये 50 Cr. पर्यंत वाढवून मिळावी व सदर निविदेतील विद्युत काम हे IE Rule नुसार विद्युत ठेकेदारामार्फतच करून घेणे बंधनकारक आहे, त्याबाबतची काटेकोरपणे अंमलबजावणी करण्यास आपले सहकार्य अपेक्षित आहे.

७. SR ची कामे करताना अनेक अडचणी येत असल्या कारणामुळे व सदर कामास मर्यादित निधी उपलब्ध होत असल्याने, ही कामे केल्यानंतर त्यांची देयके वर्षानुवर्षे प्रलंबित असतात, त्यामुळे सदर कामांसाठी CSR मध्ये अतिरिक्त दर वाढवून देण्याची तजवीज असावी व त्याबाबतची नोट CSR मध्ये नमूद करण्यात यावी ही विनंती.

८. आपल्या विभागामार्फत बल्क निविदा निघत असतात, त्यात सर्व कामे समाविष्ट असतात (Electrical, Lift, Fire Fighting) असे Combine निविदा निघत असतात. त्या वेगवेगळया काढण्यात याव्या कारण प्रत्येक कामासाठी शासनाकडून वेगवेगळे Licence दिले जातात, त्यामुळे आमच्या ठेकेदारांना विविध Agency कडून MOU करावे लागतात व मगच आम्हाला निविदेमध्ये भाग घेता येतो. अशा वेळेस त्या Agency ने MOU करण्यास नकार दिला तर आम्हाला निविदेमध्ये भाग घेता येत नाही. त्यामुळे आमच्यावर उपासमारीची वेळ येऊ शकते.

तरी महोदयांना विनंती करतो की, आमच्या वरील बाबींचा सहानभूतीपूर्वक विचार करून आम्हाला त्या सोडवण्यासाठी मदत करावी, हि नम्र विनंती.

धन्यवाद

आपले विश्वासू,

वामन भुरे
अध्यक्ष, इकॅम

देवांग ठाकूर,
महासचिव, इकॅम

प्रविण बडगुजर, चेअरमन
इकॅम – सार्वजनिक बांधकाम खाते समिती

TABLE - 1

TRANSFORMER AND LT DG SET NEUTRAL EARTHING SIZE

Transformer rating	Electrolytic bare copper conductor or strip	Insulatd (PVC) Single Core Stranded Aluminimum	Galvanised Iron Conductor or strip
50kVA & below	8 SWG	16 Sq.mm	25mm x 3mm
75 kVA	8 SWG	25 Sq.mm	40mm x 6mm
100 kVA	4 SWG	35 Sq.mm	40mm x 6mm
150 kVA	2 SWG	70 Sq.mm	40mm x 6mm
200 kVA	25mm x 1.5mm	95 Sq.mm	40mm x 6mm
250 kVA	25mm x 3mm	150 Sq.mm	40mm x 6mm
300 kVA	25mm x 3mm	225 Sq.mm	40mm x 6mm
500 kVA	25mm x 6mm	300 Sq.mm	50mm x 6mm
750 kVA	25mm x 6mm	300 Sq.mm	Above 500 kVA only Copper/ Aluminium

Above 750 kVA size of earth lead to be determined as per Bureau of Indian Standard 3043

EMERGENCY LIGHTS FOR ANYONE AND EVERYONE-PROLITE TICKS ALL BOXES

Emergency lighting is not just a major component of a building's life safety systems, but perhaps one of the most important, which is precisely why NBC makes its installation mandatory. Emergency lights provide a minimum level of visibility to help direct the building's occupants safely out in desperate moments. Moreover, it also helps personnel and emergency responders locate safety equipment, perform safety functions, or shut down hazardous equipment or operations.

Just imagine, if housing complexes, schools, hospitals, hotels, malls, railways, metros, airports, etc didn't have any Signages/ Emergency Lights. Not only will we be lost, but God forbid if we are caught in a mishap or a stampede situation in such huge places, we just wouldn't know how to manage and exit the place safely.

These Signages/Emergency lights are not just for our guidance in day-to-day life, they will come in handy when we need them to get through any life-threatening incident, and to identify all the essential fire safety equipment and escape route.

It is therefore crucial that the parameters to judge emergency lights to install in any place must be considered before you install them. The NBC has laid down certain rules but these are broad in nature. To be sure, you will need to delve into the specifics. How durable is the product? How reliable is the product? Does it conform to specifications as mandated by the local authorities? What is the after sales service like? Prolite is the best choice because it alone ticks all those boxes.

Prolite has moved with the times. It has won awards for innovation TWICE because of this only. Changing situations require changing solutions. For example, Prolite's flame proof range was designed for the purpose of allowing clear visibility and accessibility in fire accidents involving strong and intense flames. In a workplace where the fire risk is great and houses material likely to intensify fires to higher degrees, then flameproof lights are a must to ensure optimum safety.

We do produce and craft products that will ensure optimum safety. Our products are Fire Proof, Flame Proof, and Weather Proof as well. More and more people should be aware of this. The only way out is by being well equipped and spreading the word for others to do the same.

MECO DIGITAL CLAMPMETER – MODEL DTT 266

MECO introduced new 3½ Digit 2000 Counts Digital Clamp Meter (Model: DTT 266) having Current Range up to 1000A AC, Voltage Range up to 1000V DC & 750V AC and Resistance Range up to 20K Ohms.

It has special features like Data Hold, Audible Continuity and Low Battery Indication.

Meter comes with Overload Protection & Over Voltage Protection for maximum safety. This Clamp Meter can be used for Cable Dia. 53mm (Max.).

Accessories : One Pair of Test Leads, Instruction Manual, Carrying Case for Safe Keeping, Wristlet for Easy Handling, 9V Battery (installed) x 1

For details please visit our website: www.mecoinst.com

Email: sales@mecoinst.com

Mobile No : 9323332435

Avaada Energy secures 1,050 MWp solar power project from NTPC

The company has secured the solar project, which is expected to be completed within 24 months of signing the 25-year power purchase agreement, at a competitive tariff of ₹2.69 per kWh

Avaada Energy on Thursday announced that it has bagged a 1050 MWp (megawatt peak) solar project in a recent tender issued by state-run power producer NTPC.

The company has secured the solar project at a competitive tariff of ₹2.69 per kWh, which is expected to be completed within 24 months of signing the 25-year power purchase agreement (PPA).

With this, Avaada Energy has reached a portfolio of 15 GWp in India, it said in a statement.

Vineet Mittal, chairman of Avaada Group, said, "We are incredibly proud to have won the single largest bid of 1050 MWp from NTPC. This achievement not only highlights our capability to execute large-scale renewable energy projects but also reinforces our commitment to supporting India's transition to a sustainable energy future. Crossing over 15 GWp portfolio is a testament to our team's hard work, innovative approach, and dedication to excellence." Megawatt peak refers to the maximum power output capacity of a project. It is used in the case of solar, as the power output varies through the day depending on the sunlight.

Upon commissioning, the solar project is expected to generate approximately 1,800 million units of renewable energy annually, significantly contributing to India's green energy supply and powering more than 12,00,000 households.

Big on carbon reduction

The statement said that the project is expected to play a significant role in reducing carbon emissions, with an expected annual CO_2 reduction of approximately 16,81,200 tonnes, aligning with India's climate objectives. This project will add substantial value to Avaada's growing footprint in the renewable energy landscape.

Avaada Group is present in renewable energy generation, manufacture of solar photo-voltaic modules, development of green fuels including green ammonia, green methanol and sustainable aviation fuel, and energy storage solutions.

पुण्यातील AISSMS अभियांत्रिकी महाविद्यालयात विद्यार्थ्यांतर्फे नाविन्यपूर्ण प्रकल्पांचे प्रदर्शन

नुकतेच म्हणजे सोमवार, दि. १५ एप्रिल २०२४ रोजी AISSMS कॉलेजमधील विद्युत अभियांत्रिकी विभागातर्फे विद्यार्थ्यांच्या राज्यस्तरीय स्पर्धा घेण्यात आल्या. या स्पर्धांमध्ये पुण्यासह राज्यातल्या विविध महाविद्यालयातील विद्युत अभियांत्रिकीच्या शेवटच्या वर्गात शिकणाऱ्या सुमारे शंभरहून अधिक विद्यार्थ्यांनी भाग घेतला. या स्पर्धेमध्ये एकूण १७ ग्रुप 'ऑफ लाईन' पद्धतीने आणि १० ग्रुप 'ऑन लाईन' पद्धतीने सामील झालेले होते. विद्युत अभियांत्रिकीच्या १७ ग्रुपमधील विद्यार्थ्यांनी त्यांनी केलेल्या नाविन्यपूर्ण प्रकल्पांचे प्रत्यक्ष प्रदर्शन भरवलेले होते. आणि १० ग्रुप मधील विद्यार्थ्यांनी ऑन लाईन पद्धतीने त्यांचे प्रकल्प सादर केलेले होते.

सर्वप्रथम सकाळी १० वाजता या प्रदर्शनाचे आणि कार्यक्रमाचे उदघाटन प्रमुख पाहुणे विद्युत सुरक्षा मंचाचे संस्थापक सदस्य आणि इलेक्ट्रिकल कॉन्ट्रॅक्टर्स असोसिएशनच्या (ECAM) पुणे विभागाचे माजी अध्यक्ष श्री राजीव जतकर यांनी केले. विद्यार्थ्यांनी केलेल्या नाविन्यपूर्ण अशा प्रकल्पांची पाहणी करून त्यांनी विद्यार्थ्यांशी संवाद साधला. प्रकल्पातील तांत्रिक गुंतागुंत, प्रकल्पांची व्यवहार्यता, प्रकल्पांचे सादरीकरण, नवकल्पना वगैरे निकषांवर श्री जतकर आणि त्यांच्या टीमने सर्व प्रकल्पांचे मूल्यमापन केले. या मूल्यमापन प्रक्रियेमध्ये इलेक्ट्रिकल कॉन्ट्रॅक्टर श्री अजय सातपुते, महाविद्यालयाचे प्राध्यापक श्री. कुलकर्णी, श्री. चौधरी यांचाही सहभाग मोलाचा होता. स्पर्धेमध्ये सादर करण्यात आलेले सर्वच प्रकल्प अप्रतिम असल्याकारणाने, बऱ्याच विचारमंथनानंतर अतिशय उत्साहाच्या वातावरणात स्पर्धेचा निकाल जाहीर करण्यात आला. विशेष म्हणजे या स्पर्धेमधील मुलींनी बाजी मारली.

प्रथम पुरस्कार पुण्यातील मॉडर्न कॉलेज ऑफ इंजिनियरिंगच्या कु. निकिता पवार आणि ग्रुपला मिळाला. या मुलींनी 'पवन ऊर्जा रूपांतरण प्रणालीसाठी पवन टर्बाईन इम्युलेटरचा विकास' या साठी सादर केलेल्या प्रकल्पाला प्रमाणपत्रासहित रु. २०००/- रोख असे पारितोषिक देण्यात आले. द्वितीय पारितोषिक मॉडर्न कॉलेजच्याच निखिल सिंग आणि ग्रुपला प्रमाणपत्र आणि रु. १५००/- रोख अशा स्वरूपात मिळाले. या मुलांनी 'पोर्टेबल ग्रीन हायड्रोजनची निर्मिती आणि साठवणूक' या विषयावरील नाविन्यपूर्ण प्रकल्प सादर केला होता. तिसरे पारितोषिक पुणे विद्यार्थी गृह कॉलेज ऑफ इंजिनियरिंग च्या कु. प्रतीक्षा काटकर आणि ग्रुप ने पटकावले. या ग्रुपला 'रियल टाइम इन्साईट्स आणि कंट्रोल फॉर मोटार पॅरामीटर्स मॉनिटरिंग' या विषयावर सादर केलेल्या प्रकल्पासाठी प्रमाणपत्र आणि रु. १०००/- रोख असे पारितोषिक प्रदान करण्यात आले.

कार्यक्रमाच्या शेवटी AISSMS कॉलेज ऑफ इंजिनियरिंगचे प्रिन्सिपॉल डॉ. डी. एस. बोरमाने, तसेच श्री राजीव जतकर यांची विद्यार्थ्यांसाठी मार्गदर्शनपर भाषणे झाली. डॉ. बोरामने यांनी 'अशा स्पर्धात्मक कार्यक्रमांच्या आखणीमुळे विद्यार्थ्यांमध्ये सांघिक काम (Team Work), समस्यांचे निराकरण, संशोधन कौशल्ये, प्रकल्प व्यवस्थापन, संवाद कला, सादरीकरण असे अनेक गुण विकसित होतात' असे प्रतिपादन केले. विद्युत सुरक्षा मंचाचे श्री राजीव जतकर यांनी यशस्वी विद्यार्थ्यांचे अभिनंदन करताना 'अशा स्पर्धात्मक वातावरणामुळे विद्यार्थ्यांची वैयक्तिक कौशल्ये वाढीस लागतात. कॉलेजमधील अशा स्पर्धांच्या नियोजनामुळे ह्या स्पर्धा म्हणजे विद्यार्थ्यांसाठी एक परिवर्तनकारी अनुभवच असतो' असे सांगत AISSMS कॉलेज चे विशेष कौतुक आणि अभिनंदन केले.

ह्या स्पर्धात्मक कार्यक्रमाचे नियोजन AISSMS कॉलेजच्या विद्युत विभाग प्रमुख (HOD) प्रो. सौ. ए. ए. गोडबोले, समन्वयक प्रो. सौ. व्ही. एन. तरंगे, प्रो. सौ. एस. एस. पैठणकर यांनी विशेष परिश्रम घेतले.

ReNew, Waaree and First Solar Lead Solar Manufacturing Capacity Additions in 2023

ReNew, Waaree Energies, First Solar, Adani Solar, and Emmvee Photovoltaic Power led the annual solar module manufacturing capacity additions in the calendar year (CY) 2023, according to Mercom's India Solar Market Leaderboard Report 2024.

India added 20.8 GW of solar modules and 3.2 GW of solar cell production capacity in CY 2023, according to Mercom's State of Solar PV Manufacturing in India 2024 report.

The country's cumulative solar module and cell manufacturing capacity reached 64.5 GW and 5.8 GW, respectively, as of December 2023. Of the installed module manufacturing capacity, about 60% was equipped to make modules in M10 and G12 wafer sizes.

As of December 2023, monocrystalline modules accounted for 67.5% of the country's module production capacity, followed by polycrystalline, Tunnel Oxide Passivated Contact (TOPCon), and thin-film.

ReNew and Waaree Energies led the capacity additions, each accounting for 19% of the total capacity additions during the year. First Solar, Adani Solar, and Emmvee Photovoltaic Power rounded off the top five.

The top five manufacturers accounted for 72% of the production capacity additions in CY2 2023.

ReNew's newly commissioned manufacturing unit in Jaipur, Rajasthan is spread across 22 acres and can produce ~15,000 solar modules/day.

Waaree Energies added 4 GW of module manufacturing capacity in Q1 2023. The company announced the expansion in December 2022, enabling the company to increase its production of modules rated up to 650 Wp.

First Solar commissioned its thin-film module manufacturing unit in Tamil Nadu in Q4 2023. The facility has a nameplate capacity of 3.3 GW. The unit involved an investment of approximately $700 million (~57 billion).

India's module manufacturing capacity is expected to surpass 150 GW, and cell capacity will likely reach over 75 GW by 2026. The monocrystalline is expected to account for a majority of the annual module production capacity (although declining), followed by TOPCon, Heterojunction (HJT), and other technologies.

Modi govt's new solar scheme has three big hurdles

Lakshmi Narayan was one of the first to see the light: in 2020 the engineer put solar panels on his roof in India's Bhopal city, becoming a clean energy pioneer because of his desire to help his country move away from

planet-heating fossil fuels.

"I understand the importance of renewable energy and thought that everyone should adopt it," said Narayan, 60, whose action inspired many others to do the same in the capital of Madhya Pradesh state in central India.

Now, a new government scheme - unveiled before voting began in nationwide elections in April - aims to encourage more people to install solar panels on their roofs as part of India's commitment to triple renewable capacity by 2030.

The new programme, launched in February, provides 75 billion rupees ($9 billion) in subsidies to install grid-connected rooftop solar systems on around 10 million homes, allowing consumers to reduce their electricity bills when the sun shines and sell extra units to the grid to earn some money.

It is expected to create 30 gigawatts (GW) of solar capacity in homes, leading to a reduction of 720 million tonnes of CO_2 equivalent planet- heating emissions over the 25-year lifespan of the rooftop systems.

"I want three things. Every household's power bill should be zero; we should sell surplus electricity and earn money; and I want to make India self-reliant in the energy sector as we transition to the era of electric vehicles," Prime Minister Narendra Modi said in a televised interview in late April.

The process, which was previously complicated and fragmented, has been simplified with the creation of a one-stop online portal to smooth applications and facilitate installations. Subsidies are deposited directly into people's bank accounts.

Russia Offers Floating Nuclear Plant Technology to India: A Game Changer for Sustainable Energy

In a strategic move to bolster energy cooperation, Russia has extended an offer to India for the deployment of its advanced floating nuclear power plant (FNPP) technology This development, highlighted in a recent announcement, could mark a significant shift in India's approach to sustainable and reliable energy production Russia's proposal involves providing India with cutting-edge FNPP technology, which is designed to deliver stable and efficient power to coastal and remote regions. This technology, first successfully deployed in Russia's Arctic region, promises to address some of India's most pressing energy challenges.

Floating nuclear power plants are essentially mobile, sea-based platforms equipped with small nuclear reactors. These plants can be positioned off the coast and connected to the onshore power grid. FNPPs can be relocated based on regional energy needs, offering a versatile solution to energy distribution challenges

Built to withstand harsh marine environments, FNPPs incorporate multiple safety measures to prevent nuclear accidents. These plants produce minimal greenhouse gas emissions compared to fossil fuel-based power generation, aligning with global sustainability goals.

Russia's Rosatom State Atomic Energy Corporation has been at the forefront of developing and deploying FNPP technology. The Akademik Lomonosov, the world's first operational FNPP, has successfully provided power to Russia's Chukotka region since 2019

The offer also carries strategic and geopolitical dimensions. Strengthening energy ties with Russia could enhance bilateral relations and open avenues for further collaboration in other sectors. However, India must balance this partnership with its existing energy collaborations and geopolitical considerations

India overtook Japan to become the third-largest solar power generator in 2023, providing 5.9% of global growth in solar, a report by think tank Ember said on May 8. But Ember noted that wind, solar and other low-carbon sources are not yet growing fast enough to meet India's rising electricity demand.

The new rooftop solar programme is meant to boost that growth but Narayan's experience offers a cautionary tale.

He says the new online portal will provide answers to a lot of the bureaucratic headaches that used to bedevil the process but, in his experience, the bigger challenge is getting the electricity distribution companies, or DISCOMs, on board.

A December 2023 study by the Centre for Science and Environment (CSE), a Delhi-based think tank, said DISCOMs were supposed to provide seamless access and connectivity for rooftop solar systems to the national grid but that this was sometimes "in direct conflict with business interests of the companies".

Narayan said that although he saved up to 250,000 rupees ($2,996) in electricity bills over three years thanks to his 6 kilowatt (KW) solar system, selling excess electricity to the grid proved to be problematic with debt-ridden DISCOMs proving ineffective partners.

"The electricity distribution company charges me 8 rupees for each unit that I consume from the grid, but for the surplus solar electricity that I sell back to the grid, they pay me 1.5 rupees per unit. How is that fair?"

And he said that the distribution company added a fixed charge of 500 rupees to his monthly bill after he installed the panels.

"They said that this is the minimum amount we will charge you even if your bill is zero," he said, adding that he got no answer when he enquired about the reason for the new tariff.

DISTRIBUTION CHALLENGES, LACK OF SKILLS

The pledge to cut electricity bills by boosting the solar power sector was a key election promise from Modi's ruling Bharatiya Janata Party and reflects India's long-term commitment to boost renewables.

In 2015, India promised to install 40 GW of rooftop solar capacity by 2022 but progress has been slow. By the end of 2023, it had only installed 11 GW, including 3 GW in homes with the rest in commercial or industrial properties.

That original commitment has now been revised to 100 GW of rooftop solar installations by 2026, 40 GW of which would come from the residential sector alone.

Energy experts say India's solar drive is hampered by fears of DISCOMS losing income, a shortage of skilled workers to make, install and service solar panels, and the proliferation of substandard products.

Danish Ali, who has installed a 4 KW solar system on his roof in Lucknow in northern India, said another problem arose from the fact that the grid- connected solar systems cannot deliver power during outages unless they have a separate battery to operate them.

"In areas where there are long power cuts, grid-connected systems will not work because they do not provide any power back-up," the 50-year- old said.

Ali has to endure up to two hours of power outages a few times a week during peak summer months when temperatures regularly rise above 40 degrees Celsius (104 Fahrenheit).

He said that adding a battery to the grid-connected system could solve the problem, but the government subsidy does not cover the installation of such hybrid systems.

Shreya Mishra, CEO of Mumbai-based SolarSquare Energy, which installs solar panels and is one of India's largest rooftop solar companies, said the industry could be on the brink of a boom; in 2023, 150,000 rooftop systems were installed and there are plans to target 2.5 million houses this year, she said.

"The programme has turned rooftop solar into a dinner table conversation that has turbocharged the consumer interest," she said.

But more training is needed for workers in these new green jobs and domestic manufacture of solar panels must also be ramped up, she added.

The government says the new solar programme will create around 1.7 million direct jobs across various sectors, including manufacturing, logistics, sales, installation, operation, maintenance, and other services.

An expert with a solar consultancy, who did not wish to be named, said that the relatively limited growth of home solar systems had already caused friction with DISCOMs.

"Imagine millions of homes being hooked up to the grid and injecting their excess electricity in a system that is already facing so many technical losses," the expert said, referring to losses caused by, for example, damage to transmission lines or electricity theft.

For Narayan, solving distribution issues will be central to encouraging more people to switch to solar and install panels on their rooftops.

"If the government can enable people to truly earn some money, not for show but justified money, with these rooftop systems, it will be a hit among customers. Who would not want it?" he said.

HEATWAVES PUSH INDIA'S POWER DEMAND TO RECORD HIGH; DELHI HITS 7,717 MW

India's ongoing severe heatwave has pushed power demand to a seasonal high of 234 gigawatts (GW) on Tuesday, exceeding the government's projected range of 225-235 GW for May. The demand is anticipated to rise further in June, reaching between 235-240 GW.

Delhi, experiencing extreme heat, recorded an unprecedented peak power demand of 7,717 megawatts (MW) at 3:33 pm on Tuesday, the highest in its history. This marked the fourth consecutive day that Delhi's demand surpassed 7,000 MW, breaking the previous May record of 7,070 MW set on May 19, 2022. The highest temperature in Delhi was 47.4 degrees Celsius, reported in Najafgarh.

Heatwave conditions are expected to persist over northwest India, north Madhya Pradesh, and Gujarat for the next five days. The Indian Meteorological Department (IMD) has forecasted above-normal temperatures across most of the country, except some parts of Northwest, Northeast, Central, and Peninsular India.

In response, the government has taken steps to ensure uninterrupted power supply during the summer, including operationalizing gas-based power plants. Meetings have been held to coordinate advance planning and prevent power shortages in any state. The peak energy demand in India has risen by 12.7% from 215,888 MW in 2022-23 to 243,271 MW in 2023-24. The energy requirement grew by 7.5%, and the energy availability increased by 7.8%, reducing the energy shortfall from 0.5% to 0.2%.

Total electricity generation in India increased by 7.1% from 1,621 billion units in 2022-23 to 1,736 billion units in 2023-24, reflecting the country's efforts to meet the heightened demand during the heatwave.

Radiance to raise $150 million for 2GW expansion, introduces robotic solar cleaning

"We are in the advanced stages of raising $150 million to support our growth ambitions," Sangameswaran said. He emphasized that this capital will ensure financial stability as Radiance scales up operations and embarks on new projects.

Radiance, a leading renewable energy firm, is planning to raise $150 million in equity to fund its ambitious expansion to 2 gigawatts (GW) over the next three years, said CEO Manikkan Sangameswaran, adding that this is part of a larger trend of investment surge in the renewable energy industry. Speaking to ET Energyworld, Sangameswaran also outlined the company's innovative move to use robotic cleaning for solar modules.

"We are in the advanced stages of raising $150 million to support our growth ambitions," Sangameswaran said. He emphasized that this capital will ensure financial stability as Radiance scales up operations and embarks on new projects.

The funds will be used to secure land and connectivity for new projects. "We have secured land for 800 MW and are budgeting for another 1.2 GW," he noted. Radiance is also diversifying its energy portfolio by integrating wind energy with its existing solar projects. "We aim to have at least 20-35% of our portfolio come from wind energy," Sangameswaran added.

Sangameswaran explained that the Indian renewable energy market is rapidly growing, driven by corporate and industrial customers seeking reliable and cost-effective solutions. "Our growth philosophy is focused on serving corporate India," he said.

A significant move by Radiance involves introducing robotic cleaning for its solar modules. "We are using robots for dry cleaning our solar panels, which saves water and allows for more frequent cleaning cycles," Sangameswaran said. He highlighted that the robotic cleaners are powered by solar energy, making the process both sustainable and cost- effective.

Radiance is committed to its environmental, social, and governance (ESG) goals. "We have adopted Sustainable Development Goals (SDGs) six, seven, and 13, focusing on clean water, affordable and clean energy, and climate action," Sangameswaran said. He mentioned that

the company monitors its environmental impact meticulously, including water savings from its dry cleaning processes.

Investing in digitalization and automation is also a priority for Radiance. "We use machine learning for monitoring and drones for surveying our projects," Sangameswaran said. These technologies not only improve efficiency but also ensure compliance with safety and environmental standards.

Looking ahead, Sangameswaran expressed optimism about the renewable energy sector in India. "The market for corporate renewable energy is expected to grow to 10 GW per annum by 2030," he said. Radiance aims to capture a significant share of this market by continuing to innovate and expand its offerings.

"Our journey from 500 MW to 2 GW in three years is ambitious, but with the right strategy and capital, we are confident of achieving our goals," Sangameswaran concluded.

'We'll Have 50K People Trained On GenAI' Says HPCL Tech's CEO

'We're putting a lot of focus on GenAI developers and people who can really do all the architecture and programming.'

Among the large IT players, HCLTech's fourth quarter performance in FY24 has been industry leading.

The firm's guidance of 3 to 5 per cent for FY25, though soft compared to its FY24 figure, is still strong against Infosys' 1 to 3 per cent.

C Vijayakumar, CEO and MD, HCLTech, in a video interview with **Shivani Shinde** and **Ashutosh Mishra**/*Business Standard*, says that its challenger position is working in favour of the firm.

Fourth quarter FY24 performance looks really soft. Could you just walk us through what happened during the quarter? Also, despite a strong total contract value (TCV), the guidance for FY25 is also on the softer side.

When we started FY24, there was cautious optimism around growth in line with the market momentum at that time.

There were signals of reduced discretionary spends and slowdown in some key verticals. We as a company reacted to that with agility and flexibility.

For FY24, our revenue growth was 8.3 per cent and our services business grew 5.4 per cent. These are industry leading.

Our services performance in Q4 has been very strong and software has a seasonality issue, so that impacts the performance.

For guidance, we've assumed a similar discretionary spend environment in FY25 as compared to FY24.

Do you see things improving during the next two-three quarters? What's the sense that you're getting from clients and customers?

In some verticals, we definitely feel confident that things will improve. But in others, I'm still assuming, at least in the next couple of quarters, things may not.

Some peers are also saying that a lot of the spends are moving to GenAI kind of projects, which means slower uptick in business. Is that the sense that you were also getting?

There is definitely a lot of interest in GenAI, and we see a lot of traction in AI and GenAI-related opportunities where companies are looking for realistic and pragmatic benefits.

Still, the services spend on GenAI is not significant enough. But it is definitely growing every day.

C Vijayakumar, CEO and MD, HCLTech,

HCLTech has been an outlier when compared to peers like TCS and Infosys. You have grown in the US and in the banking, financial services and insurance (BFSI) vertical. What worked for HCLTech?

We definitely have the highest focus in North America, the largest services market, and that's why we've been very successful in the US. Almost 64 per cent of our revenue comes from the US.

Similarly, BFSI is also the largest vertical, and we've taken some big bets in BFSI, like focusing on asset and wealth management as well as hybrid Cloud adoption.

Insurance is a big vertical bet. In some of these areas where we invested in, we also won several clients in the last 3 to 4 years. Many of them are scaling up.

I think these are some reasons why we have good outcomes in the US as well as in BFSI. We are also benefiting from the momentum on vendor consolidation.

The big deal that we won was also consolidation. Generally, we've been positioned as a challenger in a lot of the large accounts where we are starting small and those accounts are expanding quite nicely.

Do you see this momentum continuing for you?

The underlying momentum, yes, but there could be some tactical things like we've done a divestiture of State Street. So, such things will have an impact, but the underlying momentum will continue.

How is HCLTech planning to grow its GenAI services?

One big focus is on skilling. By this financial year, we'll have about 50,000 people fully trained to leverage generative AI.

We're also putting a lot of focus on GenAI developers and people who can really do all the architecture and programming.

I think skill is also equally important to drive growth in this segment. We are focused on both.

HCLTech is an outlier when it comes to hiring trends. The pyramid structure which HCLTech started focusing on, is that playing out well for the company?

Yes, I think in FY22 and FY23, we had a good intake of freshers. We had almost doubled it during that time.

In 2024, because growth was moderating, our fresher intake came down. We took about 12,000 people, and I think this strongly correlates with the growth in the business.

In years where the growth is low, we'll have lesser freshers, and when growth picks up, we'll have more freshers.

Nothing significantly changes when it comes to discretionary spend.

No, I don't think so. At least that's not our assumption. Our assumption is that nothing is changing.

HCLTech has been in this space for a long time. How do you see the sector performing over the next few quarters?

I think ER&D is, by the nature of spend, a little more discretionary. Given the softness and discretionary spend, we've had some lower growth in engineering and R&D.

We had also acquired ASAP, an automotive company in Germany, a couple of quarters ago. If you take a longer-term perspective, engineering has got a very good growth outlook.

Feature Presentation: Ashish Narsale/Rediff.com

Schneider Electric To Manufacture Cooling Solutions, Inaugurates Factory In Bengaluru

The company's local manufacturing capabilities are positioned to support data centre operators in India and globally... Schneider Electric, the global leader in digital transformation of energy management and automation, has inaugurated a new cooling factory in Bangalore. This factory will focus on developing innovative cooling solutions to meet the growing exponential demand for data center ecosystem in the country. The new factory, which covers ~ 6.5 acres, has been built with an investment of Rs 100 Crores (~ 10Mn Euro). Eighty five per cent of the products manufactured in this factory will be exported, significantly catering to the Datacentre segment, as well as to Buildings, Industry, and Infrastructure. Fully owned by Schneider Electric, this factory will play a crucial role in the company's global supply chain.

This new factory is equipped with cutting-edge technology and specializes in manufacturing cooling products and solutions that are tailored for data centres, telecom, commercial, and industrial applications, both in domestic and international markets.

The primary focus of the factory will be on producing the following products:– Latest generation in row cooling systems: These systems provide targeted cooling directly at the heat source, maximizing server performance while minimizing energy consumption; High-efficiency chillers: These chillers offer reliable and efficient cooling for data centers of all sizes; and Primary Air Handling Unit (PAHU), Precision Air Conditioning (PAC), FANWALL systems: These are installed in data centre halls to provide a more cost- and energy-efficient method of bringing in cool outdoor air. In addition to increased efficiency, FANWALL systems offer maximum flexibility, optimized airflow, and minimized turbulence.

'86% executives using AI to boost revenue'

As many as 86 per cent of senior business executives have deployed artificial intelligence (AI) to enhance revenue streams or create new ones, said a report by Tata Consultancy Services (TCS) on Wednesday.

As many as 69 per cent of businesses are more focused on using AI for innovation and increasing revenue than on improving productivity and optimising cost, said the 'TCS AI for Business Study'.

Executives are positive about the impact of AI, with 57 per cent reporting "excitement" or "optimism".

As many as 45 per cent of respondents in the study expected up to half their employees will need to use generative AI (GenAI) tools to do their job in three years' time and another 41 per cent think even a greater number will do so.

Most (65 per cent) believe AI will improve capabilities, enabling people to focus on activities that require creativity and strategic thinking.

"2023 was a year of exuberance, with every enterprise experimenting with AI/GenAI use cases.

We are now entering an era of wide-and-deep enterprise AI adoption.

"Enterprises, however, are realising that the path to production for AI solutions is not easy, and that building an AI-mature enterprise is a marathon, not a sprint," said Harrick Vin, chief technology officer at TCS, India's largest information technology (IT) services company in revenue and market capitalisation.

"Our AI study has confirmed this sentiment; it has also highlighted that enterprises feel underprepared to deploy AI solutions at scale as well as to manage the profound shifts in the roles of people and ways of working resulting from such deployments," he said.

Business leaders, however, are less certain about the "path to transformation" in AI, said the report.

Only 4 per cent use AI in a way that has transformed their business and 24 per cent have not even moved beyond the initial exploratory phase.

Barriers to business success include corporate IT infrastructures and customer expectation.

Organisations acknowledge the need to move beyond existing metrics to measure the success of AI implementation, but 72 per cent say they don't have the right metrics.

The survey highlights the need for businesses to take a strategic approach to adopting and developing the right performance indicators to measure the technology's impact.

"When calibrated for accuracy and harnessed responsibly, GenAI makes the computational power of the data, cloud, and AI come alive.

"Add in human ingenuity and organisations can create a new paradigm for the modern marketplace," said Sivaraman Ganesan, head, AI.Cloud Business Unit, TCS.

The TCS Thought Leadership Institute surveyed nearly 1,300 chief executive officers and other senior executives with profit and loss responsibilities, across 12 industries and 24 countries.

About half the companies had $1-5 billion in annual revenue and the other half had over five billion US dollars in revenue.

Some key findings

Executives believe the impact of AI will be greater than or equal to that of the internet (54 per cent) and smartphones (59 per cent)

Corporate functions with the most completed AI projects: Finance/comptroller (completion rate of 29 per cent); HR (completion rate of 28 per cent); Marketing (completion rate of 28 per cent)

65 per cent of senior executives say their competitive advantage will still come from humans — with their creativity, intuition, and strategic thinking unleashed by AI's augment and assist capabilities

40 per cent of executives say that in the future they have a lot of changes to make to their business before they can take full advantage of AI

Over half (55 per cent) said they were actively making changes right now to their business or operating models, or to their products and services, due to the potential benefits and risks of AI

81 per cent of executives highlight the need for global AI standards and regulations

Radiance plans $150 million funding for 2 GW expansion

Reportedly, Radiance is in the final stages of securing a $150 million equity investment to propel its expansion plans to 2 GW within the next three years. This move aligns with the broader trend of increased investment flowing into the renewable energy sector. The injection of capital aims to ensure financial stability as Radiance scales up its operations and undertakes new projects. The funds will primarily be allocated towards acquiring land and infrastructure for upcoming ventures, with 800 MW of land already secured and provisions made for an additional 1.2 GW. Radiance is also diversifying its energy portfolio by incorporating wind energy alongside its existing solar projects, aiming for wind energy to contribute 20-35 per cent of its overall portfolio. Additionally, the company has introduced robotic solar panel cleaners, a sustainable and cost-effective solution powered by solar energy. This innovation not only conserves water but also allows for more frequent cleaning cycles, enhancing the efficiency of solar energy generation.

Greatest Invention Since The Internet

Some call it the greatest S invention since the internet. Others like Jamie Dimon, CEO of JPMorgan Chase, expect it to be as transformative as electricity or the printing press. Ever since Open AI demonstrated the stunning power of generative artificial intelligence Gen AI late 2022, people have visu- alised a myriad possibilities for use of the technology to make our lives simpler, our experiences more de- lightful and to help organisations become more efficient and predict the future better.

Over the past 48 hours, that excitement has further peaked with Open AI's launch of GPT-40. Many of the early experiments are now getting into actual use. In some areas like coding, marketing and communications, AI is already massively increasing the productivity of humans. Our lead story titled 'AI has become so simple and affordable that anyone can use it'. But neither Vogels nor anyone else would perhaps have visualised at the time how much more simple, affordable and powerful it would become in just another three years, with GenAI. Given the extraordinary progress the technology is making in everyday lives today, we thought we should have more intense coverage of AI for some stand how it impacts different industries, how it changes the nature of jobs, and how all of us can use AI to our benefit. We will look at the big concerns around AI's misuse, and how those can be mitigated. AI igate the new technology terms that are emerging with AI.

ANNOUNCEMENT

Celebrating Safety Week

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We are happy to announce that a four hour Seminar is being organised on 4th July 2024 in Mumbai. The topic of Seminar is Electrical Safety.

Please block the date. Details will be announced soon.

Contact : Ashish - 98213 75185 | Kaushal - 92706 63417

Schneider Electric ends deal talks with Bentley Systems

Schneider Electric said on Wednesday that its talks with U.S. engineering software maker Bentley Systems regarding a potential "strategic transaction" have ended.

"Those discussions are now mutually terminated and no transaction was agreed upon," Schneider said in a statement.

Bentley's shares fell more than 5% on the news, giving the company a market value of $16 billion.

Bentley Systems was exploring its options after attracting acquisition interest, and that Schneider was interested in a deal.

The company had formed a special committee of its board of directors to explore options that included a joint venture or a merger of the company with Schneider's software business, according to people familiar with the negotiations.

The Bentley family, which controls the company, refused during the talks to support a deal in which it would lose control or transfer too much value of the combined company to Schneider.

Bentley, founded in 1984 by brothers Keith and Barry Bentley, provides software for construction and engineering projects including roads, bridges and airports.

The Exton, Pennsylvania-based company has announced a CEO transition. Longtime CEO Greg Bentley said in March he would step down from his role to become executive chairman. Chief Operating Officer Nicholas Cumins will become the new CEO in July.

Schneider, a French industrials giant that competes against the likes of Siemens has been attempting to grow its software business through acquisitions in recent years. In 2017, Schneider took control of UK-based engineering software firm Aveva Group, and then acquired the rest of the company in 2023.

MNRE unveils updated guidelines for vendor registration

The Ministry of New and Renewable Energy (MNRE) has released updated guidelines for vendor registration under the recently PM Surya Ghar Muft Bijli Yojana rooftop solar programme.

With a budget of Rs 750 billion, the program seeks to expand residential rooftop solar capacity and enable households to produce their own electricity through the fiscal year 2026-27. REC Limited has been chosen as the national registering authority for new vendor registrations. To register, vendors must provide a performance bank guarantee of 2.5 million, valid for a minimum of five years. Once registered, vendors can install rooftop solar systems in any district across the country. However, they can designate the specific states and districts where they plan to operate, enabling them to be listed appropriately in the consumer search list.

Logistics contract awarded for Quang Trach 1 thermal power project in Vietnam

Sarens has secured a contract for all logistical operations for the Quang Trach 1 thermal power project in Vietnam, which will generate up to 8.4 billion kWh of energy annually upon completion in 2025. The 48.6-hectare project is part of the Quang Trach power complex, alongside the 1.2 GW Quang Trach 2 coal-fired power plant. The project is being developed by Vietnam Electricity (EVN) at an investment of USD1.78 billion, and a consortium of Mitsubishi Corporation, Hyundai Engineering and Construction, and Construction Corporation No. 1 will execute it. The marine infrastructure for Quang Trach 1 will include a coal import port and a 1.27 km-long breakwater, featuring two berths with a capacity of 100,000 deadweight tonnes.

New Sun Cable takes shape with 12GW of wind added to world's biggest renewable project

Dramatic new details have been released on the future of Sun Cable, the world's biggest renewable energy and storage project, with 12 gigawatts (GW) of wind capacity to be added to the massive arrays of solar panels and giant batteries planned for the Northern Territory.

The new details were unveiled by Quinbrook Infrastructure Partners, the Australian-founded global investor that was brought in by Sun Cable's principal backer, software billionaire Mike Cannon-Brookes, to look at the near term domestic opportunities for the project.

_Quinbrook quickly identified that wind energywould be a useful addition to the project that was originally focused on 20 GW of solar and 42 GWh of battery storage.

After nearly a year of studies, Quinbrook now has a better idea of what that might look like – 12 GW of wind, with the solar component reduced from 20 GW to 12 GW, and the storage component also reduced to 32 GWh – thanks in part to the role that wind will play in providing power after the sun goes down.

The project, according to James Allan, a director of both Quinbrook and Sun Cable, will likely be rolled out in two stages – with the first sized at 12 GW of wind and solar and 16 GWh of battery storage.

Interestingly, the first stage will now target both a link to Singapore and the planned supply to a new massive green manufacturing hub at Middle Arm in Darwin, rather than just the domestic component that had been touted last year.

The second stage, of another 12 GW of wind and solar, and another 16 GWh of battery storage, will be focused on expanding the capacity of the link to Singapore.

"It's a very large and ambitious project," Allan told the Energy Storage conference in Sydney this week. "In some sense. it's the largest behind the meter project in the world, because what we're what we're actually going to be doing is running our own cable into the (Middle Arm precinct)."

That means it will be separate to the existing Darwin grid, which is tiny in comparison with a maximum load of around 300 MW. "We're going to be running six gigawatts into Darwin's area, and about four gigawatts of that will go into the Middle Arm precinct to support new green industries," Allan said.

"About two gigawatts of that power will be delivered into the international cable and follow through to Singapore to support Singapore decarbonising its grid.

"And so Quinbrook at the moment is focused on what's called the downlink side of the project, which is the

domestic generation fields, the 800 kms HVDC domestic link from those generation fields up to Darwin and the connections into Middle Arm and the export terminal.

"The second stage of the project called Singapore Link is then focused on the much longer subsea cable, the 4,300 Kkm cable that will run through Indonesian waters to the offtake facility in Singapore they need to connect into the Singaporean grid.

"And so it's a massive project. I think what the reason that we were attracted to it and why we see this as a really interesting, exciting project to be involved in is the ability to not just send power to Singapore, but also to use it domestically to do exactly this thematic investing that I've been talking about in this presentation.

"We want to see some of these industries springing up in Darwin."

Allan also flagged that Quinbrook itself – which is looking at an $8 billion _polysilicon production project to help Australia grab a bigger share of the solar supply chain– would likely be a customer for its own planned projects "and hopefully do something useful with it and export it to Asian markets and elsewhere."

Allan said Sun Cable would be able to support multiple projects of that nature and help Darwin achieve its goal of creating $40 billion green economy.

"Australia is blessed to have ... all the ingredients that are needed to make this happen," Allen said. "We have to renewables, we have the minerals, we have the ports, we just need to push and assume our place in these growing and new markets that are springing up.

"But time is of the essence. There are a number of other countries that have exactly the same idea and whilst these ports are scarce, they're not completely unique.

"And so many other countries are trying to fold in under the wing of US policy support, to get special status to be able to contribute to push their ports push their renewable industries as hard as they possibly can. And we need to be in the mix right now."

10th ELASIA at Bangalore

Inauguration by Mr Satish Kazi of COSMA.

Stall of IECT

10th Alasia exhibition was held in Bangalore from 24 May to 26 May 2024. The show constituted an ideal platform for maximum exposure of cutting edge products and services to key Electrical, Electronics, Lighting and Power sector players. It had successful B2B meetings and helped the participants in consolidating brand images, expanding markets, establishing contacts and initiating deals.IECT had actively participated in this exhibition and communicated with several industry leaders and stakeholders.

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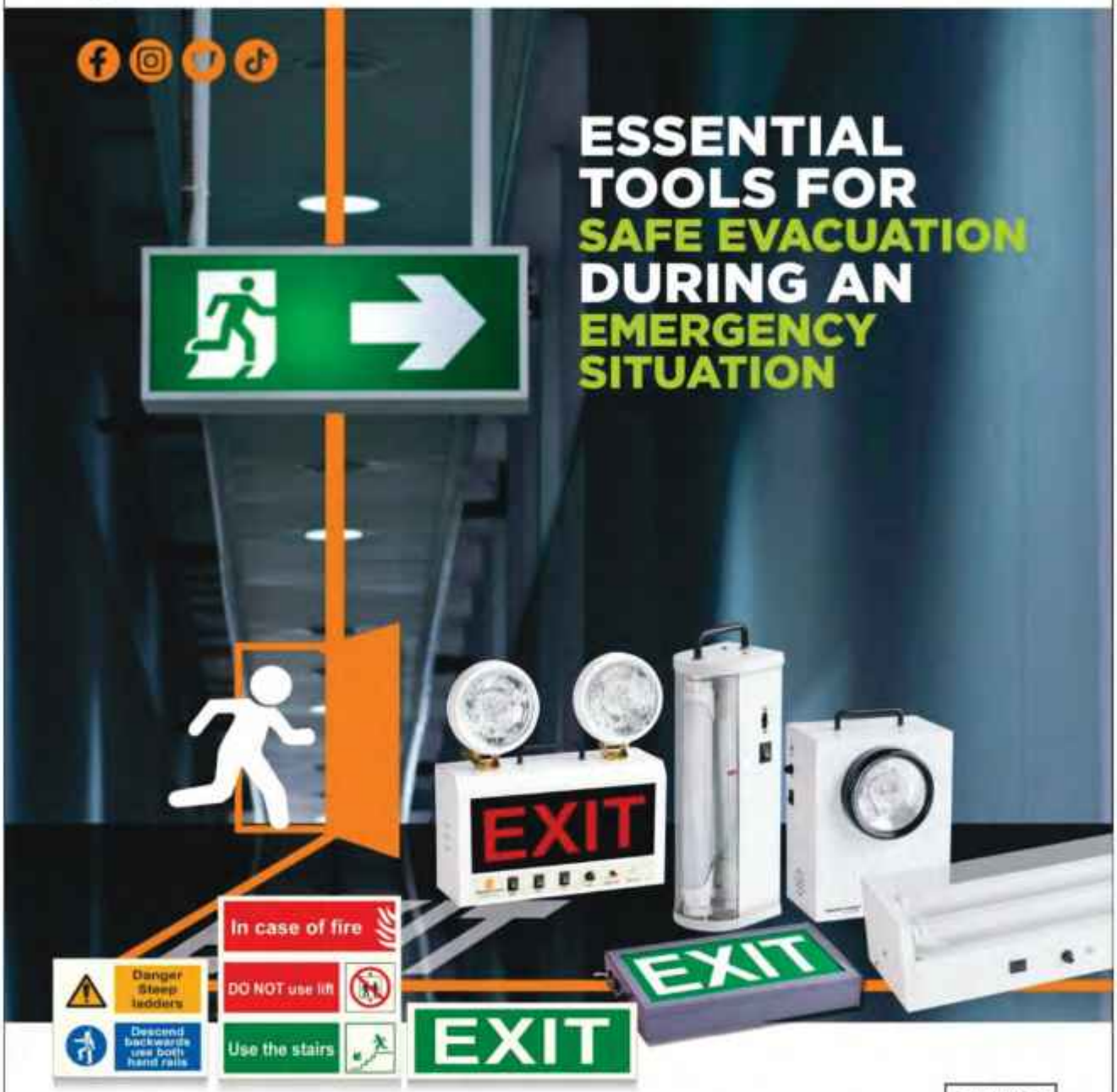

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