15 October 2024

Europe's DSO 'technology radar' updated

A year on from its first release, E.DSO has released the third edition of its 'Technology radar' for DSOs highlighting the expected impacts of emerging technologies.

While the need for a new edition is reflective of the pace of technological advancements, the new document doesn't itself introduce any new technologies or change the expected impacts of the technologies on the DSOs. Rather the updates are in the all important accompanying factsheets on the 33 technologies featured describing the technology, opportunities and challenges for DSOs, potential use cases and ongoing projects in which it is featured.

These include three new factsheets on'Local Energy Optimization in Electricity Grids', 'Smart Distribution Transformers' and 'Recycling and Circular Economy', and an update of the 'Digital Twins' factsheet. 'Local energy optimisation in electricity grids' encompasses all technologies on the low voltage network that help ensure the integration of energy is carried out with minimal impact on supply quality. Highlights are the substantial growth of total PV energy capacity in Europe, with annual additions reaching record highs and the rapid expansion in the number of EV charging points expected to exceed 1.2 million by 2025.

The 'Smart Distribution Transformers' factsheet highlights the evolution of distribution transformers to solid state smart distribution transformers as being able to leverage on power electronics with multiple-stage AC/DC active rectifiers, DC/DC converters, DC/AC grid-tied inverters and storage as an option. The 'Recycling and Circular Economy' factsheet highlights the EC's circular economy action plan as one of the main building blocks of the Green Deal and the transition to a circular economy to reduce pressure on natural resources and create sustainable growth and jobs.

The 'Digital Twins' factsheet is expanded with new information that has emerged over the past year as their use has evolved. Nine promising use cases are presented – grid optimization, active system management, asset management, cyber-physical grid resilience and security, network planning, TSO-DSO coordination, training and education, disaster response and energy efficiency. Ongoing projects that are listed are the TwinEU project, E.ON's intelligent grid platform and various use cases under way by E-Redes and Enedis.

The 'Technology radar' is prepared by a dedicated task force organised within E.DSO's Technology & Knowledge Sharing Committee and is co-convened by Pierre Mallet and Anne-Laure Popelin from Enedis.

Smart Energy
http://www.smart-energy.com/

16 October 2024

Launch of China's First Major Green Hydrogen-to-Aviation Fuel Plant

On October 14, 2024, a significant stride was made in sustainable aviation with the groundbreaking ceremony of the Shuangyashan Green Methanol and Green Aviation Fuel Demonstration Base. This ambitious project, spearheaded by China Energy Engineering and China Electric Power Engineering Consulting Group Co., Ltd., is located in the Shuangyashan Economic and Technological Development Zone, Heilongjiang Province. It is designed to fuse wind, solar, and hydrogen technologies with biomass to produce green aviation fuel.

The project aims to produce 200,000 tons of green methanol and 300,000 tons of green aviation fuel each year. The first phase of the project alone involves an investment of about 6 billion yuan ($857 million), focusing on producing 100,000 tons of green aviation fuel annually. This phase includes the construction of a 450-megawatt wind farm, a

photovoltaic power station, a water electrolysis hydrogen production station, a biomass pretreatment plant, and a green aviation fuel synthesis plant, slated for operation by 2027.

"The first 100,000-ton green hydrogen-to-green aviation fuel demonstration project has started. Construction begins on $3bn green-hydrogen-to-aviation-fuel plant in northeast China On October 14, the groundbreaking ceremony for the first phase of the Shuangyashan Green Methanol and Green Aviation Fuel Demonstration Base, a 100,000-ton wind-solar-hydrogen fusion biomass green aviation fuel demonstration project invested and constructed by China Energy Engineering China Electric Power Engineering Consulting Group Co., Ltd., was held," reported the project managers.

This plant is part of a broader strategy that involves the integration of energy, agriculture, chemical, and transportation industries, utilizing process modules like biomass storage and pretreatment, biomass gasification, and Fischer-Tropsch synthesis of aviation fuel. The adoption of world-leading solutions and technologies with independent intellectual property rights underlines the project's innovation and potential to overcome the current "bottleneck" technologies in biomass gasification.

Once operational, the Shuangyashan facility will not only boost the local economy but also enable significant annual carbon emission reductions, supporting the city's transition towards a modern industrial system and high-quality development. This initiative is in line with China's "dual carbon" strategy, emphasizing carbon neutrality and the construction of a new energy framework.

FCW
http://fuelcellsworks.com/

16 October 2024

IEA: Geopolitical tensions are laying bare fragilities in the global energy system, reinforcing need for faster expansion of clean energy

World Energy Outlook 2024 shows critical choices facing governments and consumers as period of more ample supplies nears and surging electricity demand reshapes energy security

Regional conflicts and geopolitical strains are highlighting significant fragilities in today's global energy system, making clear the need for stronger policies and greater investments to accelerate and expand the transition to cleaner and more secure technologies, according to the IEA's new World Energy Outlook 2024.

The latest edition of the World Energy Outlook (WEO), the most authoritative global source of energy analysis and projections, examines how shifting market trends, evolving geopolitical uncertainties, emerging technologies, advancing clean energy transitions and growing climate change impacts are all changing what it means to have secure energy systems. In particular, the new report underscores that today's geopolitical tensions and fragmentation are creating major risks both for energy security and for global action on reducing greenhouse gas emissions.

The report's projections based on today's policy settings indicate that the world is set to enter a new energy market context in the coming years, marked by continued geopolitical hazards but also by relatively abundant supply of multiple fuels and technologies. This includes an overhang of oil and liquefied natural gas (LNG) supply coming into view during the second half of the 2020s, alongside a large surfeit of manufacturing capacity for some key clean energy technologies, notably solar PV and batteries.

"In the second half of this decade, the prospect of more ample – or even surplus – supplies of oil and natural gas, depending on how geopolitical tensions evolve, would move us into a very different energy world from the one we have experienced in recent years during the global energy crisis," said IEA Executive Director Fatih Birol. "It implies downward

pressure on prices, providing some relief for consumers that have been hit hard by price spikes. The breathing space from fuel price pressures can provide policymakers with room to focus on stepping up investments in clean energy transitions and removing inefficient fossil fuel subsidies. This means government policies and consumer choices will have huge consequences for the future of the energy sector and for tackling climate change."

Based on today's policy settings, the report finds that low-emissions sources are set to generate more than half of the world's electricity before 2030 – and demand for all three fossil fuels – coal, oil and gas – is still projected to peak by the end of the decade. Clean energy is entering the energy system at an unprecedented rate, but deployment is far from uniform across technologies and markets.

In this context, the WEO-2024 also shows that the contours of a new, more electrified energy system are coming into focus as global electricity demand soars. Electricity use has grown at twice the pace of overall energy demand over the last decade, with two-thirds of the global increase in electricity demand over the last ten years coming from China.

"In previous World Energy Outlooks, the IEA made it clear that the future of the global energy system is electric – and now it is visible to everyone," said Dr Birol. "In energy history, we've witnessed the Age of Coal and the Age of Oil – and we're now moving at speed into the Age of Electricity, which will define the global energy system going forward and increasingly be based on clean sources of electricity."

"As with many other global energy trends today, China is a major part of what is happening," Dr Birol added. "Whether it's investment, fossil fuel demand, electricity consumption, deployment of renewables, the market for EVs, or clean technology manufacturing, we are now in a world where almost every energy story is essentially a China story. Just one example: China's solar expansion is now proceeding at such a rate that, by the early 2030s – less than ten years from now – China's solar power generation alone could exceed the total electricity demand of the United States today."

Global electricity demand growth is set to accelerate further in the years ahead, adding the equivalent of Japanese demand to global electricity use each year in a scenario based on today's policy settings – and rising even more quickly in scenarios that meet national and global goals for achieving net zero emissions.

For clean energy to continue growing at pace, much greater investment in new energy systems, especially in electricity grids and energy storage, are necessary. Today, for every dollar spent on renewable power, 60 cents are spent on grids and storage, highlighting how essential supporting infrastructure is not keeping pace with clean energy transitions. Secure decarbonisation of the electricity sector requires investment in grids and storage to increase even more quickly than clean generation, and the investment ratio to rebalance to 1:1. Many power systems are currently vulnerable to an increase in extreme weather events, putting a premium on efforts to bolster their resilience and digital security.

Despite growing momentum behind clean energy transitions, the world is still a long way from a trajectory aligned with its net zero goals. Decisions by governments, investors and consumers too often entrench the flaws in today's energy system, rather than pushing it towards a cleaner and safer path, the report finds. Reflecting the uncertainties in the current energy world, the WEO-2024 includes sensitivity analysis for the speed at which renewables and electric mobility might grow, how fast demand for LNG might rise, and how heatwaves, efficiency policies and the rise of artificial intelligence (AI) might affect electricity demand going forward.

Based on today's policy settings, global carbon dioxide emissions are set to peak imminently, but the absence of a sharp decline after that means the world is on course for a rise of 2.4 °C in global average temperatures by the end of the century, well above the Paris Agreement goal of limiting global warming to 1.5 °C. The report underlines the inextricable

links between risks of energy security and climate change. In many areas of the world, extreme weather events, intensified by decades of high emissions, are already posing profound challenges for the secure and reliable operation of energy systems, including increasingly severe heatwaves, droughts, floods and storms.

A new energy system needs to be built to last, the WEO-2024 emphasises, one that prioritises security, resilience and flexibility, and ensures that benefits of the new energy economy are shared and inclusive. In some regions of the world, high financing costs and project risks are limiting the spread of cost-competitive clean energy technologies to where they are needed most. This is especially the case in developing economies where these technologies can deliver the biggest returns for sustainable development and emissions reductions. Lack of access to energy remains the most fundamental inequity in today's energy system, with 750 million people – predominantly in sub-Saharan Africa – without access to electricity and over 2 billion without clean cooking fuels.

To address the evolving energy challenges faced by countries around the world, the IEA is convening an International Summit on the Future of Energy Security in the second quarter of 2025. Hosted by the UK government in London, the Summit will assess the existing and emerging risks facing the global energy system, focusing on solutions and opportunities. And to explore the implications of AI for the energy sector, the IEA will host a Global Conference on Energy & AI at its headquarters in Paris on 4 and 5 December. High-level participants will discuss how pioneering AI technologies can change the way the world produces, consumes and distributes energy.

IEA
http://www.iea.org/

17 October 2024

India's Renewable Energy Capacity Hits 200 GW Milestone

India has reached a significant milestone in its renewable energy journey, with the country's total renewable energy capacity crossing the 200 GW (gigawatt) mark as of October 10, 2024. According to the Central Electricity Authority, the total renewable energy-based electricity generation capacity now stands at 201.45 GW. This achievement underscores India's growing commitment to clean energy and its progress in building a greener future.

This milestone reflects the result of years of dedicated efforts to harness India's natural resources. From sprawling solar parks to wind farms and hydroelectric projects, the country has steadily built a diverse renewable energy base. These initiatives have not only reduced reliance on fossil fuels but also strengthened the nation's energy security. When factoring in the 8,180 MW (megawatt) of nuclear capacity, the total non-fossil fuel-based power now accounts for almost half of the country's installed electricity generation capacity, signalling a strong move toward clean energy leadership on the global stage.

India's total electricity generation capacity has reached 452.69 GW, with renewable energy contributing a significant portion of the overall power mix. As of October 2024, renewable energy-based electricity generation capacity stands at 201.45 GW, accounting for 46.3 percent of the country's total installed capacity. This marks a major shift in India's energy landscape, reflecting the country's growing reliance on cleaner, non-fossil fuel-based energy sources.

A variety of renewable energy resources contribute to this impressive figure. Solar power leads the way with 90.76 GW, playing a crucial role in India's efforts to harness its abundant sunlight. Wind power follows closely with 47.36 GW, driven by the vast potential of the coastal and inland wind corridors across the country. Hydroelectric power is another key contributor, with large hydro projects generating 46.92 GW and small hydro power

adding 5.07 GW, offering a reliable and sustainable source of energy from India's rivers and water systems.

Biopower, including biomass and biogas energy, adds another 11.32 GW to the renewable energy mix. These bioenergy projects are vital for utilizing agricultural waste and other organic materials to generate power, further diversifying India's clean energy sources. Together, these renewable resources are helping the country reduce its dependence on traditional fossil fuels, while driving progress toward a more sustainable and resilient energy future.

Pv-magazine India
http://www.pv-magazine-india.com/

17 October 2024

Terrorist Attack on National Electrical Grid Disrupts 25% of Venezuela's Power Supply

A terrorist attack on the Venezuelan National Electrical System (SEN) affected 25% of the country's power supply, reported the minister of Electrical Energy, Jorge Márquez. The attack occurred on Wednesday, October 16, but within hours of the attack the National Electricity Corporation (CORPOELEC) began working to restore the electrical service.

"It was a strong impact, it could be felt throughout the country—it affected 25% of the country's power supply, but thanks to God and our workers, we are recovering the service and ensuring the supply for the people," Márquez said to VTV.

The minister reported that the power outage on Wednesday afternoon was due to a "new terrorist attack against the National Electric System, this time against the its transmission lines. These terrorists only think about causing harm while the people are working to move forward."

"These terrorists are always looking for ways to harm workers, grandparents, grandmothers, children in schools, that is why they attack the SEN to create fear and unrest," he added. "This was a new attack against the country, but there is a hard-working working class and a combative people, and as President Maduro says, the terrorists have not been able to win and they will not be able to."

Electrical service was restored throughout Venezuela by Wednesday night.

Orinoco Tribune
http://orinocotribune.com/

18 October 2024

Cuba grid collapses again raising doubts about a quick fix

Cuba's electrical grid collapsed again on Sunday, the fourth such failure in 48 hours, raising fresh doubts about a quick fix on an island already suffering from severe shortages of food, fuel and medicine. The blackout, after weeks of rolling outages, sparked some small protests around the Caribbean island, where a tropical storm threatened to hamper efforts to restore power.

Cuba's national electrical grid first crashed around midday on Friday after the island's largest power plant shut down, sowing chaos and leaving around 10 million people in the dark. The grid has collapsed three times since, underscoring the precarious state of the country's infrastructure. The repeated failures mark a major setback in the government's efforts to quickly restore power to exhausted residents, a majority of which have already suffered from months of blackouts through the Caribbean`s sultry summer.

Cuban president Miguel Diaz-Canel appeared Sunday evening on national television dressed in olive drab military attire, encouraging Cubans to air their grievances over the situation with discipline and civility. "We are not going to accept nor allow anyone to act with

vandalism and much less to alter the tranquility of our people," said Diaz-Canel, who is rarely seen in uniform.

The capital Havana was entirely blacked out on Sunday evening, with only scattered businesses, bars and homes running on small fuel-fired generators. Most of the city of two million was quiet. Residents played dominoes on the sidewalk, listened to music on battery-powered radios and sat on doorsteps. A heavy police presence was visible at points throughout the city.

Reuters journalists witnessed several "cacerolazos" - pot-banging protests common in Latin America - in neighborhoods on the outskirts of Havana. Protesters angry over shortages of food, water and electricity blocked roads with trash heaps in San Miguel de Padron, a poor neighborhood on the outskirts of the city before being dispersed by security forces. Energy and mines minister Vicente de la O Levy said on Sunday he recognized the blackouts were bothersome to residents, but said most Cubans understood and supported government efforts to restore power.

"It is Cuban culture to cooperate," O Levy told reporters on Sunday. "Those isolated and minimal incidents that do exist, we catalog them as incorrect, as indecent." Earlier on Sunday, Cuba had restored power to 160,000 clients in Havana just prior to the grid's Sunday collapse, giving some residents a glimmer of hope. The day took a turn for the worse late in the afternoon, however, when another total grid collapse forced authorities to start again from scratch, raising the specter of a several more days of widespread outages.

Officials initially said power would be restored by Monday or Tuesday. It was not immediately clear how much the latest setback would delay the government's efforts. Those efforts were also hampered by Tropical Storm Oscar, which made landfall on the Caribbean island on Sunday, bringing strong winds, a powerful storm surge and rain to parts of eastern Cuba.

The government has blamed weeks of worsening blackouts - as long as 10 to 20 hours a day across much of the island - on deteriorating infrastructure, fuel shortages and rising demand. Cuba also blames the U.S. trade embargo, as well as sanctions instituted by then-President Donald Trump, for ongoing difficulties in acquiring fuel and spare parts to operate and maintain its oil-fired plants.

The U.S. has denied any role in the grid failures. Cuba depends on imports to feed its largely obsolete, oil-fired power plants. Fuel deliveries to the island have dropped significantly this year as Venezuela, Russia and Mexico, once important suppliers, have slashed their exports to Cuba. Ally Venezuela - struggling to supply its own market - cut by half its deliveries of subsidized fuel to Cuba this year, forcing the island to search for more costly oil on the spot market. Mexico, another frequent supplier, appeared also to have cut fuel flows to Cuba during a presidential election year.Recently elected President Claudia Sheinbaum has not said if the state-supported supply to Cuba will continue under same terms under her administration.

Reuters
http://www.reuters.com/

18 October 2024

Alliance calls for support from next European Commission

Member countries of the European Nuclear Alliance have called upon the next European Commission to recognise the contributions of both nuclear and renewables in Europe's decarbonisation in its upcoming programme, covering the period 2024-2029.

The Alliance met on 15 October in Luxembourg in the margins of the Energy Council with ministers and high-level representatives from 14 EU member states (including the upcoming Polish presidency) as well as the European Commission. In a joint statement, the

Alliance said: "In a changing global geopolitical context, the upcoming 2024-29 Commission's mandate must ensure the competitiveness and resilience of our economies towards reaching climate-neutrality by 2050 and to address the 'existential challenge' that Europe is facing.

"Nuclear energy, alongside renewable energy, is a cost-competitive solution to meet the growing demand for fossil-free electricity and mitigate climate change, thanks to its low-carbon footprint. Nuclear energy is the ready-available fossil-free technology able to produce consistent baseload dispatchable power, ensuring both our collective security of supply and the necessary flexibility in our electricity market."

In March, the European Nuclear Alliance outlined four pillars of action to set "an enabling European framework to foster a robust European nuclear industry and guarantee the security of supply of nuclear materials, particularly nuclear fuel, for power and non-power uses". These included: developing access to private and public financing, and exploring the possibilities and benefits of European financing instruments; developing a skilled and diverse nuclear workforce for all civil nuclear applications; scaling-up industrial, research and innovation collaboration across a European value chain through concrete projects; and respecting the national choices of all member states with regards to the decarbonisation of their energy mix to strengthen our unity.

"We commit to intensify our cooperation within the Alliance, with all other like-minded EU member states and with the European Commission on these four pillars," the Alliance said in their latest statement.

"The benefits of existing and future nuclear power plants go beyond the borders of member states which opt for nuclear energy," they continue. "Indeed, low-carbon baseload energies such as hydro or nuclear power stabilise our common grid and the entire European electricity market.

"Nuclear energy as well as renewables are true collective assets for the European Union. Due to its baseload profile and low operating costs, nuclear power production creates less volatile market conditions. Without such energies, there is no path for the EU to provide to its citizens affordable, reliable and abundant low-carbon energy while achieving net-zero by 2025."

The 103 nuclear power reactors currently in operation in the EU provide it with about one-quarter of its electricity.

The current Commission's term of office runs until 31 October 2024. Between 6 and 9 June, EU citizens voted to elect the 720 members of the next European Parliament. European Commission President Ursula von der Leyen was elected for a second mandate.

The European Nuclear Alliance comprises Bulgaria, Croatia, the Czech Republic, Finland, France, Hungary, the Netherlands, Poland, Romania, Slovakia, Slovenia and Sweden, plus Belgium and Italy as observers.

World Nuclear News
http://www.world-nuclear-news.org/

18 October 2024

Biden-Harris Administration Announces Additional $2 Billion to Protect the Grid Against Growing Threats of Extreme Weather, Expand Transmission

In support of the Biden-Harris Administration’s Investing in America agenda, today the U.S. Department of Energy (DOE) announced nearly $2 billion for 38 projects that will protect the U.S. power grid against growing threats of extreme weather, lower costs for communities, and increase grid capacity to meet load growth stemming from an increase in manufacturing, data centers, and electrification. The selected projects announced today through the Grid Resilience and Innovation Partnerships (GRIP) program will deploy new,

innovative transmission and distribution infrastructure and technology upgrades to enable over 7.5 gigawatts (GW) of grid capacity, speed up interconnection for new clean energy projects, support nearly 6,000 good-paying jobs, and catalyze over $4.2 billion in total public and private investment to bring reliable, affordable, clean energy to Americans.

These projects, which span 42 states and the District of Columbia, include the six projects across the Southeast that President Biden announced during his trip to Florida last week. Those six selected projects included utilities that were impacted by Hurricanes Helene and Milton.

The selected projects announced today will upgrade more than 950 miles of transmission by constructing more than 300 miles of new transmission lines and reconductoring or adding grid-enhancing technologies to more than 650 miles of transmission lines to increase the capacity of existing lines.

Funded by the Bipartisan Infrastructure Law, the GRIP program is investing $10.5 billion in communities across the country to enhance grid flexibility and improve the resilience of the power system against growing threats of extreme weather and climate change. The first round of GRIP funding, announced in October 2023, included $3.5 billion for 58 projects in 44 states. In August 2024, DOE announced an additional $2.2 billion for eight additional selections. With today's selections, GDO has now announced a cumulative $7.6 billion in Federal funding for 104 projects through the GRIP program. In total, GRIP projects are expected to enable 55 GW of grid capacity, equivalent to powering more than 40 million homes each year. The GRIP projects announced in October 2023 and August 2024 will upgrade an additional 1,650 miles of transmission.

This funding supports the Biden-Harris Administration's Justice40 Initiative, which sets a goal that 40% of the overall benefits of certain federal investments in climate, clean energy, and other areas flow to disadvantaged communities that are marginalized by underinvestment and overburdened by pollution

In this round of funding, DOE received applications requesting more than seven times the amount of funding available, an oversubscription rate of nearly 800%, demonstrating the tremendous need for these types of investments across the country. Improving grid resilience in the face of extreme weather events was a key need nationwide. Selected projects that will improve reliability and resilience include:

- Arizona – With the risk of wildfires increasing in the Southwest, Arizona Public Service Company (APS) will upgrade system devices, monitoring systems, upgrade wood utility poles, and implement microgrids in vulnerable areas to enhance energy reliability and resilience for 289,000 meters customers. Approximately 69% of the project will be carried out in rural, Tribal, or disadvantaged communities and APS estimates it will prevent nearly one million customer interruptions and save $113 million in emergency repair costs.
- Indiana and Illinois – Hoosier Energy Rural Electric Cooperative and Southern Illinois Power Cooperative will build new transmission feeds to loop transmission to 10 substations in seven counties. These substations face increasing outages from extreme weather events and tornados. Adding looped transmission will increase grid resilience and reduce outages by providing backup connections to additional substations.
- North Carolina – Randolph Electric Membership Corporation will deploy a suite of grid system upgrades to improve service reliability and resilience within REMC's system, support targeted grid modernization improvements, and reduce outage duration while providing direct benefits to rural and underserved communities in North Carolina. The hardened grid will reduce outages from severe weather events for 32,000 customers in an area vulnerable to hurricanes. The area was affected by Winter Storm Finn in 2024 and Hurricane Ian in 2022.

- Texas – Entergy Texas, Inc. (ETI) will enhance grid resilience in disadvantaged communities in Port Arthur, Texas by fortifying critical infrastructure to withstand extreme weather events, which have historically caused significant power disruptions. The project will improve grid reliability, with expected savings of $74 million over 50 years by reducing power interruptions and reducing restoration costs.

The projects announced today will increase grid capacity, allow more renewable energy to reach customers across the country, and increase the speed of the interconnection process. Over $150 million will be invested in communities through workforce development, scholarships and apprentice programs, and community organization grants through these projects and more than 80% of the projects will work with the International Brotherhood of Electrical Workers (IBEW). Highlights include:

- Alabama, Georgia, Kentucky, Mississippi, Missouri, North Carolina, Tennessee, Virginia – The Tennessee Valley Authority (TVA) and its project partners will conduct 84 resilience subprojects across eight states to add over 2,400 MW of transmission grid capacity, reduce TVA's solar interconnection queue, and reduce outage time. This project will create the first interconnection tie between TVA and the Southwest Power Pool, providing TVA and local power companies with 800 MW of new energy supply. The project will provide an anticipated 94% reduction in localized outage durations and provide 360 disadvantaged communities with an estimated $250 million in economic benefit.
- Massachusetts - Boston-based GridUnity will deploy software to improve the efficiency of the interconnection process with multiple Regional Transmission Organizations covering approximately 70% of the U.S. population—around 210 million people—to enhance energy reliability, security, and lower costs. DOE's Transmission Interconnection Roadmap found that interconnection queue delays "significantly delay clean energy deployment and lead to higher costs for project developers and electricity consumers." By modernizing the interconnection process, the project will significantly reduce the time required to review, approve, and commission new generation interconnections across the country and accelerate the approval of generation projects and grid developments that could employ 51,300 skilled workers.

DOE's Pathways to Commercial Liftoff: Innovative Grid Deployment report identified multiple advanced grid solutions that are commercially available today to quickly and cost effectively enhance grid capacity, including advanced transmission and grid-enhancing technologies used in many of these projects. GRIP projects that align with report findings include:

Connecticut – Elevate Renewables will reconfigure an existing fossil-fueled peaking generating station in Milford, Connecticut, integrating a 20 MW battery energy storage system (BESS) to create a carbon-neutral synchronous condensing solution, or "green sync." With over 1,000 combustion turbine sites across the United States, the project has potential to be scaled nationwide.

Georgia - Led by Georgia Transmission Corporation, a consortium of 12 not-for-profit rural utilities in 11 states will build, rebuild, or reconductor transmission infrastructure to improve resilience and increase electric transfer capacity by deploying advanced overhead conductors (AOHC).

DOE
http://www.energy.gov

19 October 2024

On Saturday, October 19, 2024, the national power grid suffered a major setback, leaving many Nigerians without power.

It was such that the Nigerian Electricity Regulatory Commission (NERC) decried "the recent escalating incidence of grid disturbances often leading to marked outage in several states thus reversing many of the gains recently achieved in reducing infrastructure deficit and improving grid stability."

Indeed, the incessant national grid collapse has become a global embarrassment, more so because it is not a recent phenomenon. From 2015 to May 2024, the Transmission Company of Nigeria (TCN) said the nation recorded 105 cases of grid collapse.

TCN General Manager, Public Affairs, Ndidi Mbah, said: "Clearly, between 2020 to date (five years), we recorded 14 total and six partial grid disturbances totalling 20, which represents a 76.47 per cent reduction in grid disturbance, when compared to the previous five years, (2015 to 2019) where we had 64 total and 21 partial grid disturbances, totalling 85 times." Adebayo Adelabu, Minister of Power, blamed outdated infrastructure for the incessant collapse of the national grid. Yet, it is regrettable that the minister has become an expert at expending unending excuses for the ills in the power sector. First, he said low tariffs would cure the ills in the power sector and went on to implement the most shocking "full cost-reflective tariff regime" of zero subsidies for electricity, just like fuel.

Adelabu then said it was about Bands and had his way. Now, the minister blamed outdated infrastructure. Meanwhile, if the power reforms had been duly implemented, those who bought the successor Electricity Generation Companies (GenCos) and the Electricity Distribution Companies (DisCos) that were unbundled in 2013 from the defunct Power Holding Company of Nigeria (PHCN) should have upgraded their infrastructure.

It is unfortunate that grid failures are becoming the new normal for Nigerians. And this is happening in a country with the abundance of some of the world's largest deposits of coal, oil and gas, and great potential for renewable energy.

This has left Nigerians and businesses reliant on petrol and diesel-powered generators, drawing back the country's economic growth.

In its 2021 Report, the World Bank said that with 85 million Nigerians are lacking access to grid electricity. "This represents 43 per cent of the country's population and makes Nigeria the country with the largest energy access deficit in the world. The lack of reliable power is a significant constraint for citizens and businesses, resulting on annual economic losses estimated at $26.2 billion (₦10.1 trillion) which is equivalent to about 2 per cent of GDP", it said.According to the World Bank Doing Business 2020 Report, Nigeria ranks 171 out of 190 countries in access to electricity. This unenviable position has not changed. Meanwhile, what the constant grid collapse has shown is the absence of diligent implementation of policies that would provide adequate and reliable energy for the people.

Daily Trust
http://dailytrust.com/

20 October 2024

Korea to include construction of 4 small modular reactors in energy plan

Korea will include a plan to build four small modular reactors (SMRs) in the upcoming basic energy plan to be announced later this year, a senior presidential aide said Sunday.

Park Sang-wook, presidential secretary for science and technology, said in an interview with public broadcaster KBS that the SMRs will be reflected in the 11th basic plan for electricity supply and demand.

SMRs are ready-to-install modular reactors that are smaller in size and power output compared with traditional nuclear reactors, allowing for more flexible and scalable deployment. "To achieve the output equivalent to one large nuclear power plant, we need to group together about four SMRs, each with a generating capacity ranging from 170 megawatts to 350 megawatts," Park said during the interview.

Park highlighted SMRs as a next-generation growth driver and a key export product, expressing hope for bipartisan support for their inclusion in the upcoming energy plan. "In this regard, there should be no division between the ruling and opposition parties," he said. He assessed that Korea's SMR capabilities rank among the top three in the world, while its large nuclear power plants are considered "top" globally when factoring in technology, construction capabilities, and operational performance, particularly by the state-run Korea Hydro & Nuclear Power.

Since SMRs are still in the early stages of development, Park emphasized the importance of advancing related technology while simultaneously establishing licensing criteria. "We are intensifying our efforts to develop a Korean-style SMR and ensure timely licensing by expanding our pool of specialized personnel," he said.

Korea Times
http://www.koreatimes.co.kr

22 October 2024

Singapore approves import of solar energy from Australia via undersea cable

A multi-billion-dollar project to pipe solar-generated electricity 4,300 km (2,672 miles) to Singapore from Australia has received conditional approval from the island state's energy market regulator, project owner SunCable said on Tuesday.

Singapore's Energy Market Authority granted the conditional approval after a process to determine whether SunCable's Australia-Asia PowerLink project was technically and commercially viable, the company said in a press release. Owned by Atlassian, opens new tab billionaire Mike Cannon-Brookes, SunCable aims to produce 6 GW of electricity at a vast solar farm in Northern Australia and ship about a third of that to Singapore via undersea cable.

Suncable says the project will generate A$20 billion ($13 billion) in economic value for northern Australia. However, the project has been dogged by questions over its viability and Cannon-Brookes took control after a dispute with fellow owner and Fortescue Metals, opens new tab billionaire founder Andrew Forrest over its prospects for success.

"Today’s announcement is a vote of confidence in the commercial and technical viability of our project," SunCable International Interim CEO Mitesh Patel said in a statement. SunCable said the approval meant it could pursue the next phase of development, including its partnership with Indonesia, whose waters the planned cable must run through. SunCable said it plans to spend $2.5 billion in Indonesia over the project's life.

The company has invested A$270 million in project development across the three countries it said on Tuesday. A final investment decision is expected in 2027. The project received environmental approval from Australia in August.

Reuters
http://www.reuters.com/

22 October 2024

NESO commissioned by the UK, Scottish and Welsh Governments to develop the first Strategic Spatial Energy Plan (SSEP) for Great Britain

Great Britain has embarked upon the biggest change to the way we generate, move and consume energy since the high voltage transmission grid was established in the 1950s.

A ‘business as usual’ approach will not help Great Britain achieve national decarbonisation ambitions and work is needed to further accelerate the build of low carbon generation and the infrastructure needed to transport this energy to where it is used.

The SSEP will provide the high-level blueprint from which we can plan the future of the energy system for the whole of Great Britain. The SSEP will ask society what it values

most when thinking about energy and their environment so that their views are incorporated into the plan from the beginning.

It will assess optimal locations, quantities and types of energy infrastructure required to meet our future energy demand. Economic, environmental, and technical engineering design input, combined with considerable engagement with societal, expert and political stakeholders will help deliver this outcome.

The plan will help optimise and accelerate the transition to clean, secure and affordable energy by providing greater engagement, consultation and clarity to communities, industry, investors, and consumers on the shape of our future reformed energy system.

The SSEP will be interlinked with other NESO plans including the Centralised Strategic Network Plan (CSNP) and the Regional Energy Strategic Planner role and the NESO will work closely with other bodies including The Crown Estate and Crown Estate Scotland on the plan.

NESO
http://www.neso.energy/

26 October 2024

China's largest offshore wind farm goes into operation

China's largest affordable offshore wind farm went into operation and achieved grid-connected power generation with a full capacity, its operator State Power Investment Corporation Limited (SPIC) said Friday.

The 450-megawatt project consists of 53 wind turbine units installed in the waters 28 kilometers off the coast of Rushan City in east China's Shandong Province, with a total installed capacity of 1.5 million kilowatts. "For a large-scale offshore wind farm with large-capacity generator sets, our teams have followed the principles of using sea areas economically, saving construction costs and minimizing cable losses, and tackled technical problems with the use of 66 kV submarine cables throughout the farm to collect the electricity generated by each wind turbine. We have also designed and manufactured a modular offshore booster station in an innovative way, saving 190 hectares of sea use and 20 percent of construction cost for the station," said Chen Lizhi, president of Shandong offshore wind power company with SPIC. The farm can generate 4.5 billion kilowatt-hours of green electricity a year, saving 1.4 million tons of standard coal, and cutting emissions of ash, carbon monoxide and other waste gases by about 4.25 million tons annually.

Affordable wind power means that the price of wind power is equivalent to that of traditional coal-fired power, and no longer requires government subsidies.

EV Wind
http://www.evwind.es

29 October 2024

Mali and Mauritania embark on a $909m energy project

Mauritania and Mali have launched a large-scale energy project worth $909.5 million, which includes the construction of hundreds of kilometres of high-voltage power lines between the two countries. This is reported by the British newspaper Daily Express.

The length of the line will be about 1,400 kilometres and its capacity will be 600 MW. The project also includes a 50 MW solar power plant in Mauritania's Kiffa and the connection of another 100,000 households to the grid: 80,000 in Mauritania and 20,000 in Mali. The initiative will also form part of a proposed energy corridor that will connect Mauritania to Chad via Burkina Faso, Niger and Mali.

The African Development Bank is leading the group of development partners, providing reliable support to the project. In December 2023, the two governments issued a

tender for the project. In January this year, the African Development Bank provided a $298 million loan to Mauritania and Mali to help build the transmission line.

African Initiative
http://afrinz.ru/

31 October 2024

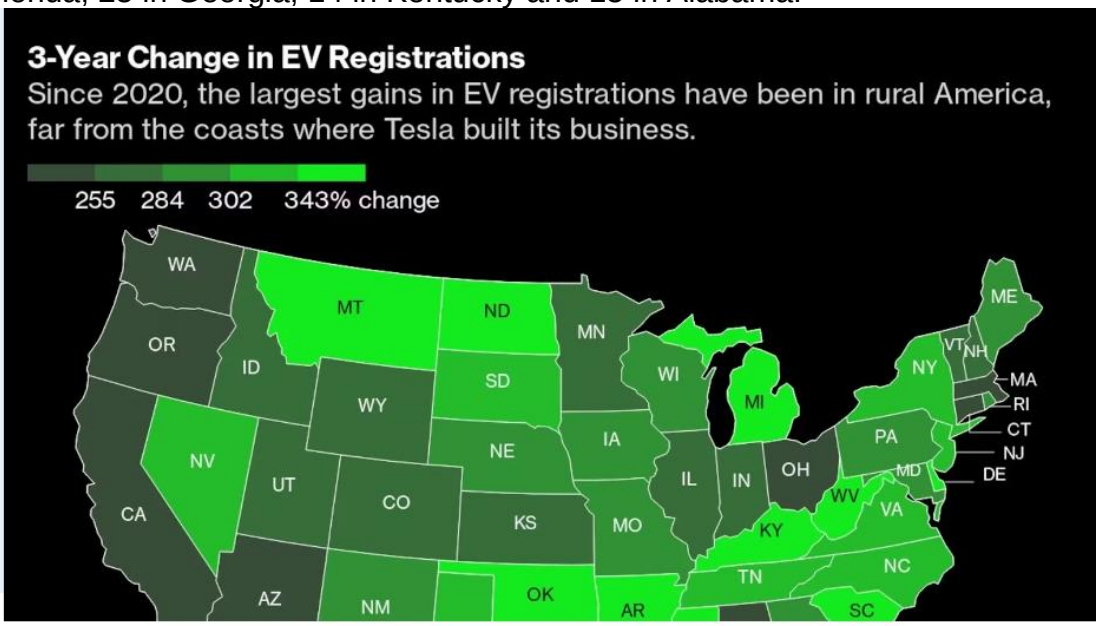
The Rust Belt Is Becoming Ground Zero for the EV Charging Boom

As electric car sales pick up pace far from the US coasts, a wave of new fast-charging stations coming online from the Rust Belt down to the Deep South.

Roughly 600 quick-turn stations switched on in the third quarter across the US, a 7% increase from the end of June, according to a Bloomberg Green analysis of Department of Energy data. There are now nearly 9,000 public, fast-charging sites in the US, and their proliferation has only quickened. For the year to date, the number of fast-charging options in the US has grown by 35% over the year-earlier period. At that rate, quick-turn stations will number roughly 11,600 by the end of the year — roughly one electron station for every 10 US gas stations.

"There are so many new stations going in every quarter," said Erika Myers, executive director of CharIN North America, a Washington DC-based nonprofit focused on improving the charging experience. "It might feel like there isn't much (charging) if you researched this last year, but take another look."

The recent charger blitz is a boon, particularly for drivers in the US Midwest and South. The crowd of the new electron pumps cuts from Michigan south to Florida. Between June and October, drivers got 51 new places to quickly top up an EV in Michigan, 24 in Ohio, 38 in Florida, 25 in Georgia, 14 in Kentucky and 15 in Alabama.



While the pace of electric vehicle sales gains slowed for a beat at the start of the year, US drivers are once again scrambling for battery-powered models. Drawn in part by a parade of newer, more affordable machines, Americans bought 346,309 fully electric vehicles in the third quarter, an 11% increase over the year-earlier quarter, according to Cox Automotive Inc. There are now 3.5 million EVs registered in the US, according to federal data, and sales gains have been steepest in rural states like Oklahoma, Arkansas and Montana that have largely steered clear of battery-powered machines until recently.

EVgo Inc., which operates about 1,000 fast-charging stations in the US, says the new crop of more affordable vehicles is juicing returns. "What we're seeing on the ground are

people buying electric vehicles across the United States," CEO Badar Khan said on an August earnings call. "That just speaks very well to the underlying demand."

The third-quarter infrastructure blitz was fueled in part by the Biden administration's National Electric Vehicle Infrastructure (NEVI) Formula program, a $5 billion plan to fill in the remaining gaps in the charging map. Though it's still early days, that money switched on nine stations in the third quarter, including the first facilities funded by the program in Rhode Island and Utah. Those figures should increase quickly in coming months; some 29 states have awarded NEVI contracts or signed agreements for another 700 charging stations, according to the government.

However, the invisible hand on the charging lever is still plenty strong even absent Beltway sweeteners. North American operators will spend an estimated $6.1 billion on charging infrastructure this year, nearly double their 2023 investment. That annual spend is expected to double again by 2030.

Bloomberg
http://www.bloomberg.com/

31 October 2024

New ultra-high voltage project begins operation in north China

A 1,000-kilovolt ultra-high voltage (UHV) alternating current (AC) project was officially put into operation on Thursday, connecting clean energy resources in the north of China with economically dynamic regions such as the Beijing-Tianjin-Hebei region.

The Zhangbei-Shengli 1,000-kilovolt UHV AC project is expected to transmit over 70 billion kilowatt-hours of electricity -- an amount sufficient to power 19 million households for a year -- annually from Xilin Gol League in north China's Inner Mongolia Autonomous Region and Zhangjiakou in Hebei Province to the Beijing-Tianjin-Hebei region, Shandong and Jiangsu provinces, and other regions.

The project applies the UHV technology for the first time to connect a clean energy base in the north of Hebei with wind farms in Xilin Gol League, increasing the proportion of new energy in UHV transmission channels and boosting the consumption of green electricity on the receiving end of the grid, thereby promoting the transition to clean and low-carbon energy. It also addresses the rising demand for electricity in the receiving regions more effectively.

China is at the technological forefront in new energy power generation, UHV power transmission, flexible direct current transmission and digitization of electricity systems, according to a report issued earlier this year by the Global Energy Interconnection Development and Cooperation Organization, a non-profit international organization headquartered in Beijing.

Xinhua
http://news.cn