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Global Transmission Report

Information and analysis on the global electricity transmission industry

Alberta's Electricity Transition

Plans to invest CAD7.12 billion in grid modernisation

Alberta stands at a critical juncture in its energy history. As the Western Canadian province transitions from coal-fired power to renewable energy generation while experiencing unprecedented population and industrial growth, the Alberta Electric System Operator (AESO), a not-for-profit government agency, has unveiled an ambitious CAD7.12 billion transmission infrastructure plan that will reshape the sector over the next two decades.

Released in January 2025, the AESO's Long-Term Transmission Plan (LTP), addresses mounting challenges from ageing infrastructure, growing electricity demands, and the integration of intermittent renewable energy generation that has dramatically altered the province's power landscape since the phase-out of coal generation in 2024.

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Kenya's Power Transformation

Provides private investment opportunities

Kenya, which is projected to become East Africa's largest economy in 2025, surpassing Ethiopia, is actively pursuing its Vision 2030 and Bottom-up Economic Transformation Agenda (BETA) goals of transforming the country into a newly industrialised middle-income country and ultimately achieving climate neutrality by 2050. The electricity sector will be a key development catalyst in its transformation. By 2030, the country aims to achieve 100 per cent renewable energy generation and universal electricity access.

The BETA defines key government intervention areas in the power sector, including the construction of 2,930 km of high voltage transmission lines and 37 associated substations, rolling out electric vehicle (EV) charging infrastructure in urban areas and along highways, as well as providing financial and tax incentives for public service vehicles and commercial transporters to convert to EVs.

Kenya's latest Least Cost Power Development Plan (LCPDP) 2024-43 projects the estimated peak demand to grow at an average of 6.84 per cent from 2,170 MW (2023) to 8,152 MW in 2043 in the Reference scenario. The Vision and Low scenarios project the peak demand to reach 13,495 MW and 4,996 MW, recording an average growth of 9.57 per cent and 4.26 per cent, respectively.

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South Korea's Transmission Plan

Building infrastructure for a carbon-free future

South Korea is actively investing in revamping its electricity sector to achieve energy security, carbon neutrality (by 2050), and support the growth of high-tech industries like semiconductors, data centres and artificial intelligence (AI). The focus is on renewable energy and grid modernisation. It plans to quadruple its renewable energy capacity from 30 GW in 2023 to 121.9 GW in 2038, according to the country's latest 11th Basic Plan for Long-term Electricity Supply and Demand, finalised in February 2025.

South Korea's carbon-free energy capacity is set to increase to 53 per cent by 2030 and to 70.7 per cent by 2038 (compared to less than 40 per cent currently), driven by renewable and nuclear energy expansion and decreased reliance on coal and liquefied natural gas.

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Alberta's Electricity Transition (contd...)

Prepared every two years, the LTP uses scenarios to assess transmission needs across two distinct timeframes: detailed near-term analysis covering the next five years of the transmission system (69 kV and above) for high confidence regional developments, and longer-term system-wide planning which covers the next 6-20 years focusing on bulk transmission requirements (240 kV and 500 kV). When necessary developments are identified, the AESO prepares and files the Needs Identification Document (NID) with the Alberta Utilities Commission for project approval. Once approved, the designated transmission facility owners (TFOs), which develop and operate transmission infrastructure in Alberta, handle the detailed work of siting, routing, constructing, operating, and maintaining the actual transmission facilities. The primary TFOs — AltaLink Management Limited, ATCO Electric Limited, ENMAX Power Corporation and EPCOR Distribution and Transmission Inc. — serve distinct regions across Alberta.

The latest LTP (2025) addresses mounting pressures that are rapidly reshaping the province's electricity landscape. The province is transitioning from a "zero congestion" planning standard — which requires the system to handle 100 per cent of anticipated electricity flows — to an "optimal transmission planning" framework that emphasises economic efficiency and cost causation principles. Enhanced intertie connections with neighbouring provinces offer new opportunities for power sharing and grid stability, while the AESO explores non-wire alternatives — including grid-forming battery energy storage systems (BESS), dynamic line rating (DLR) technologies, and power flow control systems — that could complement traditional infrastructure investments.

Figure 1: Existing transmission system of Alberta

Source: AEMO LTP 2025

The *Global Transmission Report* examines how Alberta built its current grid around coal-fired generation, the infrastructure projects already underway, and the AESO's three-pronged approach to future development. The LTP sets out transmission plans that are grouped by load-driven projects to ensure reliable service to growing communities, generation-driven investments to manage renewable energy integration, and intertie enhancements to strengthen Alberta's connections with broader regional markets. The plan also acknowledges emerging challenges from grid reliability concerns and massive data centre proposals, while exploring innovative technologies that could reshape how transmission systems operate in the decades ahead.

Alberta's grid revolution from coal to renewables

Alberta's transmission system has undergone a dramatic transformation, particularly over the past decade. For over half a century, the province's electricity grid was built around a simple north-to-south paradigm of power generation and distribution.

Built in the 1950s around Edmonton's Wabamun Lake area, the transmission system centred on abundant coal resources. The region hosted roughly 4,500 MW of coal-based generation, one of Canada's most concentrated thermal hubs, supported by the sophisticated 500 kV Keephills–Ellerslie–Genesee (KEG) loop system. A robust 240 kV network connected Calgary, Red Deer, and Edmonton, functioning like a massive one-way highway transferring excess electricity southward from Edmonton's coal plants.

This coal-based paradigm began shifting in the 1990s as southern Alberta emerged as a renewable energy hub. The transition gained momentum through the 2000s as ageing assets, poor economics, and federal environmental rules put pressure on the coal fleet. The game-changing moment came in 2015 with two 500 kV high voltage direct current (HVDC) lines — the Eastern and Western Alberta Transmission Lines — enabling bi-directional power transfers of up to 1,000 MW between Edmonton and Calgary.

Southern Alberta simultaneously developed extensive 240 kV networks for wind and solar access, including the Southern Alberta Transmission Reinforcement (SATR) from Windy Flats to Foothills and the Foothills Area Transmission Development (FATD). Alberta maintained strategic connections with neighbours through three interties: the Alberta–British Columbia (BC) connection (a 500 kV main line plus two 138 kV elements), the 230 kV Montana–Alberta Tie Line (MATL), and the 150 MW Alberta–Saskatchewan HVDC interconnection.

The transformation culminated in 2024 with the retirement of Alberta's entire coal fleet — the last coal plant went offline in June 2024 — driven partly by the federal government's Clean Electricity

Table 1: Albtera's transmission projects under active development

Project	Route	Voltage (kV)	Developer	Purpose	Status	Timeline
Vauxhall Area Transmission Development (VATD)	Fincastle–Taber	138	AltaLink	To increase system capability to integrate new generation	Under construction	2025
Central East Transfer-Out (CETO)	Tinchebray–Gaetz	240	AltaLink and ATCO	For facilitating increased generator grid connections between Edmonton and Calgary	Under construction	2026
City of Edmonton Transmission Reinforcement (CETR)	N/A	240/72	EPCOR	To respond to load growth and facilitate end-of-life asset replacements	NID application approved in September 2024	2027
Provost to Edgerton and Nilrem to Vermilion (PENV)	Provost–Edgerton, Nilrem–Vermilion	N/A	ATCO	For increasing capability for renewable generation integration and the central east load service	NA	NA
Chapel Rock to Pincher Creek (CRPC)	Chapel Rock–Castle Rock Ridge/Goose Lake	240	AltaLink	To increase capacity for southwest wind/solar transfer to Calgary and strengthen the Alberta–BC intertie	NA	NA

Note: NA – not available
Source: AEMO LTP 2025

Regulations (CER), which establishes emission limits for electricity generators as part of Canada's strategy to achieve net zero by 2050.

Grid projects in development

Even as the AESO develops its ambitious long-term vision, the transformation is already underway. Several major transmission projects approved through the NID process are currently at various stages of development, representing critical stepping stones towards the grid of the future. These projects address immediate pressures while laying groundwork for the larger transformation ahead.

Scenario development

The emergence of extensive wind and solar installations has created bidirectional power flows on the transmission system. This has created new operational complexities and reliability challenges. Particularly, ageing transmission infrastructure has become an increasingly pressing issue, with equipment that was designed for predictable power flows now managing complex, variable patterns. The grid must handle more unpredictable power flows while maintaining the strict reliability standards.

In this rapidly evolving energy landscape, the AESO has developed four distinct scenarios to capture the full range of possibilities Alberta might face.

The Reference Case serves as the base scenario for the AESO's transmission planning assessment. The LTO Reference Case projects that peak load growth will average an annual rate of 1.4 per cent over the next 20 years.

AESO LTP 2025 transmission projects

The AESO's LTP categorises transmission needs into three distinct parts, each addressing different aspects of the province's evolving electricity system:

Load-driven development

Load-driven transmission plans, worth CAD1.8 billion, focus on ensuring Albertans' electricity needs are met reliably. Of the total, over the next five years, CAD965 million will be invested in areas where load growth — whether from population increase, industrial expansion, or emerging sectors such as data centres — threatens to outpace the existing transmission capacity.

Generation-driven development

Alberta's generation-driven transmission plans, worth CAD4.6 billion, address congestion caused by the province's evolving electricity mix. Developed under a "zero congestion" standard, these projects ensure renewable power reaches consumers without bottlenecks, but this is set to change. In July 2024, the government adopted an OTP framework, under which projects must meet reliability needs and deliver economic benefits. As per the OTP framework, cost allocation will shift, and all costs borne by consumers and new generators will contribute towards transmission infrastructure costs through an upfront and non-refundable transmission reinforcement payment (TRP) mechanism. The TRP will replace the current Generating Unit Owner's Contribution (GUOC) regime. The AESO plans to develop

Table 2: Summary of AESO's long-term outlook (LTO) scenarios

Scenario	Description	Load	Generation
Reference Case	Decarbonisation by 2050 Covers key economic and oil sands outlook, electrification trends, and recent advancements in generation technology and costs	■ Near-term load is driven by macro factors like gross domestic product, employment and population trends ■ Longer term load driven by electric vehicle (EV) adoption, hydrogen production and building electrification	■ Driven by wind and solar additions, and combined cycle and cogeneration carbon capture, utilisation and storage (CCUS) retrofits ■ Includes several nuclear small modular reactor (SMR) base load projects in the longer term
Decarbonisation by 2035	Decarbonisation by 2035 Follows the federal CER restrictions	■ Same load profile as the Reference Case	■ Higher development of alternative technologies, like hydrogen-fired simple-cycle and new combined-cycle with CCUS facilities
Alternative Decarbonisation	Decarbonisation by 2050 Increasing intertie connections with neighbouring jurisdictions	■ Same load profile as the Reference Case	■ Greater reliance on power imports via the BC intertie enabled by its increased capacity ■ Lowest longer-term capacity buildout
High Electrification	Decarbonisation by 2050 Accelerated residential, commercial and industrial electrification	■ Greater adoption of EVs and electrification of building heating and cooling. Additional industrial loads (hydrogen production)	■ Increased base load generation technologies – new and retrofit combined-cycle with CCUS ■ Greater nuclear SMR development in the longer term

Source: AEMO LTP 2025

OTP rules through 2025-26, with implementation beginning in 2027. However, this is likely to create uncertainty for the identified generation-driven portfolio due to delays or reprioritisation under the new model.

Intertie-driven development

Alberta's connections with neighbouring jurisdictions have become increasingly crucial for balancing renewable energy generation. Intertie-driven transmission plans, worth CAD750 million, respond directly to recent policy directions on advancing a restructured energy market (REM).

These include restoring the Alberta–BC intertie to near 950 MW capacity, maintaining high levels of ancillary services to support full import flows on both the BC connection and the MATL, and increasing the Alberta–Saskatchewan intertie's capacity as part of equipment replacement projects.

The AESO estimates that transmission costs, currently at CAD43 per MWh, will rise by over 9 per cent to CAD47 per MWh by 2029. If all proposed generation-driven projects proceed, costs could reach CAD58 per MWh by 2045 — a 35 per cent increase driven by extensive network reinforcements and the capital requirements of new infrastructure.

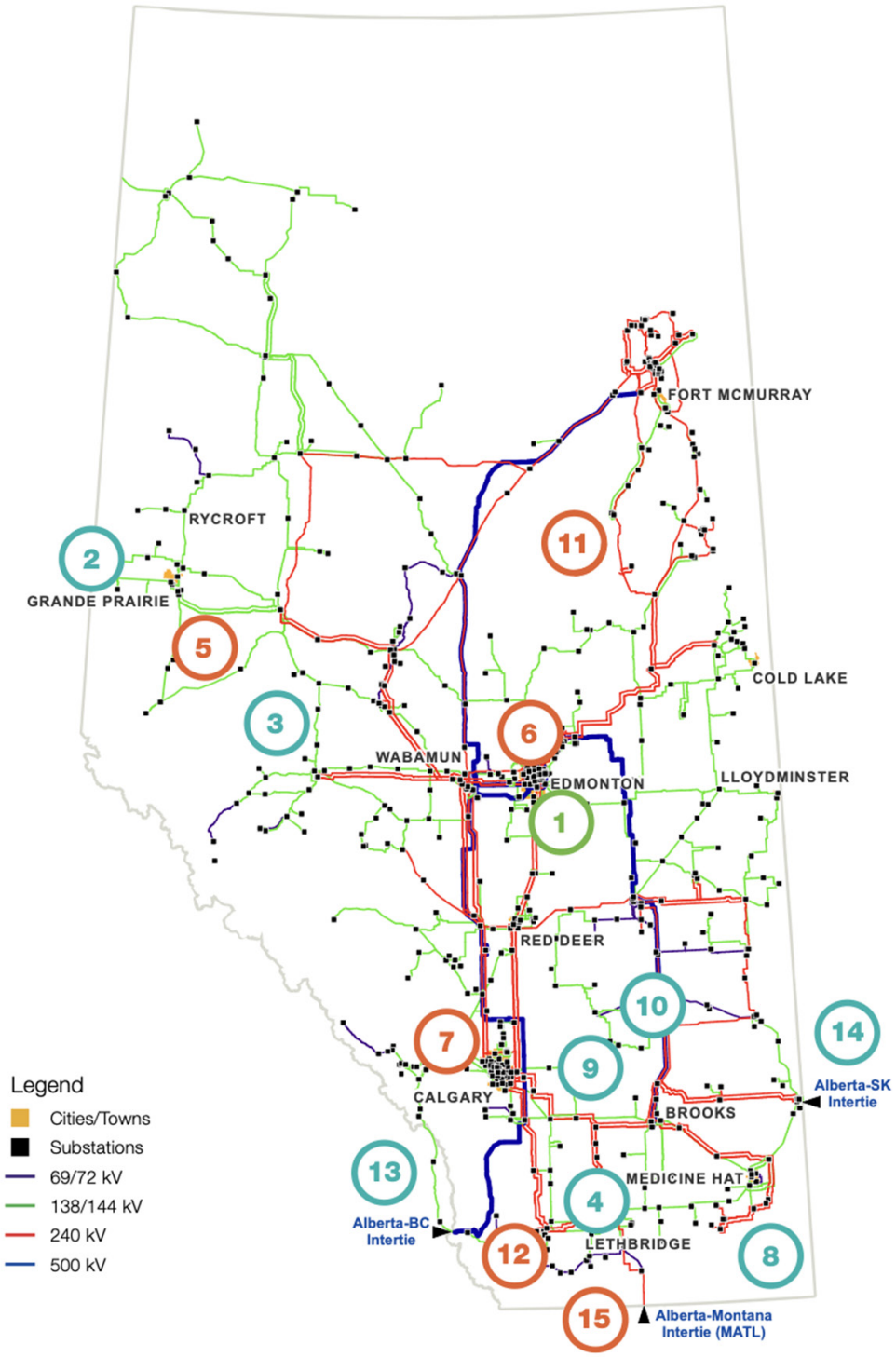
Emerging technology options and non-wires solutions

The transmission plan clearly acknowledges that emerging technologies can complement traditional infrastructure approaches while potentially reducing overall system costs. The AESO has been actively piloting and evaluating various technological solutions that can transform the way the grid operates and expand its capabilities without requiring proportional infrastructure investment.

To manage transmission rates effectively while addressing growing demand, the AESO is implementing a variety of optimisation and funding strategies:

- **Deploy advanced power flow control devices:** In September 2022, a modular power flow controller pilot on Fincastle's 138 kV line demonstrated how fine-tuning reactance can shift flows away from congested corridors — delivering immediate relief without new towers or right-of-way (ROW).
- **Unlock extra capacity with DLRs:** By feeding real-time weather data into lines such as 7L128 (144 kV Coyote Lake–Michichi Creek) and 924L/927L (240 kV Milo–Langdon), the AESO safely enhances thermal limits under favourable conditions, deferring traditional cost hike.
- **Integrate grid-forming BESS for multi-service value:** Next-generation BESS installations are being tested not just for energy

Figure 2: Location of upcoming transmission projects



Source: AEMO LTP 2025

storage and dispatch, but also for supplying inertia, voltage support, fast-acting congestion relief and system-strength enhancements.

- **Extend system flexibility via remedial action schemes:** The AESO currently operates over 60 automated protection schemes that trip generation or load to maintain system security. It continues to improve these remedial action schemes (RAS) to maximise capacity from the existing network. By automatically detecting critical conditions, the system can take corrective actions, such as tripping generation or load, to ensure reliability.

- **Formalise non-wires alternatives in planning:** Under the 2024 grid-modernisation amendment, distributed resources, such as demand response and behind-the-meter storage, can now compete with wires solutions, allowing the AESO to address peak constraints with lower-cost, market-based options.

- **Leverage federal funding and incentives:** By tapping into programmes, such as the Smart Renewables and Electrification Pathways, and partnering with the Canada Infrastructure Bank, the AESO can offset capital outlays on critical projects. This approach can help in keeping rate impacts to a minimum.

While these technologies represent the grid's evolution towards more intelligent and responsive systems that maximise existing asset value, their increasing complexity poses management challenges. If these challenges become unmanageable from a reliability perspective, it may necessitate transmission development.

Navigating Alberta's energy future

The AESO's strategy for implementing this transmission plan takes into account the challenges that may impact its execution. Ongoing advancements in technology are continuously reshaping the economics and capabilities of both generation and transmission solutions. The transition to OTP will fundamentally change project evaluation criteria and cost allocation mechanisms. Further, the actual pace of development of proposed data centres and industrial loads is highly uncertain, as is the overall economic environment influencing provincial growth trajectories.

Beyond these planning uncertainties, the AESO faces two key challenges that could fundamentally reshape Alberta's electrical landscape. The province's swift transition to renewables has created unprecedented technical complexities that could threaten grid stability. As Alberta's generation fleet increasingly relies on wind and solar power, the power system's frequency response, system strength, and operational flexibility have diminished. To address these issues, the AESO has outlined comprehensive solutions in its recently released 2025 Reliability Requirements Roadmap, which is aligned with the

Table 3: Summary of AESO's LTP 2025 transmission projects

Map Ref.	Project	Region	Timeframe	Voltage (kV)	Cost (CAD million)
Load-driven projects (meet load growth)					
1	CETR*^	Edmonton (in city)	Near-term	240/72	280
2	144 kV Grande Prairie development	Northwest	Near-term	144	480
3	Valleyview–Fox Creek line#	Northwest	Near-term	144	160
4	Lethbridge region	South	Near-term	240/138	45
5	240 kV Grande Prairie development	Northwest	Longer-term	240	260
6	Edmonton reinforcements^	Edmonton	Longer-term	72	70
7	Calgary reinforcements	Calgary	Longer-term	240/138	470
Generation-driven projects (mitigate congestion)					
8	Whitla–Newell line	Southeast	Near-term	240	650
9	Newell–Milo–Langdon and Substation 65–Sarcee lines	Southwest	Near-term	500/240	1,850
10	Wintering Hills–Coyote Lake line	Sheerness	Near-term	138	55
11	Thickwood Hills–Heartland line	Northeast	Longer-term	500	1,600
12	Chapel Rock–Castle Rock Ridge line	Southwest	Longer-term	500/240	450
Intertie-driven projects (improve intertie)					
13	Alberta–BC	South	Near-term	500	150
14	Alberta–Saskatchewan	South	Near-term	HVDC	600
15	MATL	South	Longer-term	HVDC	N/A

*Note: *NID for the project was approved in September 2024 and is under development; ^The projects will replace ageing infrastructure; #The project will help manage inflow constraints*

Source: AEMO LTP 2025

renewable energy market. These solutions include fast frequency response technologies, synchronous condensers, and grid-forming BESS. Alberta also faces an unprecedented data centre boom. In 2024, projects over 8,600 MW in capacity submitted connection applications, representing massive, discrete loads concentrated in specific geographic locations that present fundamentally different challenges from distributed residential growth. Since these projects are in their early development stages, the 2025 LTP does not include transmission plans for these potential energy loads. However, the AESO is developing location-based capability maps and reviewing regulatory frameworks to ensure reliable integration of these loads.

The successful implementation of the transmission plan will directly influence Alberta's ability to attract investment across multiple sectors. Renewable energy developers require confidence in transmission access, data centre operators need assurance of reliable service, and industrial facilities consider electrical infrastructure capability as a critical factor in their decision-making. The investments outlined in the 2025 LTP establish essential foundations for Alberta's energy transformation, fundamentally shaping the province's electricity landscape for decades to come.◆

South Korea's Transmission Plan (contd...)

This requires corresponding investment in transmission infrastructure as well as the faster execution of grid expansion projects. The country is taking a comprehensive approach to grid modernisation, including leveraging legislative tools, grid planning and advanced technologies. In May 2025, South Korea's Ministry of Trade, Industry and Energy (MOTIE) unveiled Korea Electric Power Corporation's (KEPCO) (the country's sole transmission and distribution operator) 11th Long-Term Transmission and Substation Facilities Plan (2024-2038) after it was confirmed by the Electricity Commission. The plan involves a massive investment commitment of KRW72.8 trillion over the 15-year period, representing an increase of KRW16.3 trillion or 29 per cent from the previous 10th Long-Term Transmission and Substation Facilities Plan (KRW56.5 trillion) (May 2023). The investment increase reflects several factors, including material cost increases due to the Russia-Ukraine conflict and the growing proportion of underground transmission lines in urban areas.

The ambitious transmission infrastructure plan outlines a comprehensive transformation of the nation's power grid to support the evolving energy landscape and burgeoning high-tech industries, particularly semiconductors. The proposed Yongin and Pyeongtaek semiconductor clusters, backed by a massive KRW33 trillion government support package and Samsung Electronics and SK Hynix's commitment of USD471.1 billion toward a mega cluster in Gyeonggi province, are driving electricity demand projections. Power consumption is projected to reach 735.1 TWh by 2038, representing an annual average increase of 2 per cent during the planning period.

Recognising these mounting pressures, KEPCO has reorganised its operations in February 2025 to accelerate grid development. The utility established a dedicated Power Grid Location Office to streamline site selection processes, which account for more than 60 per cent of project timelines and have delayed critical infrastructure for years. As of early 2025, 71 per cent of new grid projects under the previous 10th Transmission Plan remained stalled in site selection or preparation phases, highlighting the urgency of these organisational reforms.

In terms of infrastructure, the latest plan aims to add approximately 30,726 ckt km of new transmission lines, 192,066 MVA of additional transformer capacity and 396 substations by 2038. KEPCO's research institute expects the plan will generate approximately KRW134 trillion in economic ripple effects and create around 480,000 jobs, highlighting its significance as both an infrastructure and economic development initiative.

Recent policy developments

South Korea's energy transformation is underpinned by a comprehensive policy framework that gained unprecedented momentum in early 2025. The Korean National Assembly passed three critical laws in February 2025 as a coordinated policy package, which were subsequently promulgated in March 2025.

The Special Act on the Expansion of the National Power Grid (National Power Grid Act), which will become effective from September 26, 2025, will help expedite KEPCO's transmission projects by streamlining permitting procedures, such as the simplification of environmental impact assessment procedures, expanding deemed permits and licenses (to 35 permits) and reducing development and construction timelines (from an average of 13 years to nine years). The legislation also provides enhanced compensation mechanisms for local communities, addressing one of the most persistent challenges in transmission development. It complements the existing Electric Power Source Development Promotion Act, which enables the government to fast-track the development of certain strategic electricity generation or transmission projects by providing a further streamlined path for targeted transmission projects. The latter includes KEPCO's transmission and substation facilities with voltages of 345 kV and above that facilitate electricity transmission from renewable or nuclear energy projects, or for use in strategic national industries like semiconductors. These projects need to be approved by the National Power Grid Committee, which will be established under the act and chaired by the prime minister. The idea is for the government to take the lead in establishing a plan for implementing a national core power grid, given that the grid has been unable to meet the growing electricity demand.

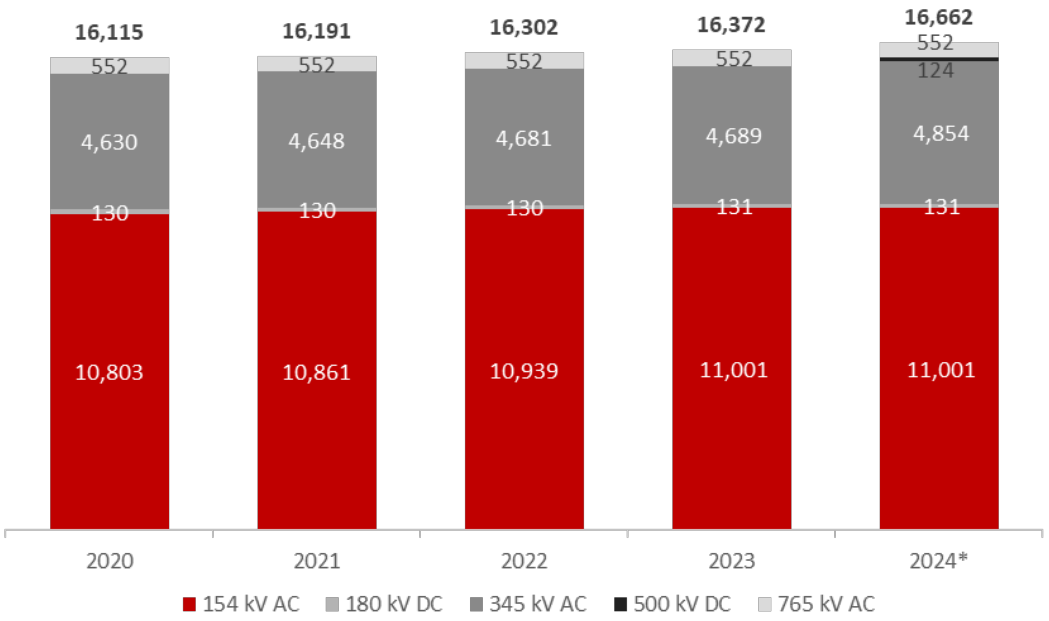
The Special Act on the Promotion of Offshore Wind Power Distribution and Industrial Development, which will become effective from March 26, 2026, creates a streamlined licensing framework for offshore wind (OSW) projects, which will require substantial transmission infrastructure to deliver the targeted 14.3 GW of OSW capacity by 2030 and 40.7 GW by 2038 (compared to only 200 MW of current capacity). Under the act, MOTIE will designate power generation zones where OSW projects will be permitted to be developed. A new special committee comprising the prime minister and representatives of key regulator bodies will act as a one-stop shop to coordinate the licensing and permitting processes for OSW projects. It includes grandfathering provisions for existing developers, who would also have the option to apply to MOTIE for inclusion in a power generation zone. The related criteria and further guidance are expected to be released by MOTIE in the future. The law gives favourable consideration to state-owned enterprises, including KEPCO and its generation subsidiaries, in the development of OSW projects. MOTIE has awarded 1,886 MW of OSW projects and had announced a roadmap in 2024 to facilitate the development of 7-8 GW of OSW capacity until the end of the first half of 2026.

Finally, the Special Act on High-Level Radioactive Waste Management supports the nuclear component of Korea's carbon-free strategy, providing for interim storage facilities by 2050 and permanent disposal by 2060, in place of the current practice of storing it onsite of nuclear power plants. The country plans to build two new reactors (with 2.8 GW capacity) and one small modular reactor (700 MW) by 2038.

Existing infrastructure

As of 2024, South Korea's total installed generation capacity is estimated to have reached 151.4 GW (compared to 144.1 GW in 2023), with thermal sources (coal, oil and natural gas) still dominant at 58 per cent, followed by renewables and emerging technologies

Figure 1: Growth in South Korea's installed transmission line length (km)



*Note: *Data for 2024 includes the 500 kV Bukdangjin-Godeok HVDC Phase II project that was commissioned in 2024; In circuit km, the total line length during the year was 35,761 ckt km.*

Sources: Korea Electric Power Corporation; Electric Power Statistics Information System, South Korea; Global Transmission Report

(20 per cent), nuclear (18 per cent) and hydropower (4 per cent). In terms of transmission infrastructure, the country had a line length of 16,662 km and transformation capacity of 373,070 MVA (across 154 kV to 765 kV voltages) by the end of 2024, each growing at a CAGR of around 1 per cent since 2020. The network is dominated by two principal AC voltages of 154 kV (66 per cent) and 345 kV (29 per cent). The national power grid is an isolated system; there are no cross-border transmission lines, implying electricity demand is met entirely through local production. This amplifies the importance of domestic transmission planning, as South Korea cannot rely on regional interconnections to balance supply and demand or provide backup during system stress.

Future transmission plan

Fundamental pillars

The plan is structured around three fundamental pillars that reflect South Korea's response to future uncertainties and technological evolution.

Adaptive grid planning for uncertainty: The first pillar focuses on developing flexible power grid planning capable of accommodating carbon-free power sources while maintaining system reliability. KEPCO's "flexible lines" strategy adjusts transmission planning to real-world conditions, scaling grid capacity based on actual deployment and permit approvals. A prime example is the 500 kV Honam high voltage direct current (HVDC) project, which will connect the renewable-rich Honam region with the Seoul Metropolitan Area (2031) and the Central region (2036-38). Originally envisioned as two 4 GW routes, it is now restructured into four 2 GW routes, phased across 2031 to 2038. This three-stage roll-out aligns with the technical limits of current HVDC systems while distributing injection points across multiple substations, enhancing regional stability and shortening transmission distances. Major industrial hubs like the Yongin semiconductor cluster will receive robust power infrastructure, including new substations and over 10 GW of capacity. Similar upgrades target Saemangeum, Gumi and other economic zones. To meet evolving demand, KEPCO now plans to use predictive models, allowing grid readiness to precede rather than chase industrial growth. High-capacity conductors and interim energy storage in Jeonnam and Jeonbuk further strengthen resilience during the transition.

Expedited infrastructure deployment: The second pillar addresses the critical challenge of timely infrastructure construction through multi-faceted approaches. KEPCO will leverage the National Power Grid Act to accelerate grid deployment. The plan incorporates innovative strategies for site acquisition, community engagement and project management. A new comprehensive governance system now coordinates all major stakeholders, bringing together relevant ministries, KEPCO, local governments and major industrial customers for systematic project management. Beyond administrative coordination, the system actively monitors construction project status, analyses business risks and develops solutions for current issues before they become critical delays. Land acquisition, often a sticking point, is also eased by repurposing idle military and school land. This proactive approach aims to minimise public complaints and prevent project delays through the strategic use of underutilised national assets. KEPCO is fundamentally changing how it engages with local communities. Mandatory business briefing sessions now precede all site selection processes, providing advance information about transmission and substation construction projects to local residents and promoting transparent decision-making. Regular policy briefing sessions share detailed information about power grid expansion needs and compensation

Table 1: Upcoming transmission infrastructure in South Korea (2025-38)

Voltage	2025-2030	2030	2030-2038	2038
Transmission line length (ckt km)				
765 kV	8	1,032	–	1,032
345 kV	3,064	13,134	6,150	19,284
154 kV	7,130	31,317	5,732	37,049
HVDC	1,288	1,768	2,050	3,818
Total line length	**11,490**	**47,251**	**13,932**	**61,183**
Substation capacity (MVA)				
765 kV	10,000	56,110	–	56,110
345 kV	47,500	193,970	35,000	228,970
154 kV	26,640	187,226	17,420	204,646
HVDC	31,500	35,900	19,500	55,400
Total substation capacity	**115,640**	**473,206**	**71,920**	**545,126**
Substations (number)				
765 kV	1	9	–	9
345 kV	37	154	25	179
154 kV	181	951	130	1,081
HVDC	11	17	11	28
Total substations	**230**	**1,131**	**166**	**1,297**

Source: 11th Long-Term Transmission and Substation Facility Plan, KEPCO

Table 2: Key new and ongoing transmission projects in South Korea

Infrastructure type	Category	No. of projects
345 kV substations	New construction	17
	Expansion	35
345 kV transmission lines	New construction	7
	Expansion	39
154 kV substations	New construction	69
	Expansion	218
154 kV transmission lines	New construction	23
	Expansion	149
HVDC systems	Expansion	12
Power quality systems (STATCOM/SVC grid stability equipment)	New installation	1
	Expansion	21
Various substations (special purpose facilities)	New installation	4
	Expansion	1

Source: 11th Long-Term Transmission and Substation Facility Plan, KEPCO

procedures, while dedicated working groups maintain ongoing dialogue with provincial and city officials.

Institutional and technological enhancements: The third pillar centres on system stability through institutional improvements, equipment modernisation and the integration of advanced technologies. With traditional thermal plants giving way to renewables and electronic systems, grid stability demands a new toolkit. KEPCO's Customer Participation Load Shedding System programme already secures 700 MW of flexible demand from major users, providing critical backup without new generation. Substations are being redesigned with more circuits and advanced breakers to limit outages. In renewable-heavy zones like Jeju and Honam, technologies like flywheel generators simulate the stabilising inertia of legacy systems. Meanwhile, integrated energy storage system-static synchronous compensator (ESS-STATCOM)

Table 3: Key upcoming transmission projects in South Korea (2024-36)

Project	Region	Voltage (kV)	Length (km)	Completion year
HVDC projects				
East Coast-Singapyeong HVDC project				
Donghae-an #1-Singapyeong line and associated converter stations	Yeongdong-Capital region	500 kV HVDC	230.0	2026
Donghae-an #2-Singapyeong line and associated converter stations			280.0	2027
Honam HVDC project				
Phase I: Saemangeum-Seo Hwaseong and associated converter stations	Honam-Metropolitan region	500 kV HVDC	220.0	2031
Phase II: Sin Haenam-Dangjin Thermal Power line and associated converter stations	Honam-Central region	500 kV HVDC	290.0	2036
Phase III: Sin Haenam-Seo Incheon Complex line and associated converter stations	Honam-Central region	500 kV HVDC	350.0	2038
Saemangeum-Yeongheung Thermal Power line and associated converter stations			210.0	2038
AC projects				
Sinpyeongchang branch –Sin Taebaek-Singapyeong line –Shin Gangwon #1, #2 substations	Yeongdong	765	2.0	2028
Dangjin Thermal Power Plant #2, #3, #4 substations	Central region	765	-	2028
Singeyryong-Sinjeongup line	Honam	345	114.7	2029
Sinkangji-Gwangyang line (capacity increase)	Honam	345	112.0	2030
Namseokkwon switching station-Singeyryong line	Honam	345	106.0	2030
Sinyeongju-Sinjungbu line	Yeongdong-Central region	345	123.0	2033
Saemangeum #2 switching station-Sinseosan line	Honam	345	121.6	2034
Seonsan-Sinchungju line	Yeongnam	345	152.0	2036
Gunsan-Bukcheonan line	Honam-Central region	345	115.2	2036

Note: 345 kV only includes projects with a line length addition of 100 km or more.
Source: 11th Long-Term Transmission and Substation Facility Plan, KEPCO; Global Transmission Report

units offer both reactive and active power—delivering a compact, cost-effective solution for modern grid performance.

Scale of expansion and project portfolio

By 2038, the transmission network will expand to 61,183 ckt km, representing the doubling of line length from 2024 levels. The number of substations will grow from 895 to 1,297, while total transformer capacity will increase by 54 per cent to 545,126 MVA. At the core of the plan is strengthening the 345 kV high-capacity backbone with 17 new substations and seven new transmission lines for moving large power volumes across long distances to integrate renewables and support advanced industries. Complementing this, the mid-voltage 154 kV system will expand with 69 substations and 23 lines, creating redundant pathways that enhance resilience and adaptability as variable renewables come online. Crucially, a dozen major long-distance HVDC expansion projects will redefine regional transmission, efficiently conveying vast renewable energy outputs. The projects include critical interconnections such as the East Coast-Singapyeong (involving both overhead and underground sections) and Saemangeum-Seo Hwaseong links. Additionally, the plan incorporates three Honam-Central region HVDC corridors to channel renewable energy from the southwestern coastal regions to major demand centres. Additionally, KEPCO plans to deploy advanced power-quality devices, including STATCOM/static var compensator (SVC) and ESS-STATCOM, to safeguard stability during fluctuations.

Conclusion

South Korea's 11th Transmission Plan balances ambitious capacity growth with pragmatic delivery strategies and advanced technologies. By integrating large-scale nuclear, wind and solar assets, serving strategic industry zones, and reinforcing system security through substantial investment and innovative approaches, KEPCO aims to ensure reliable and affordable power for all as it accelerates toward a net zero future and strives to maintain its competitive edge in global high-tech manufacturing. ◆

Kenya's Power Transformation (contd...)

Electricity consumption (or sales) is expected to rise from 10,488 GWh in 2023 to 34,239 GWh and 60,049 GWh by 2043 in the Reference and Vision scenarios, recording an average growth of 6.1 per cent and 9.1 per cent, respectively.

To meet increasing demand, the government targets generation capacity addition of around 9.7 GW by 2043 (compared to 3.5 GW installed as of June 2024), including a 1.5 GW addition by 2028. Geothermal capacity will contribute the most to the firm capacity over the planning period, and a significant contribution is also expected from battery energy storage systems (BESS) and pumped hydro storage for grid stability by 2043.

Notably, all diesel and gasoil power plants will be decommissioned by 2035. Renewable energy sources, nuclear power and imports will provide the required electricity generation mix by 2043, representing a complete transition to clean energy.

These targets cannot be achieved without commensurate investments in modernising and augmenting the national transmission and strengthening the regional interconnections in the Eastern African Power Pool (EAPP) and beyond. The state-owned transmission company, Kenya Electricity Transmission Company (KETRACO), has outlined significant investment plans across multiple strategic initiatives in its 2023-27 Strategic Plan (medium-term) as well as Transmission Master Plan (TMP) 2024-43 (long-term).

In the medium-term, the focus is on expanding the electricity transmission infrastructure, ensuring effective grid operation and maintenance, operationalising system operations and growing the organisation's capacity for sustainable growth. By 2043, KETRACO plans to add 8,958 km of lines and 15,261 MVA of transformation capacity, involving an investment of USD5,286 million. Of this amount, around USD305 million has been secured through development partners' assistance and the Kenyan government, leaving a huge financing gap of USD4,981 million. Kenya is considering alternative financing options such as public-private partnerships (PPPs) and asset monetisation, among other alternatives, to help finance the planned projects.

KETRACO has identified several transmission lines aggregating over 1,000 km to be developed via a PPP model. This includes two projects totalling 252 km proposed to be developed by pan-African investment firm Africa50 and India's state-owned Power Grid Corporation of India Limited (POWERGRID).

Despite the setback of the cancellation of a set of projects awarded to the Indian Adani Group, KETRACO remains positive and opened a new tender for consultancy services for the next set of PPP projects in April 2025.

It continues to depend on multilateral funding from various organisations such as the World Bank and African Development Bank (AfDB) for developing several other transmission projects in its TMP to support the country's green energy expansion.

Electricity sector restructuring

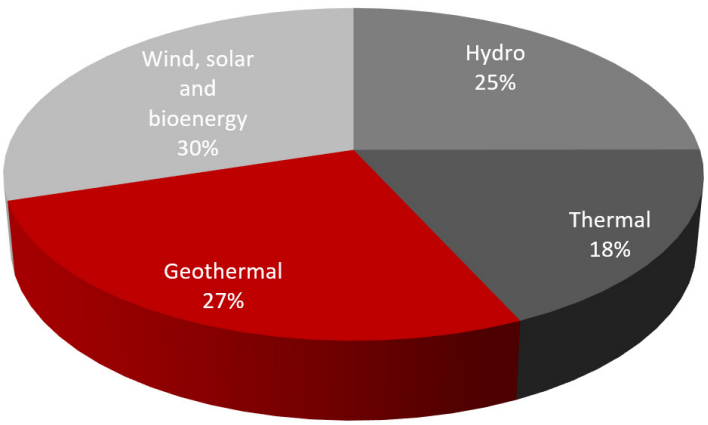
Kenya Power and Lighting Company PLC (Kenya Power), in which the government holds a 50.1 per cent stake, was originally responsible for both transmission and distribution. In 2008, KETRACO was established to develop and operate the national grid and facilitate regional power trade. In line with Section 138 of the Energy Act, 2019, KETRACO was designated as the system operator (SO), replacing Kenya Power, via Gazette Notice No. 155 in December 2021 by the Energy Petroleum Regulatory Authority (EPRA). KETRACO is now responsible for managing the National System Control Centre (NSCC), scheduling and dispatch, maintaining grid records, and coordinating cross-border interconnections.

Under the ongoing sector reform, the government's plan to transfer all transmission assets to KETRACO has been delayed to 2025, due to the pending appointment of a transaction adviser and the completion of asset valuations. Previously, in May 2023, Kenya Power announced its intention to sell transmission assets, including 220 kV transmission lines, 11 substations and related land, valued at KES20 billion, to KETRACO, with the government facilitating the deal by offsetting the amount against outstanding loans. Post-transfer, which was previously expected by December 2024, Kenya Power is expected to continue operating the assets for 10 years as KETRACO builds operational readiness. KETRACO was also expected to acquire assets worth KES5 billion from KenGen.

Current infrastructure

As of June 30, 2024, renewable energy sources (RES) (56.9 per cent) and hydropower (25 per cent) contributed to nearly 82 per cent of Kenya's interconnected installed capacity of 3,495 MW. The remaining 18 per cent was thermal-based. Within RES, geothermal capacity stood at 943.7 MW, accounting for 27 per cent of the total installed capacity.

Figure 1: Kenya's installed generation capacity (2024)



Total installed capacity = 3,495 MW

Note: Data is as of June 30, 2024
Source: Global Transmission Report

As of June 2024, the country's transmission infrastructure owned by KETRACO comprised 5,638 km of lines, 5,901 MVA of transformation capacity and 42 substations across 132-400 kV voltages. Some of the key projects completed in the past couple of years are the 132 kV Isinya (Kajiado)–Namanga line and associated substation, the 220 kV Turkwel–Ortum line and Ortum substation and the 220/66 kV Kimuka substation, which help stabilise power supply in Namanga and Ortum areas as well as in the capital region of Nairobi. Further, some of the completed projects are currently undergoing commissioning tests, including the 400/220 kV Mariakani substation, 220 kV Ortum–Kitale line, 132 kV Sultan–Hamud–Loitoktok line and associated substation, and 132 kV Awendo–Isebania (Masaba) line and associated substation.

Interconnections and cross-border trading

Notably, the energisation (in December 2024) of the 507 km, 400 kV Kenya–Tanzania Power Interconnection Project (KTPIP) (including 96 km in Kenya from the Isinya substation to the Namanga border) is facilitating 100 MW of power export from Ethiopia to Tanzania via Kenya from July 2025. This marks the region's first fully operational electricity wheeling arrangement under the EAPP. The electricity transfer, predominantly hydropower, is being implemented through a trilateral arrangement involving Ethiopia Electric Power, Tanzania Electric Supply Company and KETRACO, with Kenya Power facilitating distribution. The initial import of 100 MW to Tanzania is expected to double by 2027. KETRACO is set to earn approximately KES800 million annually in wheeling charges from the transit of electricity.

The latest import was facilitated with support from the 1,045 km, ±500 kV Ethiopia–Kenya high voltage direct current (HVDC) line and the Suswa converter station, commissioned in 2022, enabling onward transmission from Ethiopia to Kenya and into Tanzania. In fact, this interconnection strategically designs Kenya's transmission network to accommodate up to 2 GW of cross-border transfers with Ethiopia and Tanzania, supporting future regional power distribution as market rules are finalised.

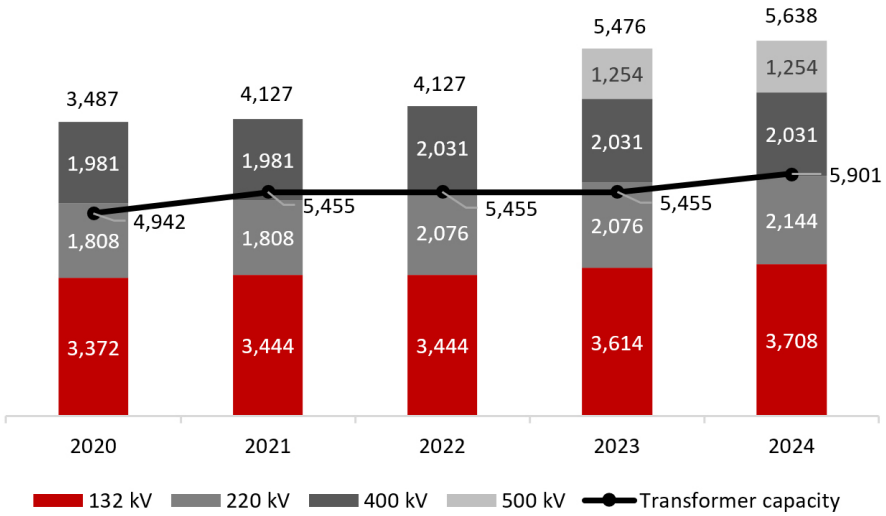
Kenya's transmission grid is also interconnected with that of Uganda through two interconnections: a 132 kV line operational since 1955, connecting Musaga, Lessos, Lanet and Nairobi to Uganda's Owen Falls hydropower station through Tororo; and a 400 kV, 130-km-long Lessos–Tororo line, commissioned in 2021, connecting to the Bujagali hydropower station. The latter has raised Kenya's power transfer capacity with Uganda to 350 MW and is also part of the Nile Equatorial Lakes Subsidiary Action Program (NELSAP), which aims to link the grids of Kenya, Uganda, Rwanda, Burundi and the Democratic Republic of Congo.

Future plans

KETRACO has an ambitious plan to augment its transmission infrastructure by around 50 per cent by 2027. It aims to construct an additional 2,574 ckt km of transmission lines and 3,565 MVA of transformation capacity by 2027. The additions are expected to increase to 8,958 km and 15,261 MVA, involving an investment of USD5,286 million by 2043. As already mentioned, since its inception, KETRACO has been developing projects with multilateral funding support tapped by the National Treasury, which subsequently on-granted these funds to KETRACO for project development. The project circle turnaround time for the development financing partners and KETRACO has been about five to eight years, with the next set of funding estimated to be after fiscal year 2028-29.

Some of the ongoing projects for which funding has been secured include the 220 kV Mariakani–Dongo Kundu project, 132 kV Narok–Bomet project, Malindi–Weru–Kilifi project, Kabarnet–Rumuruti project, Loiyangalani–Marsabit and Marsabit–Isiolo lines, synchronous compensators (STATCOMs) at the Rabai and Suswa substations, 400 kV substations at Kimuka and Makindu (digital), and the NSCC. Many of these are also part of the BETA projects, including the 61 km, 132 kV Rabai–Bamburi–Kilifi line. Several projects made progress with the award of construction contracts, including the Narok–Bomet line (Chinese North China

Figure 2: Kenya's transmission network and transformation capacity



Note: All figures are as of June 30 of the respective year; Transmission network figures are in ckt km and transformer capacity in MVA
Sources: KETRACO; Global Transmission Report

Power Engineering Company Limited); the 132 kV Sondu–Ndhiwa line (UAE-based Elemec Engineering); and the 400/132 kV Makindu digital substation (German-Nigerian joint venture of Decon and Colenco).

Notably, the KES12 billion ultra-modern NSCC in Embakasi, Nairobi, is being developed with support of a EUR48.6 million concessional sovereign loan from the French Development Agency (AFD) and a EUR34.1 million concessional loan from the French Treasury. The 36-month construction contract has been awarded to a consortium of GE Vernova and Larsen & Toubro (L&T). The main control centre at Embakasi and the emergency control centre at Suswa will both be equipped with cutting-edge supervisory control and data acquisition systems, energy management systems and enterprise asset management systems. Once completed in 2028, the NSCC will provide real-time grid monitoring, automated dispatch control and full integration with substation outstations across the country. It will enable KETRACO to coordinate and facilitate power exchange and trade through the national grid and the regional power interconnectors.

The project is part of AFD's wider EUR94 million Reinforcement of Electricity Transmission Network (RETNET) programme, which also covers the Makindu digital substation and Nairobi Ring upgrades. This initiative reinforces Kenya's strategic transition towards a smart, sustainable and regionally integrated grid. It also includes a **EUR**7 million grant from the European Union (EU), delegated to AFD, for capacity building in grid management, which will support KETRACO's skill development efforts.

Private participation: Opportunities and challenges

The Kenyan government is actively promoting private sector participation in the electricity transmission as an alternative financing route. The first of these is being developed by Africa50, in collaboration with its technical partner POWERGRID, under the PPP Act of 2021. The developer is responsible for developing, structuring, financing and implementing two lines – the 220 kV Kisumu–Kakamega–Musaga line and the 400 kV Lessos–Loosuk line – involving an investment of USD273 million by 2027. KETRACO is designated as the contracting authority for the projects.

Table 1: KETRACO's planned transmission projects in Kenya

Project	Voltage (kV)	Line length (km)	Estimated cost (USD million)	Expected year of completion
Narok–Bomet transmission line	132	88	34.62	2025
Transmission system improvement projects for electricity access				
– Lessos–Kabarnet S/C line (65 km)				
– Nanyuki–Rumuruti S/C line (79 km)	132	210	160.55	2025
– Kitui–Wote S/C line (66 km)				
– Substations at Kabarnet, Kitui, Wote and Rumuruti				
Lessos–Tororo transmission line	400	132	161.83	2025
Weru–Kilifi transmission line	220	49	52.89	2026
Malindi–Weru (circuit II) transmission line	220	22	27.13	2026
Sondu–Homabay–Ndhiwa–Awendo transmission line	132	106	5.37	2026
Rumuruti–Kabarnet transmission line	132	111	31.68	2026
Mariakani–Dongo Kundu transmission line	220	55	53.03	2027
Sotik–Kilgoris transmission line	132	50	22.00	2027
Garsen–Bura–Hola Garissa transmission line	220	240	94.99	2027
Loiyangalani–Marsabit transmission line	220	136	126.81	2028
Turkwel–Lokichar–Lodwar transmission line	220	120	100.00	2029
Garissa–Habaswein/Dadaab–Wajir transmission line	220	330	188.32	2030
Isiolo–Garba Tula–Garissa 2 transmission line	220	320	160.43	2030
Wajir–Mandera transmission line	220	250	161.10	2031
Marsabit–Moyale transmission line	220	180	119.94	2032
Menengai–Rongai transmission line	400	45	76.08	2033
New Thika–Ruaraka UGC cables lines	220	27	81.06	2035
Mariakani–Dongo Kundu transmission line	400	60	86.16	2038
Rongai–Kilgoris (part of Lake Victoria Ring) transmission line	400	235	219.00	2041
Ngong (Kimuka)–Magadi transmission line	220	88	60.10	2041

Note: LILO: line-in line-out

Sources: KETRACO; Ministry of Energy and Petroleum; Global Transmission Report

Table 2: Proposed transmission PPP projects in Kenya

Project	Voltage (kV)	Line length (km)	Estimated cost (USD million)	Expected completion date
Projects under construction by Africa50 and POWERGRID				
Kisumu–Kakamega–Musaga transmission line	220	73	71.17	2027
Lessos–Loosuk transmission line	400	179	202.00	2027
Other PPP projects yet to be awarded				
Package for which the consultancy tender is ongoing				
Kipevu–Mbaraki D/C transmission line	132	7	14.4	2026
Kwale–Shimoni (Kibuyuni) D/C LILO (off 220 kV Dongo Kundu–Mariakani at Bang'a) and the establishment of a new 220 kV switching station at Bang'a, new 220/132/33 kV at Shimoni (Kibuyuni) 132 kV intertie to the existing 132 kV system	220	77	84.9	2027
Meru–Maua D/C transmission line, including new 132/33 kV Maua substation and 132 kV bay extension at Meru			26.63	2028
Kiambere–Maua–Isiolo transmission line	220	145	120.00	2029
Other projects under consideration for PPP				
Rongai–Keringet–Chemosit transmission line	220	96	100.00	2028
Gilgil–Thika–Malaa–Konza transmission line	400	206	262.59	2028
Menengai–Olkalou–Rumuruti transmission line	132	70	34.34	2028
Githambo–Othaya–Kiganjo transmission line	132	72	34.90	2030
Kilifi Teeoff–Mtwapa transmission line	132	7	-	-
Mutomo–Makindu transmission line	132	69		
Kiambere–Rabai LILO and new 220/132/33kV substation Mutomo substation	220	2	36.86	2029

Note: LILO – line-in line-out

Source: KETRACO; Global Transmission Report

In April 2025, KETRACO invited bids for transaction advisory services for the construction of four 132 and 220 transmission lines and substations worth USD371.58 million under the PPP model. These include:

- 220 kV Kwale–Shimoni (Kibuyuni) double-circuit (D/C) line-in line-out (LILO) off 220 kV Dongo Kundu–Mariakani at Bang'a, including the establishment of a new 220 kV switching station at Bang'a, a new 220/132/33 kV at Shimoni (Kibuyuni) and a 132 kV intertie to the existing 132 kV system in the area.
- 132 kV Kipevu–Mbarak D/C line, including the new 132/33 kV Mbaraki substation and a 132 kV bay extension at Kipevu.
- 220 kV Kiambere–Maua–Isiolo D/C line, including the new 220/132/33 Maua substation, 220 kV bay extensions at Isiolo and Kiambere substations.
- 132 kV Meru–Maua D/C line, including the new 132/33kV Maua substation and 132 kV bay extension at Meru.

This announcement, however, came six months after the cancellation of KETRACO's USD736 million, 30-year PPP deal with India-based Adani Group, signed in October 2024 for the construction of several high capacity lines, including the 400 kV Gilgil–Thika–Malaa–Konza line, the 220 kV Rongai–Keringet–Chemosit line and the 132 kV Menengai–Ol Kalou–Rumuruti line, as well as several new substations at strategic locations, to enhance regional power distribution. The deal was cancelled due to accusations of corruption against the CEO of the Adani Group and other individuals in the US, related to green energy initiatives in India. While Kenya's energy ministry previously denied any misconduct in the award of the contract, the agreement began to come under scrutiny and opposition from different sources.

Notwithstanding this setback, in early 2025, KETRACO announced plans to implement 14 transmission projects under the PPPs from its TMP 2024-43. Some of the projects that have been considered under PPP financing are the Githambo–Othaya–Kiganjo and Mutomo–Makindu transmission lines.

Conclusion

Kenya's transmission sector is set for substantial expansion, driven by the country's Vision 2030 and LCPDP 2024-43 targets to support a fully renewable generation mix and growing demand. KETRACO plans to upgrade and expand its transmission infrastructure capacity by 2043, backed by significant multilateral funding and private sector participation through PPPs. Strategic cross-border interconnections with its neighbours will enhance regional power trade under the EAPP framework. These developments could help Kenya achieve its national economic growth targets and position it as a key hub for clean energy transmission and regional electricity exchange in East Africa.◆

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Congress passes 'Big, Beautiful Bill,' to negatively impact clean energy sector

Congress passed the US president's 'One Big, Beautiful Bill' on July 3, 2025, with a 218-214 vote, to send the Bill to the president for signature, which was completed during a ceremony on July 4, 2025.

The legislation, which dilutes much of the 2022 Inflation Reduction Act (IRA), is expected to have a negative effect on the development of clean energy, increasing utility costs and worsening climate change. Opponents such as the Natural Resources Defense Council president stated that this move would hinder the plentiful wind and solar power that could be quickly added to the grid, at a time when new energy is required more than ever.

The development comes after the Bill barely cleared the Senate on July 1. The final vote was split 50-50, with the vice president casting the tie-breaking vote in favour of the Bill.

Notably missing from the final Bill is an excise tax on wind and solar development that was in the Senate version last week. The tax would have affected wind and solar projects that used components from China and other countries, which would have impacted clean power development and the US economy as a whole.

The final legislation will still require solar and wind projects to start service by 2027 to access 45Y or 48E production and investment tax credits. However, if they begin construction within a year of the Bill's signing, they will have longer to use the incentives. That said, projects that start construction after this calendar year face burdensome "foreign entity of concern" provisions that tax experts have said are unworkable, amounting to an effective repeal of the incentives not only for solar and wind, but for technologies like storage and geothermal, too.

The Bill's other energy-related provisions are summarised below:

- Efficiency: Tax credits for energy-efficient home improvements would only be available to projects that are finished before the end of 2025. To access energy-efficient home and commercial building incentives, developers would have to start construction by June 30, 2026.
- Electric vehicles (EVs): Tax credits for new or used clean-vehicle purchases, as well as clean commercial vehicle purchases, would end after September 30, 2025. Tax credits for installing charging stations at a home or business would expire on June 30, 2026.
- Nuclear, hydropower, and geothermal: These sources will be eligible for incentives if they commence construction by 2033.
- Hydrogen: 45V clean-hydrogen tax credits will expire on January 1, 2028.
- Transferability: Tax credit transferability, an IRA provision that allows clean-energy project and factory developers to sell their tax credits directly to other companies, was left untouched in the final Bill.

The Bill also repeals unobligated IRA funding for a whole slew of offices and programmes, including:

- The Loan Programs Office
- The Greenhouse Gas Reduction Fund, which helped fund local emissions-reducing projects
- Decarbonising federal buildings
- Using low-carbon materials in new transportation infrastructure construction
- Grants for states, municipalities, and tribes to make and implement emissions-reduction plans
- A programme to help gas and petroleum companies reduce waste and methane emissions
- Transmission development, including for offshore wind projects
- Tribal energy loans
- A low-emissions electricity programme to help states, tribes, and municipalities lower electricity use and emissions
- Clean heavy-duty vehicles

The Bill also modifies the original USD5 billion Energy Infrastructure Reinvestment programme to remove a requirement that projects receiving loans "avoid, reduce, utilise, or sequester" emissions. Instead, it will prioritise "known or forecastable electric supply" – basically implying fossil fuels. The Bill also adds another USD1 billion to this programme.

US DOE publishes methodology for assessing grid reliability

The US Department of Energy (DOE) published a methodology for assessing grid reliability on July 7, 2025, in which it reported that power outage hours could increase from single digits today "to more than 800 hours per year". Blackouts could increase by 100 times in 2030, relative to today's averages, if the US continues to shut down power plants and fails to add additional firm capacity amid rising demand. Such a surge would leave millions of households and businesses vulnerable, and requires a renewed focus on firm generation and a continued reversal of radical green ideology in order to address this risk, the report says.

DOE's report assumes 104 GW of plant retirements by 2030, alongside the addition of 210 GW of new generation — but only 22 GW of the additions will be firm, reliable, dispatchable generation. Average loss of load hours could jump from 8.1 hours annually to 817.7 hours under some scenarios. It estimated an additional 100 GW of new peak capacity is needed by 2030 — of which 50 GW is attributable to data centres that can be built in 18 months. But it takes more than three times as long to add new generation required to service those data centres, as per DOE. Even assuming no retirements, DOE said its model found outage risks in several regions rise more than 30-fold, proving the queue alone cannot close the dependable-capacity deficit.

Supporters such as the US energy secretary, and America's Power, which represents the coal sector, affirmed that the US cannot afford to close baseload power sources like coal and natural gas, as it would put the reliability of the US electricity grid at risk. Renewables such as wind and solar are not capable of meeting the constant 24/7 electricity demands required for artificial intelligence (AI), data centres, and other advanced technologies.

The uniform methodology in the report, which was required by the president's April 2025 executive order that directed

the former to respond to the energy emergency declared in January 2025, identified regions at risk of power outages and guided federal reliability interventions. The methodology will be used to identify which generation resources within a region are critical to system reliability, by using hourly datasets for load, generation and interregional transfer capabilities for the 23 US electric subregions. DOE said it developed its outage risk estimates by running simulations using 12 different years of historical weather, with every hour based on actual data for wind, solar, load, and thermal availability.

But clean energy advocates say the report appears to exaggerate the risks, and undercount the contributions of wind, solar, and battery storage resources. If the analysis is overly pessimistic about advanced energy technologies and the future of the grid, consumers will end up paying higher rates for resources that are no longer required, asserted Advanced Energy United (AEU) – a national industry association representing advanced energy and transportation business, and advocating for public policies. It also felt the report should have been subject to public input and scrutiny, especially since the president's executive order that mandated it calls for it to be used to identify power plants that should be retained for reliability.

In May 2025, DOE issued an emergency order under Section 202(c) of the Federal Power Act, directing Consumers Energy—an investor-owned utility that provides natural gas and electricity in Michigan—to delay, by about three months, shutting down a 1,560 MW, coal-fired power plant in the state. Earthjustice and other groups have asked the agency for a rehearing, and said they may go to the courts to challenge the order, as per a June 18, 2025 media announcement.

US DOE cancels USD4.9 billion conditional loan commitment for Grain Belt Express

The DOE on July 23, 2025, announced that it has terminated its USD4.9 billion conditional loan commitment for the 800-mile (1,287-km) Grain Belt Express (GBX) Phase 1 transmission project. After a thorough review of the project's financials, DOE found that "the conditions necessary to issue the guarantee are unlikely to be met and it is not critical for the federal government to have a role in supporting this project". DOE also confirmed that the reason for the termination is "to ensure more responsible stewardship of taxpayer resources".

Other opponents have argued that the Midcontinent Independent System Operator (MISO) transmission plans and business case analyses are "in favour of over-building transmission", implying that the GBX project may not be required.

Chicago-based Invenergy plans to build the 5 GW GBX project in phases from Kansas to Illinois. In May 2025, the company made almost USD1.7 billion in contractor awards to engineering and infrastructure services companies – Quanta Services and Kiewit Energy Group.

Invenergy aims to begin construction in 2026 on the portion of the project connecting Kansas and Missouri. It estimates the project will provide USD52 billion in energy cost savings to residents over 15 years.

US AI action plan calls for dispatchable resources and grid upgrades

The White House published an AI action plan for the US in late July 2025, that calls for cutting regulations, and the construction of more data centres and energy assets to power them. The plan says the US must prevent the "premature decommissioning" of critical power generation resources and "explore innovative ways to harness existing capacity, such as leveraging extant backup power sources to bolster grid reliability during peak demand".

The document is in line with previous actions by the US administration to delay the shuttering of coal plants, and promote the use of fossil fuels and nuclear energy by declaring a national energy emergency. It calls for the prioritisation of reliable, dispatchable power sources and new technology, specifically emphasising geothermal energy, nuclear fission, and nuclear fusion.

But the plan also acknowledges the need to maximise existing resources through enhanced efficiency and transmission, and to possibly limiting data centres' power consumption during critical grid periods.

FERC, DOE, other federal agencies revoke environmental review rules

The Federal Energy Regulatory Commission (FERC) and other federal agencies, including the Department of Agriculture, DOE, Department of Interior, and the Department of Transportation, on June 30, 2025 revoked regulations governing their handling of environmental reviews of proposed projects under the National Environmental Policy Act (NEPA).

Some agencies proposed new regulations to replace the old ones, while others replaced the rules with nonbinding guidance, according to Earthjustice – an environmental advocacy group. In all cases, the regulations significantly weaken the implementation of the statute by cutting the public out of NEPA reviews and eliminating all references to consider climate change, environmental justice, and other crucial environmental issues.

The action was in response to an executive order issued by the US president in January 2025, which aimed to spur energy development, including by rescinding the Council on Environmental Quality's (CEQ) NEPA regulations. It also follows a unanimous Supreme Court decision in May 2025 limiting the scope of such environmental reviews.

CEQ—the White House office that oversees NEPA implementation—removed its NEPA regulations from the Code of Federal Regulations through an interim final rule, effective April 11, 2025.

On June 30, 2025, FERC issued a 20-page staff manual outlining its revised procedures for its environmental reviews for natural gas pipelines and other projects. The change enjoyed unanimous support from FERC's four sitting commissioners — evenly divided between Republicans and Democrats, with the chairman ensuring that environmental reviews will continue to be legally durable so projects can get built.

Environmental reviews can take years to complete. It took DOE a median time of 2.2 years to complete environmental impact statements (EIS) over a three-year period starting in 2021, down from 3.8 years from 2017 to 2021, according to a NEPA regulatory impact analysis of the DOE's issuance of an interim final rule changing its NEPA requirements. DOE finished 60

per cent of its EIS reviews in under two years in 2024, compared to 37 per cent from 2021 to 2024.

FERC confirms addition of 101 km of transmission lines during January-April 2025

US utilities and power plant developers added about 12 GW of new generation resources between January and April of 2025, compared to 11 GW over the same period last year, according to the latest monthly infrastructure report from FERC. The vast majority of that generation — some 9.5 GW — was solar, trailed by wind with 2 GW, and 500 MW of gas.

High-probability additions by April 2028 include 90 GW of solar, 23 GW of wind, and 19.5 GW of gas, according to the report. It also projected the likely addition of 631 MW of hydropower and 92 MW of geothermal steam.

The report showed the continued dominance of solar in new generation capacity amid robust demand growth projections. That could change, however, as the law signed by the US president on July 4, 2025, dramatically cut incentives for wind and solar, phasing out tax credits and imposing restrictions on the types of projects that qualify. This was followed by an executive order instructing the Treasury Department to take a narrow approach in its interpretation of the law regarding wind and solar.

On the transmission front, as per FERC's report, the US added 62.5 miles (101 km) of transmission lines from January to April 2025 – 10.9 miles (18 km) of less than or equal to 230 kV lines, 49.8 miles (80 km) of 345 kV lines, and most recently, Entergy Louisiana's 1.8-mile (3-km), 500 kV Wise-Bayou Labutte transmission project. – part of the Amite South Reliability Project. The new 500 kV, 80-mile (129-km) transmission line was constructed between Bayou Labutte and Churchill, and is part of Entergy's long-term transmission plan. The project also involved upgrades at both the Bayou Labutte and Churchill substations, including adding breakers and other equipment.

The FERC report did not include a breakdown of transmission built over the same period last year. In total, grid operators added nearly 1,700 miles (2,736 km) of transmission in 2024, about a third of it (554 miles or 892 km) being 500 kV.

The proposed transmission projects in-service by September 2027, with a high probability of completion include a total of 2,356.7 miles (3,792.7 km) divided between 1,212.6 miles (1,951 km) of less than or equal to 230 kV lines, 999.1 miles (1,608 km) of 345 kV lines, and 145 miles (233 km) of 500 kV lines.

FERC's report follows a separate analysis from the US Energy Information Administration (EIA), which estimated that by the summer of 2026, solar generation would grow by another 19 per cent to 147 billion kWh. While the curtailment of clean energy tax credits is expected to slow solar deployment, alternatives like gas, which are favoured by the current administration, face their own challenges, including high fuel prices and a year-long backlog for new gas turbines.

The FERC report also projected 24 GW of coal retirements and 14 GW of gas retirements through 2028.

FERC rejects MISO, SPP plan to broaden scope of interregional transmission planning

FERC on July 2, 2025, rejected a waiver request from the MISO and the Southwest Power Pool (SPP) that would have allowed the grid operators to expand the scope of their 2024-25 interregional transmission study process.

The waiver would have let MISO and SPP incorporate multiple scenarios into a single 10-year model rather than the multi-year analysis required by their joint operating agreement, FERC said. They would also have been able to use multiple metrics to peg the reliability and public policy value of interregional transmission projects instead of the "cost avoidance of pre-existing regional projects" metric required by the agreement.

Under the MISO-SPP joint operating agreement, at least every two years the grid operators are required to conduct a Coordinated System Plan (CSP) study to find cross-border transmission projects that would benefit them both. The study process has never identified an interregional project that would benefit both MISO and SPP because of the limited benefit valuations that are outlined in the agreement, according to their January 15, 2025 waiver request. As a result, MISO and SPP proposed to their stakeholders a one-time plan to expand the CSP study scope to identify near-term upgrades that enhance transfer capability and yield multiple benefits across their footprints. The proposal would provide a more comprehensive look at their system needs.

However, FERC said the request failed to meet its criteria for approving waivers from FERC-approved rules, such as that a waiver be limited in scope. FERC said the requested waiver was not limited because it would "broadly alter" the scope of the CSP study by no longer evaluating the reliability and public policy benefits of interregional transmission projects as the avoided cost of regional transmission projects that address the same reliability or public policy issue.

Also, the waiver request did not address a concrete problem — one of FERC's criteria for approving requested waivers — because MISO and SPP did not show that expanding the study scope would lead to new transmission.

One FERC commissioner who dissented in the 2-1 decision, felt the waiver would have allowed MISO and SPP to better tailor the CSP study to their regional needs. By rejecting the waiver request, MISO and SPP will have to commit resources towards an inefficient study that prevents them from identifying necessary interregional transmission projects.

International Transmission Company and the American Council on Renewable Energy supported the MISO-SPP waiver request, though FERC claimed that perhaps the latter should have asked for permission to change the CSP rules instead.

FERC rejects MISO petition to limit market monitor's transmission planning oversight

FERC on July 18, 2025, rejected calls by the MISO and its transmission owners that the grid operator's independent market monitor (IMM) be effectively barred from transmission planning oversight.

The MISO tariff authorises the IMM to review and analyse MISO's transmission planning activities, and emphasises that

the market monitor should consider the competitive or other market impacts of any MISO action governing or affecting any of the markets and services, said FERC.

MISO filed a petition for declaratory order on May 7, 2025, asking FERC to find that the grid operator's tariff limits the IMM's involvement in transmission planning. The petition grew out of Potomac Economics'—which currently serves as the IMM for the MISO, New York ISO, ISO New England, and Electric Reliability Council for Texas (ERCOT)—criticism of MISO's needs and cost-benefit analysis that underpinned its roughly USD22 billion Tranche 2.1 transmission portfolio that was approved in December 2024, according to filings at FERC. The market monitor argued that MISO overstated its transmission needs and the benefits from its proposed project portfolio.

MISO transmission owners such as Ameren, Duke Energy and Entergy supported limiting Potomac Economics' role in transmission planning. The petition was opposed by the Organization of MISO States, which represents state utility commissions, and consumer advocates.

The dispute arose as electric utility bills have surged in the last four years, with millions of people struggling to pay their bills. Despite the understandable concern and publicity over capacity market auction results in MISO and the PJM Interconnection over the past year, transmission costs are the single biggest driver of skyrocketing monthly power bills and have been for years, the FERC chairman noted. Also, once financing costs and FERC's extra financial benefits for transmission have been added to MISO's Tranche 2.1 transmission portfolio, it will cost significantly more than its estimated USD21.8 billion in capital costs.

MISO's IMM has provided a critique of the assumptions and calculations used by MISO to develop and attempt to justify this latest costly tranche of transmission projects.

In another concurrence, an FERC commissioner said the market monitor's oversight should remain limited to assessing the results of MISO's transmission planning. The denial of MISO's petition is not a basis to create new duties for the market monitor that are akin to those of an independent transmission monitor.

It was also noted that FERC was unable to reach a consensus on requiring independent transmission monitors in its Order 1920 rulemaking on long-term regional transmission planning, which was finalised in November 2024.

FERC orders changes to PJM's grid interconnection process

FERC on July 24, 2025, ordered the PJM Interconnection to make changes to its process for studying requests by generating developers to connect to the grid.

The issue centres on FERC's Order 2023, which set baseline requirements for grid interconnection rules. It requires a "first-ready, first-served" cluster study approach and made other reforms intended to cut down the interconnection backlog. The rule also set deadlines for regional transmission organisations (RTOs) and other transmission providers to complete interconnection studies, and imposed penalties for missing those deadlines.

PJM had said that its existing interconnection process, which FERC approved in November 2022, met the requirements of Order 2023. But in its latest decision, FERC said that while parts of PJM's process does comply with Order 2023, the grid operator must revise others.

FERC gave PJM 60 days to propose changes to its interconnection rules. Some of them include:

- Describing how network and substation upgrade study costs will be allocated;
- Explaining how network system upgrade costs will be shared;
- Requiring transmission owners to use operating assumptions in their interconnection studies that reflect the planned charging behaviour of battery storage projects; and,
- Requiring that interconnection studies include an evaluation of grid-enhancing technologies (GETs).

FERC's order comes amid a spike in PJM's capacity costs, which reflect tight supply and demand conditions in its footprint in 13 Mid-Atlantic and Midwest states, and the District of Columbia.

One of the first steps in building new power supplies is successfully passing through a grid operator's interconnection process. PJM has paused its review of new interconnection requests as it works through a backlog of interconnection requests. The grid operator expects to begin using its reformed process to start evaluating new requests in 2026. PJM has approved about 46 GW of interconnection requests for generating projects that have yet to be built, and expects to finish reviewing an additional 63,000 MW of interconnection requests through 2026.

Meanwhile, as part of the FERC open meeting, the federal regulator approved two North American Electric Reliability Corporation (NERC) reliability standards that require inverter-based resources (IBRs) — wind, solar and battery systems — to ride through frequency and voltage excursions like faults on the transmission system, instead of tripping offline. The final rule, issued on July 24, 2025, largely adopted a proposal FERC issued in December 2024. FERC directed NERC to review concerns raised by some stakeholders about the rules' exemption provisions and potentially propose changes to them. Some stakeholders contend that without the changes, existing IBR projects may be forced into early retirement, while projects that are under construction may be cancelled before reaching operation.

FERC urged to reject addition of PacifiCorp's USD1.7 billion wildfire liabilities to transmission rates

Three Utah-based power providers — Deseret Generation & Transmission Co-operative, Utah Associated Municipal Power Systems (UAMPS), and Utah Municipal Power Agency (UMPA) — filed a complaint with FERC on July 2, 2025, that challenges PacifiCorp's plan to include about USD1.7 billion in potential wildfire-related liability in its transmission rates.

According to the complaint, the wildfires occurred in 2020 and 2022, and PacifiCorp—a Berkshire Hathaway Energy utility—has not paid the USD1.7 billion in estimated liability, but is seeking to recover it from wholesale transmission customers by passing them through its formula rate in one rate year.

The power providers feel FERC should not assume that the wildfire liabilities were prudently incurred and should launch a separate proceeding to review them.

PacifiCorp's effort to shift these massive liabilities from shareholders to ratepayers, without a finding that the utility acted prudently, is not an appropriate use of a formula rate, particularly when juries have already determined that PacifiCorp acted with gross negligence on the vast majority of claims that have been paid out.

Allowing PacifiCorp to make wholesale transmission customers prepay potential liability violates the Federal Power Act, FERC precedent, and accounting rules, according to the power providers, even if the costs had been prudently incurred.

Also, it appears that PacifiCorp has not sought to recoup its potential liabilities from retail customers; thus it is allegedly treating wholesale transmission customers and retail customers differently with respect to wildfire liability claims. If wholesale transmission customers are the only customer group paying, then PacifiCorp has an incentive to overestimate its wildfire liabilities to pass through the formula rate because it is a guaranteed source of recovery.

Further, PacifiCorp's wholesale transmission customers face additional exposure to its wildfire liabilities. About USD8 billion in wildfire-related claims have been made in Oregon and California, the power providers said, citing a 2023 annual report at the US Securities and Exchange Commission filed by Berkshire Hathaway Energy.

The company's recent annual report filed in February 2025 indicates that PacifiCorp faced an additional USD48 billion in wildfire-related claims by the end of 2024. The utility apparently intends to true up its accounting for the wildfire liabilities when they are resolved, but it is unclear when that will occur, according to the Deseret–UAMPS–UMPA complaint.

Stakeholder comments on the complaint are due by August 1, 2025 at FERC.

ALJ calls for Minnesota PUC to reject USD6.2 billion Allete private equity deal

An administrative law judge (ALJ) on July 15, 2025, said the Minnesota Public Utilities Commission (PUC) should reject the plan by the Canada Pension Plan Investment Board and Blackrock's Global Infrastructure Partners to buy Allete – parent company of Minnesota Power, and Superior Water, Light and Power. Besides its utility subsidiaries, Allete owns Allete Clean Energy (a renewable energy company), BNI Energy (a coal company), and New Energy Equity (a solar developer). It also has an 8 per cent stake in American Transmission Company.

The USD6.2 billion deal under which the two companies would buy Allete – a Duluth, Minnesota-based utility company, poses foreseeable risks to Minnesota's energy transition, Allete's long-term financial health, and ratepayers, the ALJ noted in a recommended decision filed with the PUC.

Allete strongly disagreed with the non-binding recommendation, saying it failed to fully consider the benefits of a July 11, 2025 settlement agreement with the Minnesota Department of Commerce. The proposed Allete transaction, announced in May 2024, had cleared all required regulatory hurdles, except for approval by the Minnesota PUC.

However, entities opposing the deal—the Minnesota Office of the Attorney General, a consortium of Minnesota Power's large industrial customers, the Citizens Utility Board of Minnesota, the Sierra Club, and CURE, an advocacy group—reiterate that it does not meet Minnesota's public interest standard. Allete and its buyers allegedly failed to adequately support key arguments for completing the deal, such as improving the utility company's access to capital and expertise. Also, access to CPP Investments' and GIP's expertise appears to have limited value because of assurances that they intend to keep Allete's existing management, staff, and business plan.

Further, the private equity model offered by CPP Investments and GIP is not in the public interest, as per the experience of Upper Peninsula Power Company (UPPCO), a utility in Michigan with similarities to Minnesota Power that was bought by private equity firms in 2014 and 2021. After a series of post-transaction rate increases, UPPCO's rates were 9 cents/kWh higher than the average rate for other investor-owned utilities in Michigan at the end of 2024.

The ALJ also cited FERC chairman warnings that asset managers such as Blackrock could hurt ratepayers by trying to maximise profits from the utilities they buy.

CPP Investments and GIP expect to earn a return by buying Allete that "significantly exceeds" the returns produced by publicly traded utilities, with petitioners most likely to make up the difference between a plausible regulated return and the targeted return through financial engineering. After the deal was announced, S&P Global Ratings lowered Allete's outlook to "negative" from "stable" over concerns the transaction could lead to higher leverage and weaker financial measures at the company.

Under private owners, Allete will no longer be required to make financial filings at the US Securities and Exchange Commission, which could significantly reduce information available to the Minnesota PUC and ratepayers about the company.

Despite the ALJ recommended decision, Allete expects the Minnesota PUC will approve the transaction in 2025, noting it is supported by the Minnesota Chamber of Commerce, the International Brotherhood of Electrical Workers Local 31, the Laborers' International Union of Minnesota & North Dakota, and other organisations.

Under the agreement with the Minnesota Department of Commerce, Minnesota Power would freeze its base rates for a year and reduce its return on equity from 9.78 per cent to 9.65 per cent until a future rate case, providing immediate ratepayer benefits, according to Allete. Also, CPP Investments and GIP agreed to fund Allete's five-year capital plan, ensuring that the company will have access to the capital needed to advance its transmission and renewable energy goals.

New York halts OSW transmission plan as per presidential order

The New York State Public Service Commission (PSC) has terminated the state's offshore wind (OSW) transmission planning process, a decision it says will protect ratepayers from premature infrastructure costs.

The move was undertaken due to the significant federal uncertainty and reflects the new administration's temporary halt on new OSW permitting. This will result in

'recalibrating the timeline' for the ongoing Public Policy Transmission Need (PPTN) process that aims to select proposals to deliver infrastructure for up to 8 GW of OSW power to York City by 2033. The PPTN process was initiated in 2023 in an effort to secure between 4.8 GW and 8 GW of OSW energy for New York. The New York Independent System Operator (NYISO), the operator of the state's electric grid, launched a solicitation for the NYC PPTN Transmission Project(s) in April 2024, and has been evaluating proposals since then.

The PSC has directed its staff to incorporate lessons from the PPTN process into future Clean Energy Standard (CES) solicitation practices. Several approaches will be undertaken to address project development risks, promote cost-effective solutions, and maximise reliability and affordability benefits to the state's ratepayers, it said.

The PSC also confirmed it would continue to press forward regarding infrastructure needs for OSW in the future once the federal government resumed leasing and permitting for wind energy generation projects.

The PSC's recent decision does not affect previously permitted OSW generation projects in New York, which now has one operational offshore wind farm (OWF) – the 132 MW South Fork. Two more parks are under construction – Equinor's 816 MW Empire Wind, and the 924 MW Sunrise Wind by Denmark's Ørsted.

US electric companies projected to invest more than USD1.1 trillion over next five years

The Edison Electric Institute (EEI) released its annual Financial Review, which shows that America's investor-owned electric companies are outpacing all other capital-intensive industries, as they work to provide the investment and infrastructure required to drive innovation, connect data centres, and create well-paid jobs across the country.

Among the report's key findings, EEI's member companies:

- Invested a record USD178.2 billion in 2024 to make the energy grid smarter, stronger, more dynamic, and more secure. This was the 13th consecutive year of record-setting investment.
- Invested more than USD1.3 trillion during the past decade to enhance and build out the nation's generation, transmission and distribution infrastructure.
- Are projected to invest more than USD1.1 trillion between 2025 and 2029 to support the growing electricity demand driven by AI and data centre expansion, industrialisation and the reshoring of manufacturing activity, and the electrification of the broader economy.

US electricity demand will grow at a 2.5 per cent compound annual growth rate through 2035, compared with a 0.5 per cent CAGR from 2014-24, according to research distributed by Bank of America Institute (BAI) in July 2025. BAI's 2.5 per cent CAGR prediction includes historical annual growth of about 0.5 per cent, with another 1 per cent coming from building electrification, 0.5 per cent from data centres, 0.3 per cent from industrial growth, and 0.2 per cent from electric vehicles.

Utilities will need to increase spending to expand and replace ageing power generation, and transmission and distribution assets, while deregulation and accelerated permitting may further help get more projects off the starting line, as per the report.

The US Senate Committee on Energy and Natural Resources heard testimony on July 23, 2025, about the need to meet the rising electricity demand. Generation interconnection timelines are too long, transmission development lags demand, and "permitting is fragmented and sequential," Vantage Data Centers told lawmakers.

US energy infrastructure is ageing quickly and in need of replacement. As of date, 31 per cent of transmission and 46 per cent of distribution infrastructure is near (<5 years) or beyond its useful life. So, while more capacity is needed, in 2024, 67 per cent of electric utility spending was on infrastructure replacements, while only USD32 billion was spent on new lines and substations. Thus, US power outages are increasing.

Grid Strategies told the Senate panel that an aggregation of utility forecasts shows the nation needs 15 per cent more capacity, or 120 GW by the end of the decade. Utility forecasts may be overstated because, as with generators connecting to transmission systems, there are many more requests from potential projects to connect than actual projects that will be built. Transmission investment is a cost-effective solution. Unnecessary process steps such as the double NEPA review required by current backstop transmission siting policy should be removed, and the expansion of categorical exclusions and lead agency coordination of permitting can help speed the process. Permitting agencies should also be staffed and federal agencies must remain independent. If interconnection timelines stretch years beyond project schedules, and the buildout of grid-connected generation capacity is not keeping pace with the demand growth rate for electricity, alternatives need to be explored, such as deploying on-site generation to serve initial loads, co-locating near existing power plants, planning developments in phases, and coordinating with utilities and state partners to locate scarce near-term capacity.

TVA proceeds on Sevier County and other transmission projects in Tennessee

The Tennessee Valley Authority (TVA) has identified its preferred route for a new transmission line in Sevier County, Tennessee—a critical infrastructure project aimed at strengthening reliability and meeting the region's rapidly increasing energy demands.

Following public input and comprehensive analysis of environmental, social, and engineering factors, TVA selected the route it says has the least overall impact on the surrounding area. A federal environmental review under the NEPA is also underway. Property owners along the proposed route will retain ownership of their land, while TVA will obtain easements to construct, operate, and maintain the line. Compensation will be provided based on fair market value.

The proposed transmission line will stretch approximately 3 miles (5 km), beginning at a tap point on TVA's existing Douglas Hydro–Pigeon Forge #2 161 kV line east of McMahan Hollow Road and

extending west to the Sevier County Electric System's new Waldens Creek 161 kV substation. The line will be a single-circuit 161 kV design, built with a combination of single- and double-pole H-frame steel structures within a new 100-foot-wide right of way (RoW).

TVA plans to begin survey work in Winter 2025 and start acquiring easements from property owners in Fall 2026. Construction is expected to begin in Spring 2027 and finish by Winter 2027.

TVA is involved in several transmission projects, some of which are ongoing in July 2025. The Sevier County project is one piece of TVA's broader strategy to modernise the grid and support the region's fast-growing energy needs, fuelled by population growth, industrial electrification, and the onshoring of manufacturing.

Other projects include:

- West Tennessee Power System Improvements: This project involves upgrades to the transmission system in Fayette, Haywood, and Tipton counties to improve reliability and capacity. This includes the purchase of land for a new substation and transmission line easements.
- Bristol, Tennessee (South Bristol): TVA is working on improvements to its transmission system in the Bristol area. This includes the construction of the 161 kV Sullivan–South Bristol line (17.3 km) and 161 kV Bluff City–South Bristol line (5.5 miles). Construction on the South Holston River crossing, which will impact traffic on Big Springs Road and Bullock Hollow Road, was scheduled to begin around July 2025.

TVA is also collaborating with American Electric Power (AEP) and Duke Energy on a USD275 million high voltage transmission line project in Indiana and Kentucky, involving a 765 kV line connecting AEP's Rockport Station to TVA's Paradise Station. The project will be developed by Pioneer Transmission LLC, a joint venture between AEP and Duke, and will include a new 765 kV substation.

TVA is making some of the largest capital investments in its history, planning to add over 6,200 MW of new, firm, dispatchable generation—pending necessary approvals and environmental reviews. More than 3,500 MW are already under construction, enough to power approximately two million homes.

Since October 2024, TVA has built 95 miles (153 km) of new transmission lines and fibre across its service territory and upgraded grid reliability infrastructure at 47 sites. The utility has also added four new delivery points to support customer growth, including new substations in Blue Ridge, Georgia, and Artesia, Mississippi.

TVA is also involved in the 2025 Integrated Resource Plan (IRP) and Transmission Plan (ITP), which are crucial for planning future transmission needs in the region, especially given factors like increased retirements of coal-fired power plants, population growth, and electrification. When finalised, TVA will present the IRP and an accompanying EIS to TVA's Board of Directors for consideration.

MPSC approves major transmission projects to support grid reliability in Michigan

The Michigan Public Service Commission (MPSC) has approved certificates of public convenience and necessity (CPCNs) under the Act 30 of 1995 for Michigan Electric Transmission Company (METC) to construct two major electric transmission line projects in south Michigan — the Helix–Hiple and Nelson Road–Oneida lines. These projects mark Michigan's first new interstate transmission lines in 50 years, and are part of the MISO Long-Range Transmission Plan (LRTP) Tranche 1 portfolio. ITC Holding Corporation, doing business as METC, will develop and operate the new transmission lines.

The Helix–Hiple section will consist of approximately 55 miles (89 km) of new 345 kV double-circuit (D/C) transmission line running between substations in Calhoun and Branch (near the Indiana border) counties, to the new Helix substation near Lansing, for the construction of which METC also needed approval as part of the project. The Nelson Road–Oneida section will span roughly 40 miles (63 km) of 345 kV D/C transmission line from the Oneida substation in Oneida Township to the Nelson Road substation in New Haven Township, and will span across Eaton, Clinton, Ionia, and Gratiot counties in Michigan. According to MISO, these projects are expected to improve the state's ability to import and export electricity, strengthen grid reliability, reduce grid congestion, and facilitate the integration of additional energy resources.

Clean Grid Alliance (CGA) and the Michigan Energy Innovation Business Council (Michigan EIBC), two advocacy organisations that supported the projects during the MPSC's regulatory review, welcomed the approval. These projects will help build the foundation for a generation fleet increasingly powered by lower-cost, renewable energy and supporting Michigan's growing clean energy economy. CGA also noted that regional transmission provides huge benefits for electric grid reliability, resilience, and affordability, and will deliver clean, affordable energy to homes and businesses across Michigan.

According to project estimates, the two transmission lines are expected to deliver approximately USD6.2 billion in financial benefits to Michigan over the next 20 years. They are projected to support around 34,000 jobs during construction and operation and provide enough capacity to supply electricity to 1.7 million homes.

The broader LRTP Tranche 1 initiative was approved by MISO in July 2022. The full tranche includes transmission projects across the region intended to address long-term reliability concerns and integrate renewable energy. MISO projects the LRTP portfolio will deliver USD37 billion in economic benefits over two decades.

METC submitted one proposed route and one alternate route for each line, as required by statute. The MPSC has approved and found that the alternate route was preferable as compared to the proposed route for the Nelson to Oneida line, noting it has fewer heavy angles and road crossings, impacts fewer wetlands and hydric soils, and uses an existing utility RoW, displaying sounder routing principles. For the Helix to Hiple line, the PSC found the proposed route reasonable, stating that the alternate route could avoid impact to the R&R Ranch Airport in Marshall, but may result in more damage to archaeological sites, increase the number residences within 500 feet of the line's RoW, and expand the number of parcels crossed by the line.

Neither project will present threats to public health and safety, and although there will be some environmental disturbances, approval of both projects was permissible under the Michigan Environmental Protection Act because there were no feasible or prudent alternatives.

The PSC conditioned its approval based on a number of actions METC must take:

- METC must consider landowners' specific requests for minor modifications to the major transmission line routes approved in this order. The PSC directed METC to file a memorandum in the case detailing how impacted landowners may submit minor route modification requests to the company and to file a monthly report documenting any minor modification requests.
- METC must provide landowners along the approved routes and adjacent landowners with contact information so that they can communicate concerns to METC about the projects. METC's monthly reports must detail all communication received from these landowners.
- METC must investigate every noise complaint received by landowners to ensure there is not a system issue that needs to be addressed.

The projects have been controversial because residents expressed dismay over the lack of public input on the projects and the fact that their concerns regarding routes went largely unheard. Some of the properties in the approved routes run through legacy farm land, and residents are concerned about their property values dipping due to the lines and pending construction activity. Also, ITC/METC, in an attempt to acquire land prior to pending eminent domain proceedings, has allegedly been offering landowners raw deals with few property rights or just compensation.

These projects would usher in the first major Michigan electric transmission line projects in more than a decade, with the PSC reiterating that the need was evident. In approving the lines, all three PSC members expressed disappointment in the way the company behind the project handled public engagement. ITC/METC responded that they promise to refine their outreach process moving forward.

A PSC representative quoted that Act 30, which outlines guidelines for electric transmission line siting, sets the bar too low for companies and does not give landowners an adequate opportunity to shape the outcome. The low bar of landowner public engagement was another issue with Act 30 that needs to be addressed. Act 30 only requires official notice to landowners directly on routes proposed by a company, and leaves out adjacent properties or those in the general study area where intervenors may propose alternative routes. Although the Act theoretically allows the PSC to approve one of those intervenor-proposed routes, that would mean approving a route on land with owners who were never notified.

To bring greater clarity to the process and ensure that landowners were not treated in the same way again, changes are on the horizon for the state's application process for large-scale electric transmission line developments. The PSC approved an order that directed staff to develop voluntary filing guidelines for applicants under Act 30. The commission voted unanimously to jumpstart that process as a way to address concerns about Act 30's lack of clarity on what constitutes an alternative route, to what degree private benefits need to be estimated in advance of a project, and whether the law provides for sufficient and clear interaction between an applicant and a landowner. It is hoped that the upcoming rule making will serve as a critical channel for the public to help shape future Act 30 applications and outcomes.

The Nelson Road–Oneida transmission line project is scheduled to begin construction in Q1 2028 and be completed by Q4 2028. The Helix–Hiple transmission project is scheduled for completion in Q3 2030, while construction is slated to begin in Q1 2029.

BPA energises 230 kV transmission line at Hanford

The Bonneville Power Administration (BPA), which delivers hydropower produced in the Columbia River Basin to communities across the Northwest, in partnership with the US Department of Energy Office of Environmental Management's Hanford Field Office—a 580-square-mile (1,502-square-km) section of semi-arid desert in southeast Washington established in 1943 as part of the Manhattan Project to produce plutonium for national defence—has completed the installation and energisation of a new 18-mile (29-km), 230 kV transmission line.

The transmission line was required to improve the reliability of electrical service used to power waste treatment operations and other clean-up efforts at the Hanford Site. It connects two substations, one near the centre of Hanford operations and another outside the site.

The new line replaced an 80-year-old system, which contractor Hanford Mission Integration Solutions (HMIS) determined will not meet the site's long term clean-up needs. A dual-circuit tower design included in the new line improves reliability for key clean-up projects, including the waste treatment and immobilisation plant. The facility is preparing to turn radioactive tank waste into glass for safe disposal, while reducing risks and protecting the environment.

BPA constructed the towers and transmission line, and will use the second circuit. HMIS supported the project and will operate the circuit providing power to the waste treatment plant and other key Hanford Site facilities.

Central Illinois Grid Transformation Program receives CPCN from ICC

On July 2, 2025, the Illinois Commerce Commission (ICC) approved a CPCN and route for the Central Illinois Grid Transformation Program – based on a joint application by Ameren Transmission Company of Illinois (ATXI) and Ameren Illinois, which are working together to build a more reliable and resilient energy grid in the state.

The Central Illinois Grid Transformation Program includes approximately 380 miles (612 km) of new or upgraded transmission lines across central Illinois, with the vast majority to be rebuilt along existing corridors and co-located with existing Ameren Illinois facilities. The programme also includes building three new substations and upgrading several existing substations.

The programme will prepare the grid for the future by replacing ageing infrastructure, adding transmission capacity to ensure energy reliability and

resiliency in the region, promoting more access to energy sources for communities, and supporting lower energy supply costs.

The planned route was submitted to the ICC by ATXI and Ameren Illinois on February 5, 2024, after careful consideration of feedback from landowners, community members, interested agencies and local officials. The approved route includes options in Adams and McDonough counties.

Following these approvals, the environmental studies/surveys will be carried out. The process of acquiring real estate began with landowners who own property along existing corridors in early 2024, and for those who are affected by the new corridors in early 2025.

Construction is expected to begin in mid-2026, with an anticipated in-service date in June 2029.

JCP&L initiates grid infrastructure upgrade works in Central New Jersey

Jersey Central Power & Light (JCP&L)—a utility that serves 1.1 million customers in central and northern New Jersey—has started work in central New Jersey for infrastructure upgrades to enhance the regional power grid and improve service reliability for residents and businesses in Ocean and Burlington counties. The work will cover multiple communities, including North Hanover, Plumsted Township and Jackson Townships, and New Hanover.

The project involves clearing brush along 14 miles (22.5 km) of existing RoW for new utility poles that will support a high voltage power line. The line will help enhance the efficiency and reliability of electricity delivery while providing a backup power source for the lights, if wires or equipment on the region's primary line are damaged or must be taken out of service.

While construction is expected to begin in early September 2025, helicopters will be used to install equipment and string power lines in areas that are difficult to access by ground. The approach will offer a safe, efficient and environmentally friendly alternative to using heavy equipment, which would require building roads or clearing large paths. Helicopters therefore, minimise landscape disruption, enhance worker safety, and accelerate the construction process by flying in materials and placing them with precision.

As part of the work, new and existing overhead high voltage lines along the project route will be upgraded to stronger wires to better handle increased capacity, and be more resilient during storms. The project is part of Energize365, FirstEnergy's grid evolution programme focused on investing USD28 billion between 2025 and 2029 across its six-state footprint to create a smarter, more secure grid.

The grid upgrade project is expected to be completed in June 2026.

National Grid advances South Oswego–Tar Hill transmission rebuild project

National Grid is making progress on the 115 kV South Oswego–Tar Hill Transmission Rebuild Project in Central New York State, with the investigations underway along the route. The project includes rebuilding approximately 28.6 miles (46 km) of 115 kV electric transmission lines and replacing related structures in Oswego County, and constructing two new substations (East Ave in Oswego, NY and Maiden Lane in Scriba, NY). Besides the City of Oswego, the project includes the towns of Albion, Mexico, New Haven, Orwell, Richland, and Scriba.

The project will replace the existing D/C 115 kV transmission lines with D/C or two single-circuit (S/C) lines, depending on the location, to improve reliability. The new lines will be placed on either one or two monopole tubular steel structures, and will operate at 115 kV, the current voltage. Also included are access roads upgrades, and technologies to improve response time and decrease maintenance costs. Most of the work will cover existing RoW, but additional easements may be needed for the construction and operation of the new line.

The voltage and length of the project requires an Article VII Certificate issued by the New York State PSC. The Article VII permitting process begins with an application to the PSC for a Certificate of Environmental Compatibility and Public Need. Once the certificate is granted by the PSC, National Grid will submit the Environmental Management and Construction Plan for PSC approval. The project has entered the permitting phase with National Grid submitting its Article VII Application to the PSC in January 2025. Geotechnical investigations (soil borings) will continue along the transmission line corridor through the summer of 2025. Project team members are on site, reviewing the corridor since May 2025. Sites for potential construction yards (marshalling or laydown yards) continue to be evaluated.

A public virtual session was held on June 4, 2025 and open houses on June 11 and 12, 2025 by National Grid. The PSC also hosted two virtual public statement hearings on July 22, 2025 to solicit stakeholder feedback.

Design and permitting began in Fall 2023 and should be completed by Fall 2025, with construction expected to begin in April 2026 and end in June 2029.

The South Oswego–Tar Hill project is part of Upstate New York's Upstate Upgrade initiative, involving more than 70 projects through 2030, which will transform the transmission grid to meet growing demand for electricity, while generating thousands of new jobs and more than USD1 billion in economic growth across the region.

Public comments invited for proposed Propel NY Energy transmission project

The New York State PSC held in-person public statement hearings on July 22 and 23, 2025 at Glen Cove and Mineola respectively, regarding the joint application of New York Transco LLC and New York Power Authority (NYPA) to construct, operate, and maintain the Propel NY Energy transmission project. For stakeholders who could not attend the hearings, comments may be submitted by August 1, 2025.

The Propel NY Energy project comprises of approximately 89.7 miles (144.3 km) of new underground and submarine transmission lines [approximately 78.5 miles (126.3 km) at 345 kV and 11.2 miles (18 km) at 138 kV], and direct interconnection with nine existing and/or new substations located within Suffolk, Nassau, Queens, Bronx, and Westchester counties. Of the total new lines, two components are within New York State waters: an approximately 9.1-mile (14.6-km) crossing of the Long Island Sound between the Town of Oyster

Bay and the City of New Rochelle, and an approximately 0.7-mile (1.1-km) crossing of the East River and an approximately 0.3-mile (0.5-km) crossing of the Westchester Creek in Bronx County.

NYPA and New York Transco were selected through a competitive process by the NYISO to bolster parts of the electric transmission network across sections of Long Island, New York City, and Westchester County. New York's transmission system is in serious need of improvements and expansion, and Propel NY Energy will play an important role in improving reliability and resiliency of the grid, and help deliver more clean energy into the state-wide grid, including OSW and other renewable generation sources.

On July 31, 2024, the applicants filed an application for a Certificate of Environmental Compatibility and Public Need pursuant to Article VII of the Public Service Law. If granted, the certificate will authorise the applicants to construct, operate, and maintain the Propel NY Energy project.

Environmental, consumer advocates sue BPA for joining SPP's day-ahead market

Five advocacy groups—NW Energy Coalition, Idaho Conservation League, Montana Environmental Information Center, Oregon Citizens' Utility Board, and Sierra Club—sued BPA on July 10, 2025 for deciding to join the SPP Markets+ day-ahead market. The lawsuit was filed at the US Court of Appeals for the Ninth Circuit.

BPA is a key player in the Northwest's power sector. The agency sells wholesale power from federal hydroelectric dams in the Northwest, totalling about 22.4 GW. The federal power marketer also operates about 15,000 circuit miles (24,140 circuit km) of high voltage transmission across the Northwest. BPA mainly sells its power to cooperative and municipal utilities, and public power districts.

The BPA's May 9, 2025 decision to join Markets+ instead of a day-ahead market for the West developed by the California Independent System Operator (CAISO) will lead to higher electric costs, inefficient operations between market seams, and potentially the need to build more generating facilities, according to the lawsuit filed by the advocacy groups.

Earthjustice, representing the advocacy groups, noted that BPA's decision violated the Pacific Northwest Electric Power Planning and Conservation Act, the NEPA, and the Administrative Procedure Act. BPA did not rationally explain how joining the smaller, non-contiguous Markets+ footprint will enable it to meet its duty to promote adequate, efficient, economical, and reliable power supply for the region that also gives priority to clean, renewable resources.

The groups also contend that BPA's choice to join Markets+ will likely increase the risk of blackouts during periods of high or extreme electricity demand because of the "many and complex" seams that power must be transferred across in the market as compared to CAISO's Extended Day-Ahead Market (EDAM) or a "no-action" alternative.

Two day-ahead markets are emerging in the West. Arizona Public Service, Xcel Energy's Public Service Company of Colorado, Salt River Project, Tucson Electric Power, and UniSource Energy Services are among utilities planning to join Markets+.

PacifiCorp, the Los Angeles Department of Water and Power, the Balancing Authority of Northern California, Portland General Electric, and Public Service Company of New Mexico are among those set to join EDAM. Idaho Power, NV Energy, and PowerWatch – formerly BHE Montana, are leaning towards joining the CAISO-run market.

In a day-ahead market, a grid operator schedules power production a day in advance based on demand forecasts. This can lead to more efficient operations and reduce price volatility.

In preparing to make its final decision, BPA said that while the CAISO's EDAM may offer greater financial benefits compared to Markets+, overall the SPP market is a better fit for Bonneville based on market design elements covering governance, resource adequacy, greenhouse gas accounting, and congestion revenue.

PacifiCorp proposes to develop 500 kV Blueprint South project

PacifiCorp—which operates as Pacific Power in Oregon, Washington and northern California, and as Rocky Mountain Power in Utah, Wyoming and Idaho—proposes to build the new 500 kV Blueprint South transmission line in south-central Oregon through a portion of Deschutes, Crook, Klamath and Lake counties, to strengthen the transmission system backbone and increase capacity to serve growing loads. The new 180-mile-long (290-km) line will connect several existing substations and two proposed new substations between the Powell Butte area and southern Klamath County.

This line will help reduce transmission system constraints and add capacity to serve the growing needs of customers, businesses and industries. The project will also enable integration of renewable energy sources, enhance reliability, and support economic development in Oregon and the region.

The project currently is in the early planning stages. PacifiCorp is conducting a study to develop, examine and evaluate various potential options to identify a viable route for the transmission line where it will have the least impact on communities, land uses, and the environment, while also meeting engineering and safety standards. The project interactive map, digital comment form, and public comment summaries and responses are available on the Blueprint South website. The project map shows preliminary alternative routes, which are subject to change based on further analysis and input from customers, communities and stakeholders. The routing study began in late 2023 and is anticipated to conclude in late 2025.

Open house meetings were held in Prineville, Bend, Chiloquin and Klamath Falls on March 10-13, 2025, and in Redmond and Christmas Valley during April 23-24, 2025, respectively, along with a virtual meeting in March 2025 to engage stakeholders. Comments submitted by the public were summarised and made available on the Blueprint South website.

As of mid-May 2025, a total of 810 comment submittals, each with multiple comments, were received via the comment form at the meetings or on the website, or by email, each typically with multiple comments.

Based on public feedback, and further engineering and environmental evaluation,

the preliminary alternative route corridors will be refined. PacifiCorp will host a second set of open house meetings in early 2026 for the public to review and comment on the refined alternative routes before beginning the permitting process.

Once the routing study is completed, PacifiCorp will obtain the necessary permits, the major ones being:

- A Site Certificate from the Oregon Energy Facilities Siting Council
- An EIS and Record of Decision (ROD), in accordance with the NEPA for RoW across federal lands
- A CPCN from the Oregon PUC

In addition, there are several other federal, state and local permits and approvals required for construction that are under the jurisdiction of other agencies.

As per the preliminary project schedule, project planning and permitting will continue through 2028, followed by project construction during 2029 to 2032.

Open house being held for Bianco 230 kV transmission line siting project in Arizona

Arizona Public Service (APS) is holding a virtual open house for the Bianco 230 kV Transmission Lines Siting Project. This project involves identifying potential routes for a new 230 kV transmission line connecting the existing Sundance generating station to the Pinal South substation, both in unincorporated Pinal County.

The project aims to meet the growing energy needs of the Casa Grande area by upgrading the existing transmission infrastructure. APS has begun studies to determine appropriate routes for the new 69 kV, 230 kV, and 500 kV transmission lines, and new substation in the Casa Grande/Pinal County area. These facilities will connect with existing transmission infrastructure.

The project's conceptual connections in Pinal County include the 230/69 kV and 500/230 kV Santa Rosa–Desert Basin connections, 69 kV Vista–Santa Rosa line, and 69 kV Weaver substation.

APS is actively seeking public input on the project, particularly regarding potential route options. Open houses for the public were held on June 10-11, 2025 in Casa Grande, Arizona, along with an ongoing virtual open house that allows individuals to access project information, review potential route options, and submit comments at their convenience. The open house comment period ended on July 11, 2025.

The estimated siting completion date is planned for Q1 2026.

CenterPoint adds another USD500 million to 2025 capex plans

CenterPoint Energy Inc. has added USD500 million to its 2025 capital spending plans, with most of that investment dedicated to transmission infrastructure in the company's home market of Houston.

CenterPoint's amplified investment plans—this year's capex budget now stands at USD5.3 billion—are intended to help it serve booming demand, exemplified by its interconnection queue growing by 6 GW since the end of Q1 2025. Earlier this year, the utility increased its investment plans between 2026 and 2030 by USD5 billion to about USD31.2 billion, more than USD23 billion of which will go to its electric operations in Houston and Indiana.

Of the 6 GW of new interconnection requests, two-thirds are coming from data centre developers. The remainder is spread across advanced manufacturing, energy exports, and life sciences. The first of those customers is expected to start being connected in late 2026. Due to excess capacity being built on its system over the years, including transmission and substations, the utility is able to move quickly with these interconnection requests.

Among the factors that will help CenterPoint fund its medium-term investment plans, is the planned sale of its Ohio gas business, which serves more than 330,000 customers and has an annual rate base of about USD1.5 billion. The utility hopes to sign an agreement to offload that unit late in 2025, and close the deal in the second half of 2026.

The sale would help redirect about USD1 billion of spending over the next five years to the company's growing Texas footprint. That includes a large amount of Houston-area spending on resiliency in the wake of 2024's Hurricane Beryl, projects that are quickly producing results: Houston Electric's customer outage minutes in the first half of 2025 were down about 50 per cent from 2024.

CenterPoint posted a second-quarter net profit of USD198 million on total revenues of USD1.94 billion. In the same period of 2024, those figures were USD228 million and USD1.91 billion, respectively. The company's total throughput for the quarter rose 4 per cent while its customer base expanded by 2 per cent.

Idaho Power submits 2025 long-term energy plan to address growing demand

Idaho Power has filed its 2025 IRP with regulators in Idaho and Oregon, outlining strategies for meeting projected increases in energy demand over the next two decades.

The plan includes proposals for expanding energy resources, transmission infrastructure, battery storage, and energy efficiency measures. Regulatory commissions in both states will now establish a timeline for public comment and review before determining whether to acknowledge the plan.

According to the utility, its preferred resource portfolio prioritises cost-effectiveness and reliability, while also factoring in efforts to reduce wildfire risk. Forecasts included in the plan project nearly 45 per cent growth in peak electricity demand — equivalent to 1,700 MW — by 2045, with almost 1,000 MW of that demand expected within the next five years. For comparison, the 675 MW Brownlee hydropower plant, the company's largest single energy resource, has less capacity than this anticipated near-term increase.

The rising energy demand is attributed to both population growth and expansion in commercial and industrial activity. While large new customers are generally required to cover the costs of connecting to the grid, Idaho Power still must plan for how to integrate and supply these loads while maintaining overall grid performance.

The IRP also highlights the need for additional high voltage transmission infrastructure, including the Boardman to Hemingway and Southwest Intertie projects — both 500 kV lines. These would

support the company's ability to import electricity during periods of high demand.

The development of the IRP involved input from the IRP Advisory Council (IRPAC), a group of stakeholders that included industrial customers, environmental advocates, representatives from the agricultural sector, elected officials, utility regulators, and others.

Three Peaks to Purgatory Flat transmission line project planned in Utah

PacifiCorp plans to build a new 60-mile (97-km), 345 kV S/C transmission line between the existing Three Peaks substation near Cedar City, Utah, to the existing Purgatory Flat substation near Washington, Utah. The structure will include steel transmission towers, H-frames and single poles, while the right-of-way's width is planned at 150-230 feet.

The new transmission line will provide additional capacity for the southern Washington County area, to help serve growing customer needs in Utah while increasing overall system reliability, particularly in cases where outage may affect other transmission paths. The line will deliver electricity generated from PacifiCorp's generating resources, including renewables and thermal resources, while adding the benefits of increased reliability and capacity.

The significant growth that Southern Utah has experienced has increased the demand for energy, and the latter continues to rise. There has also been an increase in solar power development in the region, and this new line is needed to economically meet reliability requirements and transport resources across the service area. Without the new line, if an outage is experienced, the area's transmission system would not meet reliability planning standards.

The project is in the planning stages. PacifiCorp is conducting a routing study and meeting with local agencies to gather information in efforts to identify a suitable route. Route selection takes into consideration impact on existing land uses, biological and environmental factors, known resource constraints, and feasibility. Considering these factors, certain route options have been eliminated from further consideration.

The new 345 kV line will also boost system resiliency in the St. George area. Since all existing major transmission lines serving the area are in a common corridor and could be impacted simultaneously by an extreme weather event or wildfire, the new line will reduce the probability of a Public Safety Power Shutoff due to wildfire conditions.

While the July 2025 outreach phase is focused on engineering, the project will also engage the public on rights-of-way (2028-30) and construction (2030-32) over the next few years. The line's anticipated in-service date is in August 2032.

Snohomish County PUD reports progress on line and substation projects

Snohomish County Public Utility District (PUD) No. 1—the 12th largest public utility in the US, and second largest in Washington state, serving the 880,000 residents of Snohomish County and Camano Island for more than 75 years—will carry out electrical system improvements and preventative maintenance projects over the next several years to help ensure high levels of reliability to meet the needs of a growing customer base.

The PUD has more than 100 substations and switching stations across its service area. Current substation projects include:

- To increase reliability on Camano Island, the PUD plans to rebuild the North Camano substation (estimated completion September 2025). Key materials are awaited, which may delay the work.
- To increase reliability and support a future battery energy storage system (BESS), the PUD is building the new Crosswind substation on its North County Campus in Smokey Point. Estimated completion is end of September 2025.
- To better serve growing power demands in north Snohomish County, the PUD is upgrading its Lake Goodwin substation (completion estimated for July 2025) and its Stimson Crossing switching station (completion 2027).
- To increase capacity in Marysville, the PUD constructed the new Jennings Park substation in 2024 to replace its Central Marysville substation.
- To provide reserve capacity in case of a BPA transformer failure and add switching capability, the PUD is building the new Getchell switching station (completion 2027) in east Marysville near Highway 9. The PUD is designing this station to allow room for up to two BPA points of delivery for future growth in the north county area.
- To better serve the eastern portion of its service area, the PUD upgraded its Clearview substation in 2024, and will be upgrading the Thrashers Corner substation (completion 2027).
- To better serve the southern portion of its service area, the PUD plans to upgrade its Brier substation (completion 2026), and Picnic Point substation (completion 2027).

Line projects by the PUD include:

- To provide redundancy power to Camano Island, the PUD built the new 115 kV Stanwood-to-Camano line in 2023, while the rebuild of the existing 115 kV line to Camano Island will begin in the summer of 2025.
- To better serve the growing power demands in the northern portion of its service area, the PUD is rebuilding its 115 kV Stimson-to-Stanwood line (completion 2026), and designing and building the new 115 kV Stimson-to-Sills Corner line (completion 2027).
- The PUD built a portion of the new 115 kV line to feed the new Jennings Park substation in Marysville in 2024. It will now re-conductor about 0.75 mile (1.2 km) of 115 kV line near the said substation by 2026.
- The PUD is working on easements and finalising the design for the second phase of the 115 kV line to the Sky Valley substation (completion 2025).
- The PUD is planning to build a double-circuit 115 kV line to the new Crosswind substation in Arlington, which will support a new BESS project (completion 2025).
- To improve reliability, the PUD will rebuild the 115 kV line connecting its

Perrinville and Maplewood substations (completion 2026).

- To support load growth and improve reliability in Everett, Marysville, and north Snohomish County, the PUD is in the planning stages of building a new 115 kV line to the new Getchell substation (completion 2027) and a new 115 kV line from the Everett to Delta substations (completion 2027).
- To maintain reliable service to Hat Island, the PUD is planning to replace the Hat Island submarine cable (completion 2026).

Open houses are being announced for several of these projects.

In addition, the PUD carries out pole and distribution maintenance annually, which includes the replacement of about 500 ageing poles, assessing and treating more than 25,000 poles, and replacing 20 to 30 miles (32 to 48 km) of ageing underground cables throughout the utility's service area.

Report identifies near-term solutions to address rising power demand

A new report from The Brattle Group, commissioned by the Clean Air Task Force (CATF)—a non-traditional, fact-based, environmental organisation—outlines near-term actions to help utilities, grid planners, and policymakers respond to a sharp rise in electricity demand—driven by data centre growth, electrification, and domestic manufacturing expansion.

As traditional pathways for adding generation—such as renewables, battery storage, and gas—face delays due to permitting, procurement, and construction hurdles, the report identifies underutilised strategies that can be deployed quickly to maintain reliability while supporting clean energy and affordability goals. For example, CATF noted that nearly 70 per cent of transmission lines are over 25 years old, and many proven solutions—like GETs and proactive planning tools—remain underused.

Titled 'Optimizing Grid Infrastructure and Proactive Planning to Support Load Growth and Public Policy Goals', the report emphasises the need to optimise the current grid, streamline the connection of new loads and resources, and improve planning and procurement processes. Its authors argue that focusing on readily available tools can help relieve short-term pressure on the grid and keep long-term energy and economic goals on track.

The full report includes case studies and detailed recommendations designed to address today's planning and policy constraints. It also adds that effective responses to load growth will require considerable effort, coordination, and collaboration from utilities, regulators, and policymakers.

Key recommendations include:

- Maximising the use of existing infrastructure through rapid deployment of advanced grid technologies like GETs, expanded use of virtual power plants, and improved interregional power trading.
- Accelerating connections for new loads and resources by reforming interconnection processes, co-locating generation and demand in energy parks, and supporting self-supply models for large customers.
- Adopting proactive, scenario-based planning to identify cost-effective infrastructure investments that align with clean energy and economic development objectives.
- Protecting affordability and equity through smart rate design, demand-side incentives, and expanded bill assistance for low-income customers—especially as large, energy-intensive loads like data centres continue to scale.

The report warns that without faster deployment of such measures, electric demand could outstrip capacity in some regions, risking reliability, and delaying broader electrification and decarbonisation goals.

Georgia Power's new IRP keeps coal plants online to serve data centres

The Georgia PSC, on July 15, 2025, approved Georgia Power's 2025 IRP, which calls for keeping coal plants online to serve anticipated data centre demand. For example, its Bowen coal plant had been planned to shut down in 2035, but will now continue operating, possibly through 2038. The IRP also includes up to 4,000 MW of renewable energy, 1,500 MW of battery storage, and a smaller amount of new gas capacity by 2035.

Of the total 4,000 MW by 2035, the IRP calls for an initial target of 1,100 MW of new renewable resources sought through competitive utility-scale and distributed generation procurements. Georgia Power said the new resources would expand the company's renewable portfolio to approximately 11,000 MW by 2035.

The utility said it anticipates approximately 8,500 MW of load growth over the next six years. The IRP allows for the PSC to monitor that growth, with the utility updating its load forecast and making quarterly filings regarding large load developments.

Clean energy and consumer advocates were critical of the plan's reliance on coal and gas, and an energy savings target (of 0.5 per cent of the company's annual electricity sales) that has not been updated in years. While it was agreed to increase the target to 0.75 per cent in a 2023 agreement between the utility, and environmental and consumer groups, the utility has consistently failed to meet even the lower target, said American Council for an Energy-Efficient Economy. Positive aspects of the IRP around solar, storage and customer programmes "are sadly blunted by the continued investment in fossil fuel infrastructure," said Southern Alliance for Clean Energy.

The Atlanta metropolitan area is one of the prime data centre markets in the country right now, and Georgia Power's long-term plan aims to meet the growing demand. But growth projections remain uncertain and critics of the IRP say it could leave customers on the hook for higher bills if the demand does not materialise.

The Natural Resources Defense Council feels approval of the plan locks in major investments based on uncertain assumptions about future data centre demand, while failing to deliver meaningful benefits or cost relief to existing residential and small business customers. Data centres are driving US electricity demand rapidly higher, but observers say final construction of new facilities is likely to be a fraction of what has been proposed. Another recent analysis concluded there are not enough AI chips globally to support the projections of aggressive US data centre growth.

Georgia Power and the PSC's Public Interest Advocacy Staff disagreed over the amount of new energy large load customers were expected to consume over the next several years – although both sides did agree it would be significant, the PSC said in a statement following the unanimous approval of the IRP. This long-term plan aims to strike a balance between reliability and affordability. Regulators ultimately approved new production of at least 6,000 MW from all resources and possibly up to 8,500 MW.

New Jersey launches solicitation for 1 GW transmission-scale storage

The New Jersey Board of Public Utilities (NJBPU)—a New Jersey state agency and regulatory authority —on June 18, 2025 approved Phase 1 of the Garden State Energy Storage Program (GSESP). This transformative effort, formerly known as the New Jersey Storage Incentive Program (NJ SIP), is designed to significantly expand the amount of grid-scale energy storage capacity in New Jersey. This ambitious programme directly addresses demand growth and limited supply, the root causes of recent rate increases, while simultaneously building a major part of the state's clean energy future.

Energy storage systems (ESS) are crucial for integrating intermittent renewable energy sources like solar, strengthening grid resilience against outages, and reducing carbon emissions. They can be built and connected to the power grid faster than any other type of power plant that can turn on when needed. This speed is critical right now because supply chain problems mean New Jersey cannot build traditional power plants (like natural gas or nuclear plants) within five years.

GSESP rapidly addresses the lack of capacity—one of the root causes of New Jersey's energy conundrum and reduces long-term electricity costs through improved system efficiency. The programme is the culmination of two years of extensive stakeholder engagement, incorporating valuable feedback from a diverse range of industry experts, environmental groups, and public representatives.

GSESP will be carried out in multiple phases designed to deploy 2 GW of energy storage by 2030, a mandate established by the Clean Energy Act of 2018. The programme will include both large-scale grid infrastructure and smaller, localised energy storage solutions. The first phase of the programme, with details below, will help New Jersey quickly add these new ESSs to the grid.

Phase 1: Transmission-scale energy storage will strategically procure at least 1 GW of larger projects directly connected to the main power grid through competitive bidding.

- Tranche 1: The first solicitation aims to award 350-750 MW. The pre-qualification process started on June 25, 2025, with July 23, 2025 as the deadline for guaranteed pre-qualification review for deficiency and opportunity for correction. Bidders can submit questions by August 11, 2025, with a final bid submission deadline of August 20, 2025. The NJBPU expects to issue awards for Tranche 1 by October 31, 2025.
- Tranche 2: A second solicitation will be prepared for the first half of 2026 to secure the remaining capacity needed to reach the 1 GW target for Phase 1.

Moreover, the NJBPU plans to use existing funds for Phase 1 of the programme without increasing rates for consumers. Specifically, Phase 1 of the initiative will be funded primarily through the New Jersey Clean Energy Program (NJCEP) budget. The latter was established in 2003, in accordance with the Electric Discount and Energy Competition Act (EDECA), to provide financial and other incentives to the State's residential customers, businesses and schools that install high-efficiency or renewable energy technologies, thereby reducing energy usage, lowering customers' energy bills, and reducing environmental impacts. The programme is authorised and overseen by NJBPU.

Phase 2: Distributed Energy Storage is expected to launch in 2026. This phase will focus on incentives for smaller energy storage systems connected to local distribution grids, including both 'in front of the meter' (grid-connected) and 'behind the meter' (residential or commercial) systems. These incentives will be both fixed and performance based.

A potential GSESP Phase 3 may introduce a performance-based incentive for transmission-scale systems, but this phase is currently being evaluated and is deferred.

New York launches 1 GW bulk energy storage solicitation using new credit

The state of New York announced its first bulk energy storage solicitation on July 28, 2025, issuing a request for proposals (RfP) to procure a total of 1 GW from storage developers as part of a state goal to deploy 6 GW of energy storage by 2030.

The New York State Energy Research and Development Authority (NYSERDA) is employing a system of index storage credits (ISC) adopted in 2024, and partially modelled on the state's renewable energy certificates. One ISC is equivalent to one MWh of discharge capability per day, according to the RfP. The state's governor described the ISC as a "market-based mechanism that gives project owners greater revenue certainty while incentivising them to participate in wholesale energy and capacity markets".

This is one of the largest energy storage procurements in the US, though New York has seen protests over planned battery facilities in recent months, with residents raising concerns about the fires that lithium-ion batteries can cause. A January 2025 fire destroyed most of a 300 MW battery array at Vistra Energy's 750 MW Moss Landing energy storage facility.

The storage projects that bid into the solicitation will have to meet new storage safety codes adopted earlier in July 2025, by the State Fire Prevention and Building Code Council. Although the changes will not formally take effect until January 1, 2026, NYSERDA has already integrated these recommendations into its residential, retail, and bulk energy storage programmes.

NYSERDA said in a release that its goal in adding bulk energy storage to New York's grid is to lower costs, optimise the generation and transmission of power, enhance energy grid infrastructure, and ensure the reliability and resilience of the state's electricity system.

Storage developers who want to bid projects into the solicitation must submit an eligibility application to NYSERDA by September 4, 2025.

Recurrent Energy commissions 1,200 MWh storage facility in Arizona

Recurrent Energy, a subsidiary of Canadian Solar Inc., and a leading global developer and operator of solar and energy storage assets, has announced that the 1,200 MWh Papago Storage project in Maricopa County, Arizona, is now fully operational. The BESS facility has begun delivering stored electricity to APS, the state's largest electric utility, just in time to support rising power demand during the peak summer months.

Papago Storage is the first of three Recurrent Energy projects with tolling agreements in place with APS to go live. Together, the three projects will offer a total of 1,800 MWh of battery storage and 150 MWac of solar generation. Once all facilities are commissioned, they will collectively store and dispatch enough energy to power the equivalent of 72,000 homes for four hours and provide solar energy sufficient to meet the annual needs of approximately 24,000 homes.

The project was built by e-STORAGE, Canadian Solar's majority-owned subsidiary, which served as the turnkey provider for engineering, procurement, and construction. e-STORAGE will also be responsible for maintaining the BESS facility under a long-term service agreement, ensuring continued performance and reliability. The successful commissioning of Papago Storage marks an important step in Arizona's efforts to build a cleaner, more resilient energy system, while demonstrating Recurrent Energy's growing role in large-scale energy storage solutions across the US

Ameren plans Missouri gas plant with first 400 MW BESS facility

Ameren's Missouri utility subsidiary plans to construct an 800 MW simple-cycle gas plant alongside a 400 MW BESS facility in Jefferson County to meet rising electricity demand. The Big Hollow Energy Center is designed to "efficiently meet increased energy demands while ensuring grid resiliency," Ameren said in its June 2025 announcement. The lithium-ion battery will be Ameren's first large-scale BESS facility, though the utility is planning to have 1 GW of BESS capacity online by 2030 and 1.8 GW by 2042.

The gas plant and battery storage will operate independently, leveraging energy infrastructure on land Ameren already owns to reduce construction time and cost. The utility noted that it is crucial to have a balanced mix of generation technologies and equally important to strategically locate them across the region, to maximise energy output from resources.

Ameren in February 2025 announced a shift in its preferred resource plan to provide for 1.5 GW of anticipated new energy demand by 2032. Along with storage, Ameren is planning to build 1.6 GW of gas generation resources by 2030, with a total planned addition of 6.1 GW by 2045.

Building off the success of bringing in nearly two dozen new economic development projects in 2024, Ameren Missouri has construction agreements with potential large load customers for new energy demand. Ameren also filed an updated Smart Energy Plan with the Missouri PSC in February 2025. The USD16.2 billion, five-year plan calls for investments in grid modernisation to improve system reliability and resiliency.

As per Ameren, the Big Hollow project could be online by 2028, with timely regulatory approval.

Open houses completed for North Coast transmission line in Canada

BC Hydro—a Canadian electric utility in the province of British Columbia (BC)—is developing the new 500 kV North Coast transmission line and associated infrastructure from Prince George to Terrace, in two phases. This project, in development since 2023, aims to strengthen the power supply in northern BC, supporting port activity, economic growth, and emissions reductions.

Phase 1 (Prince George to Glenannan Transmission) is an approximately 170-km, 500 kV line from the Williston substation to the Glenannan substation near Prince George, BC, while Phase 2 (Glenannan to Terrace Transmission) involves an approximately 130-km line between the Glenannan and Telkwa substations, and an approximately 145-km line from the Telkwa substation to the Skeena substation. Additional infrastructure for both phases includes fibre optic cable installed on new or existing transmission structures, capacitor station expansion, and substation upgrades or expansion.

To make the most effective use of the existing 500 kV infrastructure from Prince George to Terrace, and ensure the reliable delivery of electricity needed to the North Coast, BC Hydro is proposing to make upgrades along the lines, including thermal upgrades and installing anti-cascading towers. The purpose of thermal upgrades is to increase the distance between the transmission lines and the ground to increase the amount of electricity that the lines can carry and, along with the new transmission lines, increase the amount of electricity available to serve customers in the North Coast region. The new anti-cascading towers will limit the potential for a "domino effect" in the unlikely event a tower fails. This will enable the utility to limit damage and more quickly restore power should there be an issue on the line.

BC Hydro is set to begin construction on Phase 1 of the North Coast Transmission Line expansion by the summer of 2026. Environmental fieldwork, already underway, includes wildlife, waterway, vegetation, and archaeological studies. Preferred route selection is ongoing.

BC Hydro is also proposing to develop new transmission infrastructure from the Skeena substation near Terrace to the Bob Quinn substation, to connect industrial customers that have advanced their request to interconnect to its system. The preliminary plan is to develop the new transmission lines and substations in two segments. The utility is in the early stages of planning the route, including considering the option to generally follow the Northwest Transmission Line corridor, where possible.

Another new transmission line is planned from the Rupert substation to the Port of Prince Rupert, along with potentially expanding the Rupert substation, and develop a new substation on or adjacent to port lands. This new infrastructure will enable the utility to respond to requests for more electricity from customers located in the port.

Phase 2 of the expansion will add 130 km of lines from Glenannan to Telkwa, and

another 145 km from Telkwa to Skeena. The Telkwa substation may be upgraded or expanded, while other substations and capacitor stations along the route will also see upgrades.

The North Coast is currently supplied by 450 km of 500 kV radial transmission lines from the Williston substation near Prince George to the Skeena substation near Terrace. The Glenannan and Telkwa substations are located along the 500 kV lines. From Terrace, transmission lines head north towards the Aiyansh substation near Gitlaxt'aamiks (formerly New Aiyansh), south to Kitimat, and west to Prince Rupert.

BC Hydro is also proposing to upgrade the existing 500 kV transmission lines between the Williston and Skeena substations. It may also need to expand its transmission system south to Kitimat and west to Prince Rupert depending on customer demand and location. The utility continues to engage with existing and potential customers to understand their plans, including with potentially impacted First Nations to understand their interests and concerns. It will then review its existing infrastructure to understand what the existing infrastructure can handle and the type of new infrastructure that may be needed, including new transmission line and substation infrastructure.

Through its 2023 expression of interest (EOI) process, existing and potential industrial customers shared their potential level, location and timing of demand in the North Coast. Based on these responses, further new transmission infrastructure may be needed south and west of Terrace.

Open houses were organised during June 9-19, 2025 at Prince George, Vanderhoof, and Fraser Lake to learn about Phase 1: Prince George to Glenannan Transmission, and in Terrace, Smithers, Houston, and Burns Lake to get information Phase 2: Glenannan to Terrace Transmission, as well as BC Hydro's other activities in the North Coast area. Two online open houses were also held on June 23 and 24, 2025.

To support the estimated 1,500–1,800 workers, four temporary camps are planned in key locations. These camps are expected to be operational by 2027 and will remain active for three to four years. Right-of-way clearing and access work will begin in early 2026.

The proposed schedule is for North Coast Transmission Line Phase 1 to be in operation by the fall of 2030 and Phase 2 to be in operation by mid-2032.

Hydro One holds open house on Timmins to Wawa transmission line

Canadian Hydro One, Ontario's largest transmission and distribution company, organised an open house in South Porcupine on July 7, 2025, to gather public input about the Timmins portion of the route of a new transmission line between Timmins and Wawa. Hydro One had earlier held two open houses in Chapleau and Wawa.

The 260-km line, which is currently in the class environmental assessment phase, will be a S/C 500 kV connection running from the Porcupine Transfer Station (TS) in the city's east end, through the Chapleau area, to the Wawa TS. As of now, Hydro One has a number of route options coming out of Timmins, and then through the Chapleau area, around Chapleau, and then back into Wawa.

This project has been in the works for several years, as there is a widely expected surge in demand for clean electricity in the coming decades in northern Ontario, and the province as a whole. The Independent Electricity System Operator (IESO) – which is an independent and federally regulated entity that coordinates regional transmission to ensure non-discriminatory access to the electric grid – had conducted a needs assessment to identify the growing demand for electricity needs in the region, and has been in consultation on this project since 2023. This project is providing the support for that demand, and fuelling the economy and opportunities so that businesses are not constrained by the capacity in the area, and provides reliability to the overall network.

There are likely some mixed perspectives on the new transmission line, depending on interests such as mining or industrial operations, cottage and rural properties, small communities, and more.

The company emphasised that the project is still very much in its early stages, but aims to have the preferred route selected by the end of 2025. There will be another public comment period for the draft environmental study report in the summer of 2026. After that, final submission of the environmental study will take place by the end of 2026, followed by permitting in 2027, and construction in 2028. The project is expected to be completed and operational by late 2030.

Oceanic Wind Energy, CTE receive permit for OSW project study in Canada

Oceanic Wind Energy—a Vancouver-based renewable energy company that is focused on developing large-scale OSW projects—and its partner, Coast Tsimshian Enterprises (CTE)—a 50/50 partnership of the Metlakatla and Lax Kw'alaams First Nations—have been granted an Investigative Use Permit (IUP) for the first phase of an OSW project in Hecate Strait, Canada. The permit was granted to the partners for the first phase of development, which could have a capacity between 600 MW and 700 MW.

The proposed offshore project is located in coast Tsimshian territory on the northwest coast of BC, Canada, in Hecate Strait near Stephens Island, approximately 30 km west of Prince Rupert. The project area is home to one of the world's most powerful and consistent wind resources. With Class 7 wind conditions, low shear and turbidity, average annual wind speeds exceeding 10 m/s, and a winter capacity factor of over 65 per cent, the area offers an 'unparalleled opportunity' to generate renewable energy, especially during BC's peak demand season, according to the partners.

The permit allows organisations to occupy and utilise Crown land to study and gather information for a possible future project. The project will be connected to the mainland at the Prince Rupert substation near Prince Rupert via submarine cables.

This high-profile project meets major provincial and federal government policy initiatives, as below:

- Renewable energy project, only prominent utility-scale OSW project in north-west BC
- First Nations partnership opportunities for the wind project and the transmission line
- Meets objectives of CleanBC policy framework

- Consistent with Federal Climate Change/Infrastructure/First Nations/ Infrabank policy objectives

The BC government has acknowledged that the province is in urgent need of new energy generation projects to meet the growing demand for power and to accelerate efforts to build a clean economy. To that end, the province announced in December 2024 that all future wind projects would be exempt in BC from comprehensive environmental assessment processes. This decision – combined with the existing data on the wind resource in Hecate Strait and associated impacts that has already been compiled by Oceanic Wind – will significantly reduce the regulatory review timeline for the proposed OSW project.

Call to build Canada's east-west grid with renewable energy, upholding Indigenous rights

In a letter to the Canadian prime minister on July 3, 2025, more than 100 climate, community and Indigenous groups proposed an east-west electricity grid backed by renewable power, to bring a significant number of new jobs, improved health, affordability, and national security benefits to communities and businesses in Canada.

Upgrading Canada's east-west transmission grids has been the topic of study by the federal government, planning bodies, and advisory councils for over a decade, consistently showing significant benefits that lower energy costs, increase electricity system reliability, and allow for more low-cost renewables to be connected. The federal government had also campaigned on this issue during the 2025 election.

Canadian provinces are significantly more interconnected with the US than with one another, with over 30 cross-border transmission lines. Canada's electricity needs are projected to double or even triple before 2050, due to increasing electrification of industry, transportation, and heating.

The coalition is calling for more transmission lines across Canada to allow for more renewable energy to be integrated into the electricity system, to improve reliability by connecting regions. It is calling for an east-west electricity grid that upholds workers' rights, and the legal and inherent

Indigenous rights of the nations on whose territories these projects are being considered.

Supporters and signatories of the letter include the David Suzuki Foundation, 350.org, Sacred Earth, Canadian Association of Physicians for the Environment (CAPE), Climate Caucus, Climate Action Network Canada, and Ecology Action Centre.

In summary, the letter to the prime minister calls on the federal government to:

- Commit to significant federal funding toward permitting, planning and constructing strategic interprovincial and intra-provincial transmission projects.
- Uphold legal and inherent rights for Indigenous communities throughout Canada. This includes recognising Indigenous nations' leadership role in clean electricity in Canada, expanding support for Indigenous-owned and Indigenous-led electricity projects, and upholding Canada's highest standards and responsibilities under the United Nations Declaration on the Rights of Indigenous Peoples, and in upholding Indigenous free, prior and informed consent.
- Implement key labour supports as a condition for federal funding on electricity projects, including prevailing wage requirements, training capacity, and other just transition priorities.
- Alongside this work on transmission and generation, commit to financial support for energy efficiency, demand-side management, energy storage, and other electricity system upgrades in line with delivering affordable, reliable, and clean electricity throughout Canada.
- Update and implement Canada's Electricity Strategy, including implementing the Clean Electricity Regulations, and continuing to advance work to achieve a net-zero electricity grid.

The letter with all 105 signatories is titled 'Building Canada With Renewable Electricity'.

It follows the recent (May 28, 2025) passing of two BC Bills by the provincial government – The Renewable Energy Projects Act (Bill 14) and The Infrastructure Projects Act (Bill 15). The stated goal of these Acts is to streamline the approval process to speed up infrastructure and renewable projects.

But the two BC bills raised alarm bells with their significant concentration of power, with ministers and the government able to sideline Indigenous rights, municipal rights, and environmental regulation.

Bill 14 designates multiple existing projects to be streamlined. These include the North Coast Transmission Line project and nine wind energy projects that were selected by BC Hydro and Power Authority (BC Hydro)—a Canadian electric utility in the province of BC—in 2025 and 2024, respectively. The Act lays out three levels of projects, but there is a lack of transparency pertaining to what each level means.

Bill 15 gives the cabinet the authority to override permitting and environmental assessments for projects they deem a priority. Section 20 of Bill 15 indicates that Indigenous Peoples have a right to traditionally occupied lands and its resources, and the state will give legal recognition of that. However, through the passing of the Bills, the government communicates that it does not actually view BC as the traditional unceded lands of Indigenous Peoples.

Also under Bill 15, if an infrastructure project has what the legislation calls a "constraint," then a facilitator can be brought on. But if a solution cannot be reached through the consultation process, then the minister can create a solution and use that, or recommend the government use it. Opponents feel that almost all infrastructure projects in BC would fall under Section 20 of Bill 15.

Ontario IESO seeks 1.6 GW energy storage in adjusted procurement process

The Ontario IESO has officially launched its latest procurement scheme, by publishing the final documents pertaining to its Long-Term 2 (LT2) RFP. This long-awaited LT2 RFP follows on from the IESO's hugely popular LT1 RFP, which resulted in the single biggest procurement

of BESS capacity in Canada's history. The documents were published by the IESO at the end of June 2025.

This marks the official launch of LT2 during which municipalities will be asked to make decisions about local support for projects in advance of the project submission deadlines. The IESO has forwarded a letter to municipal officials with context about LT2 and the municipal role, and has released a guide about the requirements for municipalities and developers during the LT2 process. The IESO also hosted a webinar on July 10, 2025 to review the LT2 guidelines, and another webinar for municipalities and Indigenous communities, along with a dedicated municipal breakout session, on July 17, 2025.

Earlier this year, the Association of Municipalities of Ontario (AMO) released its 'Guidance Resources for Electricity Procurements' to support municipalities in their important decision making role as part of the province's ongoing electricity procurements.

To support elected officials better navigate this landscape, AMO has partnered with Oxford Economics to host another webinar on July 30, 2025, titled 'Navigating Economic Headwinds: Impacts on Municipal Infrastructure & Finance and Local Economies'. The webinar will provide essential context and insights to help municipal elected officials anticipate, explain and adapt to potential challenges and opportunities, particularly concerning critical infrastructure investments. Participation is limited to the first 500 registrants.

This procurement process is the largest in the province's history and focuses on securing affordable and reliable electricity supply to meet future needs. The LT2 RFP is divided into two streams: Energy and Capacity, with separate deadlines for each. The Energy stream is focused on renewable energy generation like solar and wind, while the Capacity stream focuses on resources like BESS, hydrogen storage, and gas/bioenergy facilities. Energy Stream projects have an October 16, 2025 deadline, while Capacity Stream projects have a December 18, 2025 deadline. The IESO anticipates running a regular cadence of procurements over the next 4-6 years.

The commercial operation of Canada's biggest BESS project to date, Oneida Energy Storage, which is 250 MW/1,000 MWh in capacity, began in May 2025. This LT1 project, located in Haldimand County, Ontario, is a joint venture between several companies including Northland Power, NRStor, Six Nations of the Grand River Development Corporation, and Aecon Concessions.

LUMA deploys LiDAR technology for Puerto Rico's electric grid

As part of ongoing efforts to transform and modernise Puerto Rico's electric system, LUMA—the country's transmission and distribution (T&D) utility—has integrated advanced Light Detection and Ranging (LiDAR) technology into its aviation and ground patrol operations. This tool captures detailed environmental information through laser light pulses emitted from sensors mounted on drones, helicopters, vehicles or ground-based equipment. The data collected is used to generate accurate 3D maps of terrain, structures, and electric infrastructure — even in complex or hard-to-reach areas.

LUMA uses this technology for key purposes, including the design and modelling of power lines, topographic surveys in densely vegetated areas, evaluation of encroachments on rights-of-way, and management of vegetation near power lines. In addition, ground-based LiDAR is used to inspect underground systems such as manholes, detecting risks or maintenance needs.

The integration of LiDAR technology enables surveyors in transmission line engineering to detect potential failures or vulnerabilities in power infrastructure before they become outages, thereby ensuring the continuity and reliability of electric service. The LiDAR technology has been integrated into aerial and ground patrols for the inspection of transmission lines, verification of critical structures, assessment of underground infrastructure, and support for rapid emergency response.

To date, LUMA has flown over approximately 33 per cent of transmission line miles and has inspected more than 17,100 structures using this technology, directly supporting modernisation and maintenance projects for the electric grid.

With this investment, LUMA hopes to continue transforming Puerto Rico's electric system—strengthening the grid and modernising its processes to deliver a more resilient and robust service to over 1.5 million customers across the island.

In another development, LUMA has begun replacing critical equipment such as insulators and hardware, on more than 10 transmission towers along Line 37,700, which connects the Palo Seco generation plant with the Bayamón Transmission Center substation.

These components, which have been in service for more than 30 years without being replaced, are part of one of the main lines that transports energy directly from the Palo Seco plant. Their replacement will increase the resilience and reliability of the electric system in Bayamón and surrounding towns, as per LUMA.

The work is being carried out with the support of LUMA's aviation team, as the transmission towers are located in hard-to-access areas. The helicopter transports field workers directly to the towers — ranging from 100 to 200 ft tall — to carry out the equipment replacements safely and efficiently.

This project is also being coordinated with Metropistas and the Federal Aviation Administration, as the work area borders the Plaza Río Hondo shopping centre and Expressway 22.

Latin America

Brazil's ANEEL approves RAP for CCTEE for 2025-26 cycle

Brazilian energy regulator, Agencia Nacional de Energia Eletrica (ANEEL), approved the Receita Anual Permitida (RAP) or Annual Permitted Revenue, for Contratos de Concessão de Transmissão de Energia Elétrica (CCTEE) or Electric Energy Transmission Concession Contracts for the 2025-26 cycle, on July 15, 2025. ANEEL estimated that the country's transmission system's RAP is set to increase by 9.14 per cent, in comparison to 2024-25 cycle.

ANEEL also approved the Tarifas de Uso do Sistema de Transmissão (TUST) or Transmission System Usage Tariffs, for electricity from Itaipu Binacional (which

is a binational entity equally owned by Brazil and Paraguay, and operates a total of 14 GW hydropower projects), as well as the charges for use of the transmission system and Tarifas de Uso do Sistema de Distribuição (TUSDg) or Distribution System Usage Tariffs as a reference for generators connected at voltage levels of 88 kV to 138 kV for this cycle. The new rates were implemented from July 1, 2025 and will continue until June 30, 2026.

Meanwhile, transmission tariff for electricity from Itaipu increased by 24.7 per cent due to the removal of the adjustment portion, which was included in the previous cycle to offset the financial impact of the postponement of the RAP review of Concession Agreement No. 62/2001. The latter was signed with Furnas Centrais Elétricas S.A. (Furnas), a subsidiary of Brazil's state-owned power company, Centrais Elétricas Brasileiras S.A. (Eletrobras).

Further, the TUST–Rede Básica (TUST-RB) or TUST–Basic Network is undergoing a methodological transition. ANEEL highlighted that the 2025-26 cycle has 0.7 per cent reduction in the average TUST-RB in the consumption segment and a 3.2 per cent reduction in the generation segment.

Brazil's ANEEL initiates public consultation to evaluate AIR report

Brazilian energy regulator, ANEEL, approved the initiation of Public Consultation No. 27/2025 on July 1, 2025, to evaluate the Análise de Impacto Regulatório (AIR) or Regulatory Impact Analysis report. This initiative aims to validate the assumptions and premises adopted in the AIR, potentially guiding revisions to the initial version of the report.

The AIR report stems from the findings of Subsidy Request No. 21/2021, which was initiated to assess the need for regulatory measures aimed at strengthening reliability requirements for transmission infrastructure, thus enhancing the operational security of the Sistema Interligado Nacional (SIN) or National Interconnected System. The report outlines past incidents that had significant impacts on the Brazilian electricity grid, reinforcing the urgency of updating current reliability criteria.

The push for regulatory improvement is further supported by the expansion of Brazil's generation mix, particularly with the growing contribution of renewable generation sources such as wind and solar photovoltaics (PV). These sources have led to increased occurrences of generation curtailment—either due to oversupply without storage capacity, or inflexible supply that exceeds real time demand and the grid's transmission capacity.

The public consultation seeks to gather input from interested stakeholders that may contribute to the development of future regulations, between July 3, 2025 and August 18, 2025.

Brazil's Copel to invest BRL187 million for seven substations in Paraná

Brazilian electric utility company, Companhia Paranaense de Energia (Copel), has announced an investment of BRL187 million for the construction of seven new substations in the municipalities of Brasilândia do Sul, Campo Mourão, Cianorte, Nova Londrina, Santa Mônica, and São Pedro do Paraná, in northwest Paraná. The goal of these transmission projects is to enable regional development by increasing the quantity and quality of energy available to the different sectors of the economy.

Of the seven new substations, the 138 kV Morangueira substation has already been completed to reinforce energy distribution in Maringá; and the other six new substations are under construction and expected to be energised in 2025.

In addition, Copel is planning to invest around BRL89 million for the expansion of 19 substations in northwest Paraná.

Separately, Copel plans to invest BRL452 million in the northwest region, with focus on medium voltage works, expansion of the distribution system, construction of new network interconnections, and installation of equipment to automate the electricity network. Copel has already installed 3,700 km of the 4,300 km scheduled for completion in 2025. The municipalities with the most extensive new network installations include Umuarama (139 km), Iporã (112 km), Paranavaí (111 km), Nova Cantu (105 km), and Mandaguari (101 km).

(BRL1=USD0.18)

Brazil's ONS authorises Engie Brasil to begin operations of Graúna expansion project

Brazil's Operador Nacional do Sistema Elétrico (ONS) or National Electric System Operator, has authorised Brazilian utility Engie Brasil Energia SA to commence operations of the brownfield section of the Graúna transmission project. This project is set to strengthen Engie's efforts to expand its footprint in the country's electricity sector.

With the latest authorisation, four transmission lines of the project totalling 162 km, and two substations, will now be commissioned. Additionally, two new substations and one sectionalising bay are in the early stages of execution.

The larger transmission project entails the installation of 780 km of new transmission lines across the four Brazilian states of Santa Catarina, Paraná, São Paulo, and Minas Gerais. The project was awarded by Brazilian energy regulator, ANEEL, during its Transmission Auction 02/2024, for a 30-year concession period.

Brazil's ANEEL highlights progress in completion of transmission projects

Brazilian energy regulator, ANEEL, has highlighted the positive signs of progress in Brazil's electricity transmission network. Of the 60 contracts for the construction of new transmission lines and substations under ANEEL's supervision, 47 contracts are currently within their contractual deadlines. Of these, 29 projects estimate an average lead time of 550 days, which is a year and a half ahead of the actual contractual deadline.

Earlier in May 2025, ANEEL and the concessionaires of these transmission projects had conducted a series of 24 meetings to assess project status. These concessionaires had won lots in auctions held by ANEEL, in which the winners offered the lowest payment for the construction and subsequent operation of the projects.

In addition, 90 per cent of the transmission project contracts facing delays were signed prior to 2023. Many of the contractors involved have cited

the impacts of the Covid-19 pandemic as grounds for exemption from responsibility for the setbacks.

Argentina announces electricity market reform and regulatory body integration

The Argentine government has initiated the process of deregulating its electricity sector, by unveiling a series of structural reforms, with focus on corporate power purchase agreements, transmission development, and cross-border electricity trade. The aim of these structural reforms is to foster private investment, economic-financial self-sufficiency, and market efficiency.

The structural reform, enacted through Decree 450/2025, modifies key provisions in power sector laws 15,336 and 24,065; and further builds on 2024 Economic Framework law. Under the new electricity sector model, which will be implemented over a 24-month transition period, power distributors and large consumers will be required to procure electricity directly from the wholesale market—bypassing the current centralised mechanism managed by Argentine state-owned wholesale electricity company, Compania Administradora del Mercado Mayorista Electrico SA (CAMMESA).

In addition, the decree allows for private infrastructure initiatives in transmission projects that must maintain open, non-discriminatory access, but can proceed under risk-based private investment models, which include mechanisms for cost recovery. The structural reform has also introduced Junta Federal de Energía Eléctrica (JFEE) or Federal Electric Energy Board, as a new advisory body that will support the executive branch with technical guidance. Further, the country's Ministerio de Economía or Ministry of Economy is planning to launch a single energy sector regulator. Through Decree 451/2025, the ministry has established a new entity that will assume the roles of the Argentina's energy regulator, Ente Nacional Regulador de la Electricidad (ENRE) and the gas regulator, Ente Nacional Regulador del Gas (ENARGAS). The new entity, known as the Regulador Nacional de Gas y Electricidad (RNGE) or National Gas and Electricity Regulator, will be finalised over a 180-day transition period.

The National Gas and Electricity Regulator will be led by a five-member board appointed for five-year terms, with each member selected based on technical and professional expertise in the gas and electricity sectors.

Privatisation of Transener progresses in Argentina expects to close deal in eight months

The Argentine government is advancing with the privatisation of Compañía de Transporte de Energía Eléctrica en Alta Tensión Transener S.A. (Transener), the main electricity transmission company in Argentina managing a national network of around 14,000 km of transmission lines.

The government had initiated the process of full privatisation of the government-owned energy company, Energía Argentina S.A. (Enarsa), through Decree 286/2025 (April 2025), which is in compliance with the provisions of the Ley de Bases y Puntos de Partida para la Libertad de los Argentinos or Law of Bases and starting points for the freedom of Argentines (Ley Bases). It has approved the format for the sale, which is an open national and international public tender.

At present, the process is at this preparatory stage, with an official decision expected to be published soon in the Official Gazette. A resolution from the implementing authorities is now awaited. The Ministry of Economy, together with the Agencia de Transformación de Empresas Públicas or Agency for the Transformation of Public Enterprises, is likely to be responsible for coordinating the process. The expected resolution will initiate the preliminary stages of the privatisation, including asset valuation, drafting of bidding documents, and data rooms development. In the case of an international tender, there will be a minimum of 40 days to submit offers.

The government owns 26.32 per cent of Transener indirectly through Enarsa, which in turn owns 50 per cent of Compañía Inversora en Transmisión Eléctrica SA (Citelec) – Transener's parent company co-controlled with Pampa Energía (a part of privately-owned Grupo EMES). Citelec owns 52.65 per cent of Transener's share capital, including all Class A shares (51 per cent) and 1.65 per cent of Class B shares. The remaining Class B shares are distributed between the ANSES Sustainability Guarantee Fund (19.57 per cent) and floating shares in the Buenos Aires Stock Exchange (27.78 per cent). Citelec also holds a minority stake in Transener Internacional Ltda and Empresa de Transporte de Energía Eléctrica por Distribución Troncal de la Provincia de Buenos Aires Sociedad Anónima (TRANSBA SA), two other companies in the electricity sector.

Through its April 2025 resolution, the government authorised the sale of 100 per cent of its shares in Citelec, through a national and international public bidding process. It expects to raise at least USD200 million from the sale and complete the entire process within approximately eight months.

Argentina launches transmission expansion plan with three private sector projects

The Ministerio de Economía or Ministry of Economy of Argentina has announced the implementation of the Plan Nacional de Ampliación del Transporte Eléctrico or national electric transmission expansion plan, through Resolution 311/2025.

The expansion plan aims to mitigate bottlenecks and strengthen the Sistema Argentino de Interconexión (SADI) or Argentine Interconnection System. It defines the first three strategic transmission projects to be tendered under a concession model to national and international private investors – the Área Metropolitana de Buenos Aires (AMBA) or the Metropolitan Area of Buenos Aires Stage I project, which will improve supply capacity and system reliability in the AMBA region; the 500 kV Río Diamante (Mendoza)–Charlone–O'Higgins transmission line (Buenos Aires), a corridor that will enable evacuation of more renewable and conventional generation from the Cuyo region; and the 500 kV Puerto Madryn–Choele Choel (Río Negro)–Bahía Blanca transmission line (Buenos Aires), which will improve the connection between Patagonia and the main grid.

These three transmission projects to be tendered are part of 16 priority projects defined by Resolution 715/2025, within the framework of the national energy sector emergency declared in December 2023,

and is part of the Plan de Contingencia or Contingency Plan for 2024-26, which identified critical areas of Argentina where the growth in electricity demand was not matched by the necessary infrastructure.

These 16 priority projects were announcedin May 2025, with an estimated investment of USD6.6 million.

In addition, the priority works were defined based on the studies presented, the analyses and recommendations made by the CTE or Electricity Transmission Commission, which included the Asociación de Transportistas de Energía Eléctrica de la República Argentina (ATEERA) or Association of Electricity Transporters of the Argentine Republic, CAMMESA or the Wholesale Electricity Market Management Company SA, Consejo Federal de la Energía Eléctrica (CFEE) or the Federal Electricity Council, Comité de Administración del Fondo Fiduciario para el Transporte Eléctrico Federal (CAF) or the Administration Committee of the Federal Electricity Transmission Trust Fund, and Unidad de Especial Sistema de Transmisión de Energía Eléctrica (UESTEE) or the Special Electricity Transmission System Unit, along with the participation of the Energy Secretariat of the Ministry of Economy.

The current state of the electrical system reveals structural deficiencies that result in bottlenecks and service interruptions. AMBA I, for example, will reduce the need for inefficient generation and improve the reliability of the system in one of the country's main consumer centres, where 40 per cent of the national energy demand is concentrated.

The Energy Secretariat will determine the timing and sequence of the invitations to tender for each.

Unlike previous models, the new scheme is based on a construction concession regime, in which all investment, construction, operation, and maintenance will be carried out by the private sector, at no cost to the government.

With this initiative, the government is promoting the sector's structural transformation with more efficiency, less public expenditure, and greater private sector participation in the modernisation of the national energy system.

Argentina's ENRE publishes request for transmission expansion in Buenos Aires

Argentinian power regulator, Ente Nacional Regulador de Electricidad (ENRE) or the National Electricity Regulatory Entity, through ENRE Note No. 492/2025 has published a request for the expansion of electricity transmission capacity and the issuance of a CCPN in Buenos Aires, submitted by Empresa Distribuidora y Comercializadora Norte SA (EDENOR). The proposed work involves the construction, assembly and commissioning of the new 132/13.2 kV, 160 MVA Polledo substation, which will be integrated into EDENOR's high-voltage network through the existing double-triple circuit, high voltage overhead transmission line (OHTL) connecting the Pantanosa and Aeroclub substations.

In addition, ENRE has issued Resolution No. 493/2025, officially announcing the CCPN request in Mendoza, submitted by Empresa de Transporte de Energía Eléctrica por Distribución Troncal del Comahue SA (Distrocuyo), at the behest of Mendoza Provincial Electricity Regulatory Entity. This project involves the construction of the 220/132/13.2 kV Mendoza Norte transformer station (TS), with two 220/138/13.8 kV, 150/150/55 MVA autotransformers; installation of the 220 kV Cruz de Piedra-San Juan transmission line and its connection with Mendoza Norte TS; and a 132 kV double-circuit overhead line, which is set to connect the planned Mendoza Norte TS with the existing Las Heras TS.

ENRE also issued Resolution No. 486/2025, announcing the request for access to the electric power transmission system in La Rioja, submitted by Transporte de Energía Eléctrica por Distribución Troncal del Noroeste Argentino (Transnoa), at the behest of Arauco wind farm company. This project involves connecting the Arauco photovoltaic solar park to Transnoa's grid by installing a 132/33/13.2 kV, 60 MVA transformer connected to the medium voltage (33 kV) grid.

To disseminate the request, a five-day period has been allotted for public access to the information on the websites of ENRE and CAMMESA, the state-owned wholesale electricity company.

Argentina receives 1.35 GW offers for country's first BESS 500 MW tender

The Ministerio de Economía or Ministry of Economy of Argentina, has received proposals aggregating 1,347 MW for its first-ever 500 MW BESS tender. Launched in February 2025 and known as the Almacenamiento GBA–AlmaGBA, the tender has attracted a total of 27 proposals from 15 companies involving an investment of over USD1 billion. The BESS will be located in the AMBA or Metropolitan Area of Buenos Aires region.

The tender result is scheduled to be announced on August 29, 2025. The winners of the competitive bid will sign contracts with power distribution companies, Empresa Distribuidora y Comercializadora Norte (Edenor) and Empresa Distribuidora Sur S.A. (Edesur), under the supervision of Argentine state-owned wholesale electricity company, CAMMESA. The BESS project is expected to be commissioned within 12-18 months after the signing of the contracts. Once commissioned, the project will improve the reliability of energy supply in the AMBA region.

Chile's CEN publishes plan of measures to strengthen electrical system

The Coordinador Eléctrico Nacional (CEN) or National Electrical Coordinator, has published a plan with measures and recommendations to strengthen the security of the Chilean electrical system. This plan is a result of the nationwide power outage that affected a large part of Chile for around 44 minutes on February 25, 2025.

The event involved a total disconnection of the system from Arica to Chiloé, exposing the system's challenges. In response, CEN made an institutional commitment to transparency, rigorous technical analysis, and immediate, short-, medium-, and long-term actions to reduce the likelihood and impact of similar events in the future. Among the actions already implemented are the inspection of critical facilities, technical audits, proposals for regulatory changes and, in some cases, the instruction of adjustments of technical parameters of generating units where there was evidence that they had operated outside

theestablished regulatory parameters in that and subsequent events.

The latest plan considers a series of strategic initiatives organised in four areas: prevention, containment, rapid service recovery, and continuous learning. These include:

- Incorporation of new technological tools for operational risk detection.
- Increased technical requirements for solar, wind plants, and storage systems.
- Changes to the Plan de Recuperación del Servicio (PRS) or Service Recovery Plan, and strengthening automatic contingency control resources.
- Implementation of preventive technical audits of critical facilities.
- Extension of real-time monitoring with phasor measurement unit (PMU) systems and distributed generation display platforms.

The CEN emphasises that the post-event analysis detected incorrect or poor actions on the part of the system's facilities, which could shape regulatory breaches. This background has been reported to the Superintendencia de Electricidad y Combustibles (SEC) or Superintendency of Electricity and Fuels, as required by current regulations.

This plan is also part of the challenges posed by the energy transition, high penetration of renewable energy, increasing geographical diversification, sustained increase of coordinated companies and generating units, and the digitisation of the system, which requires raising technical and compliance standards in the entire industry.

CEN awards four transmission expansion works in Chile

CEN or National Electricity Coordinator of Chile, on July 14, 2025, awarded four works as part of the bidding process for expansion works of the national and zonal transmission systems.

The tendering process commenced in November 2024 and included 11 works in total. Subsequently, in May 13, 2025, CEN received 15 technical bids, 12 economic bids, and six administrative bids from six companies, for the 11 transmission network expansion works offered under Exempt Decree Nos. 4/2024 and 200/2022 of the Ministerio de Energía or Ministry of Energy. Following the opening of the financial bids on July 2, 2025, four projects were awarded with an investment value of USD49.5 million, resulting in a 36.4 per cent award rate.

The awarded projects include the installation of a reactor at the Nueva Pichirropulli substation, awarded to Tucapel Energia SPA; expansion of the 220 kV Ancud and Calama substations, awarded to Empresa de Transmision Electrica Transemel SA; and the new 110 kV Calama substation, awarded to Sistema de Transmision del Sur SA.

The winners of these expansion works are now required to formalise their acceptance of the awards, and submit the relevant documentation to the Ministry of Energy, the Comisión Nacional de Energía (CNE) or National Energy Commission (CNE), and the SEC or Superintendence of Electricity and Fuels.

Chile's HVDC line project nears final environmental approval process

The environmental approval process of the USD1.48 billion Kimal–Lo Aguirre high voltage direct current (HVDC) transmission project is making progress. Conexión Kimal-Lo Aguirre, the project developer and subsidiary of Conexión Energía [which is equally owned by Chilean Transelec, Colombia's Interconexión Eléctrica (ISA), and China Southern Power Grid International (CSG)], has submitted a second addendum containing clarifications and corrections regarding the project, which is one of the final stages of the project's environmental approval process.

This is in response to the second Informe Consolidado de Aclaraciones, Rectificaciones o Ampliaciones (ISCARA) or Consolidated Report of Clarifications, Rectifications, or Extensions document published by the Servicio de Evaluación Ambiental (SEA) or Environmental Assessment Service of Chile, earlier in February 2025. The first addendum was submitted in 2024.

The transmission line project entails the construction of approximately 1,346-km-long, ±600 kV HVDC line between the Kimal substation in the commune of María Elena, Antofagasta region and Lo Aguirre converter substation in the commune of Pudahuel, Metropolitan region, with a transmission capacity of up to 3,000 MW of clean energy.

The line will be bidirectional, enabling the flow of solar power from north to south during the day, and the return flow of wind and hydroelectric energy from south to north at night. The project entered the permitting phase in 2023. In addition to the progress in the environmental approval process, in December 2024, the Superintendency of Electricity and Fuels approved the admission of electrical concessions for the entire transmission route.

Once completed by end-2029, the project is set to bolster north-south flow of clean energy and further reduce curtailment of solar power generated in Chile's northern region.

Chile's CEN receives 34 technical offers for re-bidding of network expansion works

The CEN or National Electrical Coordinator of Chile, has received 34 technical bids and nine administrative bids for the construction and execution of 32 works aimed at expanding Chile's national and zonal transmission systems. This re-bidding process for these works, which are at various stages of physical construction and in the engineering phase, was launched in August 2024.

The tender covers projects from Exempt Decrees 418/2017, 293/2018, and 198/2019, which are governed by Article 157 of the Sistemas de Transmisión y Reglamento de Planificación de Transmisión or Transmission Systems and Transmission Planning Regulations.

The total reference investment for these projects is estimated at USD138 million, with 22 projects at various stages of physical construction and 10 in the engineering phase. The works include the expansion of substations such as Plantas, Valdivia, Picarte, Cerro Navia, and San Clemente, among others.

The next step is the evaluation of these bids and opening of the economic bids on October 1, 2025, and the publication of the award certificate on October 13, 2025.

Transelec seeks environmental approval for 220 kV expansion project in Chile

Chilean power transmission utility, Transelec SA, has submitted its USD18.78 million, 220 kV expansion project involving the Don Héctor substation and the sectioning of the Nueva Maitencillo–Punta Colorada transmission line, to the Chilean SEA or Environmental Assessment Service, for environmental approval.

The transmission expansion project involves the design, procurement, construction, assembly, testing, and commissioning of infrastructure necessary for the sectioning of the 2×220 kV Nueva Maitencillo–Punta Colorada transmission line, which is owned by Eletrans III – Transelec's subsidiary , as part of the expansion of the 220 kV Don Héctor substation. This project includes sections of the 1.44-km Nueva Maitencillo–Don Héctor and 2.17-km Punta Colorada–Don Héctor lines. The sections will use two aluminium conductor alloy reinforced (ACAR) 900 MCM 18/19 conductors per phase, which corresponds to the conductor used in the current 2×220 kV line between the Nueva Maitencillo and Punta Colorada substations.

The projects seek to comply with the expansion works of the national transmission system, in accordance with Exempt Decree No. 185, which was issued on September 10, 2021, and amended on November 4, 2022, by the Ministry of Energy.

Chile's SEIA receives request for USD90 million Paicaví BESS environmental review

Chile's solar and battery projects developer, Solar Ray, has submitted an environmental review request to Chilean Sistema de Evaluación de Impacto Ambiental (SEIA) or Environmental Impact Assessment System for its 150 MW Paicaví BESS project in the municipality of La Pintana, Metropolitan region. It is set to be installed near the Mariscal substation, which is operated by Chilean transmission company, CGE Transmisión. The project involves an investment of around USD90 million.

This BESS project involves the installation of a battery system to efficiently capture, store, and distribute electrical energy. It also allows electricity to be stored during periods of low demand and then released during periods of higher consumption, further ensuring stability and flexibility of the electrical system. It is set to incorporate storage infrastructure, high-voltage electrical connection works, and substation-related elements.

The construction phase of this project is expected to begin in July 2027, with an anticipated shelf life of around 30 years.

Peru's ProInversión announces tender for four projects worth USD232 million

Peru's investment promotion agency, ProInversión, has announced a tender for the concession of four prominent electrical projects valued at over USD232 million. These projects are part of Group 1 of the 2025-34 Transmission Plan, and are poised to strengthen the supply of electricity in the departments of Piura, Lambayeque, Junín, and Ayacucho. The four projects include:

Construction of 500 kV Miguel Grau–Pariñas Interconnection transmission line and 500/220 kV Pariñas substation, expansions, and associated substations project in Piura region, with an estimated investment of USD81 million. This project aims to increase the evacuation capacity of wind power in Pariñas region.

Construction of 220 kV Felam–Tierras Nuevas–Salitral transmission line, expansions, and associated substations project in Lambayeque region, with an estimated investment of USD70 million. It is an Instalación de Transmisión de Concesión (ITC) or Concession Transmission Facility project, which aims to improve the reliability of 220 and 60 kV transmission in the Tierras Nuevas–Pampa Pañalá and Motupe–Olmos regions.

Construction of new 220/60 kV Palián substation and associated 220 kV and 60 kV connections. This is also an ITC Project in the Junín region, which entails an estimated investment of USD73 million. The project aims to improve the reliability of 220 kV transmission in Huancayo region, with a new injection point.

Construction of 220 kV Muyurina–Mollepata transmission line, expansions, and associated substations is also an ITC project in the Ayacucho region, which entails an estimated investment of USD8 million. This transmission project aims to improve the reliability of 220 kV transmission in the region.

In addition, Group 2 of the 2025-34 Transmission Plan involves the 500 kV Colectora–Bicentenario–Chilca transmission line and associated substations project, 220 kV Tintaya Nueva–Nueva San Gabán line and associated substations project, 220 kV Nueva San Gabán–Puerto Maldonado line and associated substations project, and 138 kV San Román–Yocara–Maravilla (Juliaca) line and associated substations project. The projects involve an estimated investment of USD444 million.

Group 3 (all ITC projects) of the 2025-34 Transmission Plan involves the new 220/138 kV Moche substation and associated transmission lines; 220 kV Miguel Grau–Sullana transmission line, expansions, and associated substations project; 220 kV Miguel Grau–Chulucanas transmission line, expansions, and associated substations project; new 220/50 kV Antuquito Este substation and associated transmission lines project; and 138 kV Nueva Virú-Trujillo Sur transmission line, expansions, and associated substations project.

Further, Group 4 of the 2025-34 Transmission Plan involves the 138 kV Belaunde Terry–Valle Grande transmission line and associated substations project, 138 kV Campas–Yurinaki transmission line and associated substations project, 138 kV Shipibo–Manantay transmission line and associated substations project, new 220/60 kV Viñedos substation, as well as 220 kV Los Héroes–Garita transmission line and associated substations project. These projects involve an estimated investment of USD122 million.

The concessions for these projects will be awarded through the Concurso de Proyectos Integrales or Comprehensive Projects Competition approach. The successful bidder, whose offer reflects the lowest total service cost as outlined in the stipulated terms, will be responsible for the design, financing, construction, operation, and maintenance of the designated projects. The concessions will be awarded for the construction period and 30 years of operation and maintenance, under a self-financing state initiative.

ProInversión, operating in collaboration with the Ministerio de Energía y Minas (MINEM) or Ministry of Energy and Mines, is carrying out these projects under the public-private partnership (PPP) model, as part of Transmission Plan 2025-34.

Peru's MINEM grants definitive concession contract for 220 kV project

The MINEM of Peru, has granted Compañía Minera Zafranal the definitive concession contract for a 220 kV transmission line project, through Ministerial Resolution No. 231-2025-MINEM/DM, which was signed on July 9, 2025.

The transmission project is required to supply power to a mining project located in the department of Arequipa, and includes the installation of the 220/33 kV Zafranal substation, which consists of one 220 kV line bay from the Yarabamba substation, two 220 kV transmission bays, two 220 kV/33 kV, 100/125 MVA three-phase power transformers, a control building with protection, measurement, telecommunications panels, and a 33 kV reactive compensation system. It also includes the construction of a 93-km, 220 kV transmission line connecting the Yarabamba and Zafranal substations; and the expansion of the Yarabamba substation, which consists of a connection to the 220 kV busbar system through a new line bay and a field house with protection, measurement, auxiliary services, and communications equipment. The project will be developed in the districts of Lluta, Majes, Jacobo Hunter, Santa Isabel de Siguas, Socabaya, Tiabaya, Uchumayo, Vitor, Yarabamba and Yura, crossing jurisdictions in the provinces of Caylloma and Arequipa.

The company had submitted its application for the concession to MINEM on October 15, 2024.

XM shares Q2 2025 update on Colombia's transmission network

As per the second quarter (Q2) 2025 update shared by Colombia's grid operator, XM Compañía de Expertos en Mercados SA ESP (XM), for April to June 2025, a total of six transmission projects and 12 generation projects (31.77 MW) were completed in the country to reinforce energy grid.

The six transmission projects that were brought online in Q2 2025 were distributed among the SIN or National Interconnected System (two projects), and the Sistema de Transmisión Regional (STR) or Regional Transmission System (four projects). This includes the installation of two 230/115 kV, 150 MVA transformers to integrate Stage 1 of the 230/115 kV Santa Helena substation; installation of a 110/44/13.2 kV, 60 MVA transformer at the Girardota substation; and installation of a 66/13.8/6.9 kV, 50 MVA transformer in the La Marina SDL substation. Further, the 115 kV Catama substation was operationalised to increase the reliability and quality of electrical service in the department of Meta.

At the end of June 30, 2025, the net effective installed capacity of the system was 20,708 MW. Of the 86 generation projects aggregating 788 MW added during the year, 80 were based on solar (729 MW, including 30 MW added in Q2), one on thermal generation (4 MW), three on wind generation (41 MW), and two on hydro generation (14 MW, including 2 MW added in Q2).

ISA Intercolombia energises 500 kV Copey–Cuestecitas line in Colombia

ISA Intercolombia, a part of Colombia-based energy company ISA and Empresa Distribuidora de Electricidad de Mendoza Sociedad Anónima (EDEMSA), has successfully launched the 500 kV Copey–Cuestecitas transmission line in La Guajira, located in northern Colombia. The transmission line is set to integrate renewable energy, particularly wind power, from the upper Guajira region into Colombia's SIN or National Interconnected System.

The project involved the construction of a 270-km-long, 500/220 kV transmission line, six substation yards, and 722 high voltage towers. The transmission line runs across 17 municipalities and 68 territorial units, connecting the El Copey substation in Cesar department with the Cuestecitas substation in La Guajira. It underwent rigorous technical and environmental assessments, and received the necessary approvals and licences from the relevant authorities. It also included ongoing engagement with local indigenous communities to ensure smooth progress and adherence to cultural and environmental standards.

This transmission line, which comprises a D/C overhead system, has the capacity to connect over 1,000 MW of renewable energy to the grid, and represents a significant step towards achieving the country's renewable energy and energy transition goals.

UPME invites bids for 220 kV Nueva Quibdó substation project in Colombia

The Colombian mining and energy planning unit, Unidad de Planeación Minero Energética (UPME), has invited bids for the design, build, operation and maintenance of the 220 kV Nueva Quibdó substation and associated transmission lines in the municipality of Quibdó, in the western department of Chocó.

The selected bidder will be entitled to a 25-year concession period. Interested entities have until January 20, 2026 to submit their technical proposals and bids, which will be opened by February 3, 2026.

Meanwhile, the bids for a supervisory contract related to the project are due on October 17, 2025, with announcement of the successful bidder scheduled for October 31, 2025.

According to UPME, the project will benefit from an accelerated permitting process featuring reduced bureaucracy and rapid administrative deadlines. The operational deadline for the project is set for December 31, 2030

ANDE presents Master Plan to strengthen Paraguay's electrical system

Paraguayan Administracion Nacional de Electricidad (ANDE) presented its comprehensive Master Plan of works, involving investments across electricity generation, transmission, and distribution, to the Chamber of Entrepreneurs of Ciudad del Este and Alto Paraná at a meeting held on July 30, 2025. This master plan aims to modernise Paraguay's electrical infrastructure, ensure supply of clean energy for all sectors, and bolster economic growth and social development throughout the country. The meeting addressed key topics such as ANDE's commercial

management practices, electricity tariff categories, service costs, and strategies for efficient energy use.

Notably, the Transmission Master Plan 2024-33, released in 2024, outlines a total of 218 transmission and transformation projects, including the construction of 74 new lines, 62 new substations, renovation and expansion of 18 existing lines and 61 substations, and one reactive compensation project at an investment of USD3,313 million. This will result in an addition of 4,469 km of lines and 36,466 MVA of substation capacity during the period. The key transmission projects under the plan include the construction of the 360-km, 500 kV Margen Derecha–Villa Hayes line (circuit 2) (USD215 million) and the 230-km, 500 kV Ayolas–Valenzuela line (USD131 million), among others.

Paraguayan ANDE and JICA plan to collaborate to strengthen national electricity system

Paraguayan ANDE and officials of Japan International Cooperation Agency (JICA) held a meeting on July 3, 2025, to cooperate on the development of electrical infrastructure in Paraguay. The meeting involved discussions on possible new joint initiatives aimed at strengthening the Paraguayan electrical system through the execution of strategic projects with technical and financial support from JICA. It also focused on ANDE's main investment plans, under-construction electrical infrastructure projects for the short, medium, and long terms, which seek to guarantee reliable access to electricity throughout the country.

Earlier in August 2021, ANDE signed a loan agreement worth USD155 million with the Inter-American Development Bank (IaDB) and JICA to finance the 210-km, 500 kV Yguazú–Valenzuela transmission system expansion project. Of this amount, JICA is providing USD85 million. JICA has expressed willingness to provide ANDE with new loan agreements, which entails low interest rates, long repayment terms, and flexible implementation.

Paraguay's ANDE awards 220 kV project contract to Cox

Paraguayan ANDE has awarded a transmission contract for the design and construction of 500-km, 220 kV transmission lines in the Chaco region, to Cox Chile, a subsidiary of Seville-based multinational water and energy company Cox (formerly known as Coxabengoa). This project is set to be developed in conjunction with the Paraguayan company, Los Trigales SA (LT SA), and aims to ensure more reliable electricity supply in the western and northern regions of Paraguay.

This USD64 million transmission line project involves the design and engineering for the supply, installation, and commissioning of two transmission lines.

Cox operates over 30,000 km of transmission lines worldwide, and is promoting a sustainable, resilient, and locally developed electricity grid in Latin America.

ANDE announces bids for USD31 million transmission package in Paraguay

Paraguayan ANDE opened technical bids for the construction of a USD31 million transmission package to strengthen the electrical infrastructure in Cordillera Department. The project involves the construction of the 73-km, 220 kV Valenzuela–Guarambaré transmission line as well as expansion of the Valenzuela and Guarambaré substations. The last date for submission of bids is August 22, 2025.

Previously, ANDE had issued a tender to supervise the construction of the 220 kV Valenzuela–Guarambaré, San Lorenzo–Villa Aurelia and Barrio Molino–Villa Aurelia transmission lines. The last date for submission of bids for this work is July 28, 2025.

Spain's Cox secures concession contracts for solar PV and transmission line in Ecuador

Seville-based multinational water and energy utility, Cox, has announced that it has secured concession contracts for seven PV plants and a transmission line, with a combined worth of EUR600 million from the Ecuadorian government on the side-lines of the Fourth International Conference on Financing for Development (FfD4), a United Nations summit during June 30-July 3, 2025.

The contracts involve the development of 600 MW of solar energy under a concession scheme, which is distributed across seven PV plants (La Ceiba I and II, Mátala, Tocachi, Malchinguí, and Ilapo I and II) located in the provinces of Loja, Pichincha, and Chimborazo; installation of hybrid battery storage with these solar PV projects with a combined capacity of 1,200 MWh; and installation of a 100-km-long transmission line connecting the newly-built PV plants to Ecuador's electricity grid.

These projects represent approximately 18 per cent of the investment planned for Cox's strategic plan, Apollo, which is worth EUR3.2 billion and aims at sustained growth with a focus on its water and energy divisions through 2028.

Cox will begin investing in the eight projects in 2025, with operationalisation scheduled in two phases in 2026 and 2027, respectively.

(EUR1=USD1.15)

Transelectric commences construction of 230/138 kV project in Ecuador

Ecuador's state-owned power company, La Empresa Pública Estratégica Corporación Eléctrica del Ecuador's (CELEC EP) transmission unit Transelectric, has commenced the construction of the 230/138 kV Delsitanisagua–Cumbaratza–Los Encuentros–Bomboiza transmission system project, to bolster the reliability of the electrical service in the province of Zamora Chinchipe and part of Morona Santiago.

The transmission project includes construction of the 138 kV Delsitanisagua–Cumbaratza line and 230 kV Cumbaratza–Los Encuentros–Bomboiza line, besides the expansion of the Cumbaratza substation in Zamora Chinchipe and Bomboiza substation in Morona Santiago. At present, the civil works for the expansion of the two substations are in progress. The metal towers for the transmission lines are in the manufacturing phase, and the conductors and other supplies have already been purchased.

Once complete, the USD44.2 million transmission project is set to guarantee unrestricted transmission of the energy generated by the Delsitanisagua (180 MW), Villonaco (16.5 MW), Sabanilla (30 MW),

and Huascachaca (50 MW) plants, which are located in the south and southeast of Ecuador.

Dominican Republic president inaugurates 345 kV transmission line

The Dominican Republic's president recently commissioned a 128-km, 345 kV transmission line that connects the natural gas generation project of Montecristi (northwest region) with Santiago (Cibao region). This transmission line, worth USD147 million, will provide greater efficiency to the national energy service and stabilise supply of electricity throughout the country's northern region.

The project was developed by a local electric power company, Energía 2000, under an agreement with state-owned transmission firm, Empresa de Transmision Electrica Dominicana (ETED). Spanish Elecnor was responsible for the construction of the transmission line.

The line comprised 321 towers distributed every 400 metres, which will connect the generation projects under development in Montecristi such as the 414 MW Manzanillo Power Land's gas-fired, combined cycle power plant, with the Sistema Eléctrico Nacional Interconectado (SENI) or National Interconnected Electric System. The initiative also included a power switch outlet at the El Naranjo substation in Santiago province.

In addition, the Manzanillo Power Land plant's electrical substation was energised on July 9, 2025.

Dominican Republic's ETED energises 138 kV line at Ocoa-Ocoa Junction

Dominican Republic power transmission firm, ETED, has inaugurated the 24-km, 138 kV transmission line, worth DOP293 million at Ocoa–Ocoa Junction in the southern region of the country. This transmission line is set to strengthen the capacity and reliability of the SENI or National Interconnected Electric System.

This transmission line has 97 supports, 73 galvanised steel lattice towers, and 24 self-supporting metal poles, designed to withstand winds of up to 200 km per hour. It consists of polymer insulators and conductors that allow for a transmission capacity of 140 MW, as well as a 24-fibre optical ground wire (OPGW) guard cable, with a view to developing new optical nodes in the future to improve connectivity and communication in the province of San José de Ocoa. The 138 kV transmission line has replaced an old 69 kV transmission line, which was built in 1981 with wooden poles.

In addition, ETED energised the 128-km, 345 kV Montecristi–El Naranjo line in the northern region of the country. These transmission lines are part of the Transmission System Expansion Plan 2021-35, aligned with the 2030 National Development Strategy.

(DOP1=USD0.016)

Mexican CFE and SENER to invest MXN3.6 billion for diagnosis and work plan in Tabasco

The government of Tabasco, a south-eastern Mexican state, has presented the electricity grid Diagnóstico y Plan de Trabajo or Diagnosis and Work Plan for the state. The plan, presented on July 4, 2025, involves an investment of MXN3.6 billion by Mexican government-owned power company, Comisión Federal de Electricidad (CFE), and the Secretaria de Energia (SENER) or Secretary of Energy of Mexico, to improve the state's electricity system. The state environment agency, Secretaría de Medio Ambiente y Desarrollo Sostenible (SEMADES) or the Secretariat of Environment and Sustainable Development, clarified that the investment planned by CFE for Tabasco will include maintenance, as well as construction of new transmission and distribution infrastructure.

The work plan comprises 34,228 maintenance actions in the 17 municipalities of Tabasco. Further, new infrastructure will be added at 51 existing substations in the Cárdenas, Centla, Centro, Cunduacán, and Nacajuca regions. Of these, two substations are nearing completion in the Coronel Traconis and Luis Gil Pérez hamlets in Cárdenas, and are expected to begin operations in 2026. Notable substations in Centro are the Periférico Sur and Tamulté de las Sabanas substations. In addition, the work plan includes a total of 208,064 activities scheduled from June to December 2025. Of this, 34,228 actions in the 17 municipalities have been completed, representing a 16 per cent progress rate so far. Under CFE's Emergency Lines Program, 68 per cent is already complete, with 502 of the 736 planned actions begun on June 1, 2025 and completing by July 15, 2025. Under the Emergency Substation Program, 269 actions have been completed—exceeding the original plan of 215 and achieving a progress rate of 125 per cent.

(MXN1=USD0.053)

Mexico's CFE plans to modify transmission lines for new Metrorrey subway lines

The Government of Nuevo León has approved the involvement of Mexico's national power utility, CFE, to modify transmission infrastructure for the construction of new Metrorrey subway rail lines, and to carry out electrical works with high social impact.

The initiative involves modification of the existing 16 high voltage transmission lines, and 108 medium and low voltage distribution lines, to allow the construction and operation of lines 4 and 6 of the Metrorrey Collective Transportation System. The modification works will be carried out at the points where the transmission or distribution lines intersect with the subway route or stations, requiring works to modify their location or height, to safeguard the proper operational safety distances and not interfere with the construction or operation of the Metrorrey rail lines. Of the 16 high-voltage transmission lines, one of them enabling the construction of the Y-Griega subway station was completed on June 8, 2025. The remaining 15 are currently in the contracting phase and are slated for execution between July and December 2025.

In addition, CFE is set to provide engineering and oversight for the construction of three 115 kV substations—two of which will be encapsulated and gas-insulated; and three transmission lines—two of these will be installed underground while the third will be an overhead line. These transmission lines will connect the load centres of the new Metrorrey lines to RNT or National Transmission Network, ensuring reliable and sufficient power supply.

These transmission works are also in the contracting phase and are scheduled to be carried out between July 2025 and April 2026.

Mexico's CFE implements reliability measures to strengthen national grid

Mexican state-owned power company, CFE, has implemented six targeted reliability measures aimed at strengthening its RNT or national transmission network, to ensure the continuous and efficient delivery of electricity across the country. These measures are set to minimise outage risks, modernise ageing infrastructure, and enhance operational safety.

The reliability measures include – the replacement of lightning arresters and power circuit breakers, which are designed to protect vital equipment from electrical surges and enable safer system disconnections during faults; upgradation of instrument transformers to improve grid monitoring and bolster the reliability of protection and measurement systems; comprehensive electrical testing of primary equipment to prevent unexpected disruptions and reduce repair costs; maintenance of 125 and 48 voltage battery banks, which are essential for supporting backup systems in case of power interruptions; and thermal imaging inspections of power transformers to detect potential issues before they develop into failures.

These measures form part of a broader strategy to enhance the resilience of Mexico's transmission infrastructure, particularly in the face of rising electricity demand and increasing grid complexity.

Panama's ETESA upgrades SCADA system to strengthen national grid monitoring

Panama's state transmission company, ETESA Centro Nacional de Despacho (CND) or National Dispatch Center, has initiated the replacement of existing equipment and the installation of new software to enhance its supervisory control and data acquisition (SCADA) system.

This upgrade is aimed at improving the responsiveness, monitoring, and control of Panama's Sistema de Interconectado Nacional (SIN) or National Interconnected System. The SCADA system is essential for the real-time, remote supervision and operation of substations and transmission lines across the country.

This modernisation initiative is part of ETESA's broader plan to strengthen technological infrastructure and ensure the reliability of the national grid.

Asia Pacific

China approves 1,000 kV and 750 kV lines in national power development plan

The National Energy Administration (NEA), China's state administration responsible for energy policy, regulation, and promoting efficiency and renewable energy, has officially issued a notice on improving the stability of the power system, and further strengthening the planning and construction of the national power grid main grid. This notice formally incorporates two ultra-high voltage (UHV) transmission projects – the 1,000 kV UHV alternating current (AC) Ganjiang–Gannan project in Jiangxi province and the 750 kV Haixi–Hainan reinforcement project in Qinghai province, into the national power development plan of the 15th Five-Year Plan (2026-30). The projects will be implemented by State Grid Corporation of China (SGCC), China's largest state-owned transmission company.

The Ganjiang–Gannan project includes two 1,000 kV UHVAC transmission lines spanning approximately 600 km, connecting the Ganjiang River to southern Jiangxi. It also includes a new 1,000 kV substation in southern Jiangxi, equipped with two 3 GVA main transformers. Notably, this is the first central China engineering project aimed at upgrading the existing UHVAC ring network to a more robust and efficient structure, marking a significant step in strengthening the region's UHV backbone under the 15th Five-Year Plan. It also strategically supports the secure transmission of electricity from the large-scale Tengger Desert renewable energy base in Inner Mongolia to Jiangxi, and enhances the Fujian–Jiangxi interconnection.

With this project now advancing to preliminary feasibility studies, Jiangxi's UHV infrastructure is entering a new phase. The region, in its pursuit of a modernised and resilient power system, is already making progress on other key grid initiatives, including the Fujian–Jiangxi back-to-back interconnection project and the Tengger–Jiangxi long-distance transmission line, both under feasibility review. Collectively, these efforts aim to enhance grid safety, reliability, and capacity, while supporting China's broader shift toward a green, low-carbon energy system.

The 750 kV Haixi–Hainan reinforcement project aims to address the bottlenecks in clean energy transmission from the region's expanding renewable base. It includes a 1,442-km transmission line and the addition of 12.6 GVA of transformer capacity, significantly enhancing system stability and transmission efficiency.

Haixi Prefecture, the core of Qinghai's clean energy ambitions, already boasts over 10 GVA of new energy capacity. However, existing transmission constraints have hindered the full delivery of the projected 10 TWh annual surplus power from the Qaidam Desert Base. The new project will include three major hubs in Qaidam, Xiangride, and Chaka, boosting east-west exchange capacity by 3 GVA, and enabling full transmission of wind and solar energy along the corridor.

Supported by the NEA and SGCC, the Provincial Energy Bureau is working closely with State Grid Qinghai Electric Power Company, a subsidiary of SGCC, to accelerate project preparation, address early-stage challenges, and ensure timely implementation.

As the country accelerates its transition toward a modern, secure, and low-carbon energy system, the Ganjiang–Gannan and Haixi–Hainan projects will serve as critical nodes in the national UHV backbone, driving regional development.

SGCC's Henan subsidiary conducts safety inspections at ±800 kV UHVDC project

State Grid Henan Electric Power Company, a subsidiary of China's largest transmission company, SGCC, conducted on-site safety inspections at the construction site of the ±800 kV Shaanxi–Anhui ultra-high voltage

direct current (UHVDC) project, which intersects a highway in the Henan province. Leveraging the panoramic monitoring system to oversee critical operational activities, this inspection marked a concrete step toward enhancing safety management and supervision capabilities for UHV construction.

The 8 GW UHVDC project involves the construction of a 1,069-km line starting from the Baotashan converter station in Yan'an, Shaanxi province, and ending at the Hezhou converter station in Hefei, Anhui province, while passing through the province of Henan. This includes the construction of 323-km lines across 672 new iron towers in Anhui, 490 km across 1,002 new towers in Henan (passing through 15 counties and districts in five cities, namely Sanmenxia, Luoyang, Pingdingshan, Zhumadian, and Nanyang), and the remaining line length in Shaanxi. The entire project involves an investment of CNY20.5 billion.

This year, State Grid Henan Electric Power Company has reached a record scale in UHV project construction, comprising one new station, four new lines, and two expansions in total.

The company has faced considerable challenges in managing safety, quality, and construction progress. In response, it – implemented a work plan for implementing SGCC's key measures for all-factor guarantee of UHV project construction and operation, intensified construction workforce deployment, and recruited experts in flexible DC and substation expansion projects to provide technical assistance.

Quality control has been a focal point, with mechanisation rates for substations, overhead lines (OHL), and cables exceeding 95 per cent. To ensure rigorous oversight, key project staff have conducted 386 on-site inspections, while provincial and municipal-level video monitoring centres continue to operate efficiently.

Progress on major UHV projects in Henan has advanced steadily. For the Shaanxi–Anhui UHVDC line, 94 per cent of foundation pouring, 58 per cent of tower assembly, and 30 per cent of line stringing have been completed. The Gansu–Zhejiang UHVDC line in Henan has seen 67 per cent of tower base delivery and 44 per cent of foundation pouring completed. Preparatory work, including construction planning and site readiness for other UHV projects, is progressing in an orderly manner.

Since the start of the year, State Grid Henan has also commissioned 134 transmission projects ranging from 35 kV to 500 kV, encompassing 728 km of lines and adding 7.73 GVA in transformer capacity.

The Shaanxi–Anhu UHVDC project is expected to be completed in 2025-26.

(CNY1=USD0.14)

China's SGCC completes nation's largest 750 kV ring power transmission line

The SGCC, China's largest state-owned transmission company, has completed construction of an extensive 4,197-km, 765 kV UHV energy ring around the Tarim Basin in the Xinjiang Uyghur Autonomous Region, marking a major milestone in the region's infrastructure development. The project, the largest of its kind in the country, is scheduled for full commissioning by November 2025.

The mega project spans an area of 1.06 million sq km across five prefectures, with nearly 10,000 transmission towers and nine substations designed to collect and transform electricity generated from wind, solar, thermal, and hydropower sources. Previously reliant on a 220 kV grid with a 300-km range and 300 MW capacity, Tarim Basin will now benefit from doubled transmission distances and a tenfold increase in capacity to 3 GW. The route traverses harsh and diverse terrain, including the Taklamakan Desert, desert poplar forests, wetlands, and the Kunlun and Tianshan mountain ranges, posing severe logistical challenges. Project teams built roads, installed cableways to transport over 3,000 tonnes of materials, and implemented grass grid systems and permeable fabrics for dune stabilisation.

With renewable energy already comprising over half of Xinjiang's installed energy capacity, the project is poised to enhance long-distance energy transmission and grid connectivity. Construction is underway on secondary transmission lines that will eventually link to the Qinghai and Sichuan provinces, reinforcing China's broader green energy ambitions.

China commissions five major 500 kV projects

China continues to expand its power transmission capabilities with the successful commissioning of five major 500 kV transmission projects across multiple provinces, significantly enhancing regional power supply capacity and supporting the country's summer peak demand requirements. These strategic infrastructure developments demonstrate China's commitment to strengthening energy security and optimising grid resource allocation.

The 500 kV Jiexiu transmission and transformation project in Shanxi province was completed and put into operation on June 25, 2025, marking a crucial milestone for the province's 2025 peak summer power generation strategy. The project features a new 500 kV substation with 2 GVA capacity and an 81.746-km transmission line connecting the 500 kV Huozhou substation in the south to the 500 kV Jinzhong substation in the north. This development significantly enhances power supply capacity in the Jinzhong and Linfen areas, providing critical support for reliable electricity supply in central Shanxi during the summer months.

In Sichuan province, the 500 kV transmission project of the Bala hydropower station was successfully energised on June 30, 2025, completing the final phase of 13 key projects designed to ensure supply during the 2025 peak summer season. The Bala hydropower station, located in Ma'erkang city, Aba prefecture, features a 140-metre high dam, 133.8 million cubic metre reservoir capacity, and annual power generation of 2.553 billion kWh. The facility houses three 240 MW mixed-flow generators and one 26 MW ecological generator, with the transmission project completed four months ahead of schedule. This achievement enables 746 MW of clean hydropower and solar PV installed capacity to be successfully integrated into the Sichuan power grid.

Inner Mongolia's power infrastructure received a significant boost with the commissioning of the Urad Rear Banner 500 kV substation, marking the 58th such facility operational in the Inner Mongolia western power grid. This project represents the successful completion of a 220 kV switch

station voltage-boosting initiative to 500 kV configuration. The new substation creates a high-speed channel for new energy export in northern Bayannaoer, enabling efficient delivery of abundant renewable energy resources through the main power grid. The facility will serve as a collection access point for wind power, PV, and other new energy sources, supporting the development of Inner Mongolia Western power grid's 'four horizontal and six vertical' strong main grid structure.

The Chengdu Qionglai 500 kV substation in Sichuan province was successfully commissioned on June 26, 2025, adding 2.4 GVA of new substation capacity to support peak summer demand and ensure power supply for the Chengdu World Games, which will take place between August 7 and August 17, 2025. With its operation, the Sichuan power grid now operates 68 units of 500 kV substations, including switch stations, series compensation stations, and series reactors.

The project represents 13 of the 15 substations planned under Chengdu's 'three-dimensional double-ring' grid framework, significantly optimising the structure of Sichuan's backbone power grid and enhancing power guarantee capability for the Chengdu load centre.

In Jilin province, the Baicheng Fujia 500 kV power transmission and transformation project was completed and put into operation on June 27, 2025, providing crucial support for the consumption and transmission of 12 new energy projects in the region, while meeting the rapidly growing demand for new energy grid connection and power transmission in the Tongyu area of Baicheng. The project marked a significant technological advancement as the first in China to apply observation-free digital line tightening technology to replace traditional theodolites for sag observation. This innovation effectively addresses the industry's challenging line tightening operations under adverse conditions including strong winds, dense fog, high drops, and multiple split conductor oscillations. The Fujia project represents the third 500 kV transmission and transformation project completed by State Grid Jilin Power in 2025, following the Jilin Lesheng and Qingde projects, with a combined investment of CNY3.08 billion across all three facilities.

These commissioning activities align with China's broader grid modernisation strategy, addressing projected summer peak load increases of over 7 per cent year-on-year in Shanxi and approximately 4 per cent in Sichuan.

The projects collectively demonstrate advanced construction methodologies, including mechanised network closure, visual line laying, and sophisticated safety monitoring systems. State Grid companies across the regions have implemented comprehensive coordination mechanisms, optimised construction organisation, and adopted innovative technologies to ensure high-quality, timely project delivery while maintaining zero-defect commissioning standards.

(CNY1=USD0.14)

CSG begins construction on Chinese section of 500 kV China–Laos interconnector

China's second-largest grid company, CSG, has officially begun construction on the Chinese section of the 500 kV China–Laos power interconnection project, marking a significant advancement in cross-border energy cooperation between the two countries.

As part of a strategic initiative to build a China-Laos community with a shared future, the project will support the Lancang-Mekong Regional Clean Energy Connectivity Centre, a collaborative effort to enhance clean energy development and connectivity within the Lancang-Mekong region, which includes China, Cambodia, Laos, Myanmar, Thailand and Vietnam, by enhancing regional clean energy infrastructure. It includes a 183.5-km, 500 kV transmission line connecting Oudomsenarou in Laos to Xishuangbanna in China, along with two 230 kV lines linking northern Laos' power grid. Once completed, it will enable 1.5 GW of two-way power exchange and transmit around 3 GWh of clean electricity.

The project's Chinese segment includes a 145-km 500 kV transmission line originating in the Dai autonomous prefecture of Xishuangbanna in Yunnan province and extending to Laos, along with an expansion of a 500 kV transformer substation in the prefecture, according to Yunnan Power Grid Company Limited, a subsidiary of the CSG, which is managing the project on the Chinese side.

This power interconnection project follows the successful collaboration on the China–Laos Railway and is part of a broader action plan to build a China–Laos community with a shared future. Once completed, it will support a two-way mutual assistance electricity capacity of 1.5 GW and facilitate the transmission of around 3 TWh of clean energy annually.

Construction on the Laos section commenced earlier on February 26, 2025, with a launch ceremony held in Vientiane. That portion is being developed by Electricite du Laos Transmission Company Limited (EDL-T), a joint venture between CSG and the Laos state-run Electricite du Laos (EDL). The project is expected to begin operations in 2026.

China CSG launches ±500 kV Gaopo converter station for West-to-East power project

CSG, the second largest power transmission utility in the country, has announced that the ±500 kV Gaopo converter station, a key facility in China's West-to-East power transmission initiative, has been successfully connected to the Guiyang district control station in the Guizhou province, and has officially been put into operation. This milestone marks the launch of the country's first AC/direct current (DC) centralised monitoring platform, signalling a major leap forward in the intelligent management of UHV power systems.

With this integration, data from the previously isolated Gaopo converter station is now part of the centralised data pool managed by the Guiyang district control centre. Operated by the Guiyang branch of CSG's UHV company, the platform leverages advanced intelligent algorithms to enhance operational efficiency. The system boosts data utilisation by 400 per cent, improves centralised monitoring efficiency by 90 per cent, and increases fault analysis and handling efficiency by 75 per cent.

This development provides a scalable solution for long-term DC cluster management and significantly strengthens the smart operational capabilities of

China's West-to-East power transmission project. It also sets a new benchmark for the deployment of centralised and intelligent monitoring systems across the nation's power infrastructure.

India completes 48 GW of ISTS network for renewable energy; 159 GW under construction

India has made significant headway in bolstering its renewable energy transmission capacity, with 48 GW of interstate transmission system (ISTS) infrastructure already commissioned to support the evacuation of solar and wind power. Indian Minister of State for Power informed the Rajya Sabha that an additional 159 GW of ISTS capacity is currently under construction, as part of the government's larger plan to install 340 GW of ISTS to facilitate the integration of 230 GW of renewable energy into the national grid. Of the remaining capacity, 21 GW is under bidding, and 112 GW is in the planning stage.

To complement the ISTS expansion, the government is also enhancing intra-state transmission systems (InSTS) under the Green Energy Corridor (GEC) schemes. The GEC-I scheme, with an investment of INR101.4 billion, is being implemented across Karnataka, Madhya Pradesh, Rajasthan, Tamil Nadu, Andhra Pradesh, Gujarat, Himachal Pradesh, and Maharashtra.

The GEC-II scheme, which covers Gujarat, Himachal Pradesh, Karnataka, Kerala, Rajasthan, Tamil Nadu, and Uttar Pradesh, is being executed at a cost of INR120.3 million. States have also been advised to prepare long-term InSTS plans spanning a 10-year horizon to align with future renewable capacity additions.

These transmission upgrades come at a time of surging electricity demand across the country. In June 2025, India's peak power demand reached 243,118 MW, with 242,493 MW being met, resulting in a shortfall of 625 MW. The continued expansion of transmission infrastructure is seen as vital to ensuring energy security and enabling a smooth transition to clean energy.

(INR1=USD0.012)

POWERGRID begins construction on Kudankulam transmission project in India

Power Grid Corporation of India Limited (POWERGRID), India's largest power network company, has commenced construction of a vital transmission system designed to evacuate 2,000 MW of clean energy from units 3 and 4 (2×1,000 MW) of the Kudankulam nuclear power plant (KNPP), under the ISTS framework. The project is being executed by POWERGRID Kudankulam Transmission Limited, a special purpose vehicle (SPV). The foundation stone for the project was laid by the prime minister during an official ceremony held in Tuticorin, Tamil Nadu.

The transmission project involves establishing a 120-km, 400 kV D/C (quad) transmission line to connect the Kudankulam units to the 400 kV Tuticorin-II gas-insulated switchgear (GIS) pooling station (PS); and the installation of two GIS-based line-terminal equipment at the Tuticorin-II GIS PS. The line bays at the KNPP site will be implemented by Nuclear Power Corporation of India (NPCIL). The estimated cost of the project is INR5,480 billion.

The project aims to facilitate the evacuation of clean nuclear power to southern states and Union Territories, including Tamil Nadu, Kerala, Karnataka, and Puducherry, addressing the region's rising electricity demands. The transmission system will play a crucial role in integrating nuclear energy into the national grid, thus enhancing energy security and system reliability.

This transmission project aligns with India's broader energy transition goals and its target of achieving 500 GW of non-fossil fuel-based energy capacity by 2030. By enabling the integration of sustainable nuclear power into the grid, the project supports the nation's commitment to a greener and more resilient energy future.

In December 2024, POWERGRID had emerged as the lowest bidder for the transmission project, which is the first involving nuclear power evacuation awarded under the tariff-based competitive bidding (TBCB) mode. It then acquired Kudankulam Transmission Limited, previously owned by PFC Consulting Limited, a subsidiary of Power Finance Corporation (PFC), in January 2025. Construction of the project is expected to be completed by December 2026.

(INR1=USD0.012)

Hitachi Energy flags off India's first 400 kV ester-filled transformer for POWERGRID

Hitachi Energy has flagged off India's first 400 kV class, 315 MVA rating, three-phase synthetic ester fluid-filled power transformer for POWERGRID, India's largest power network developer. Engineered for future-ready performance, these transformers operate at higher temperatures, support greater load capacities, leading to reduced operational costs, superior energy efficiency, and safety from fire hazards, which could be triggered at that temperature.

The ester fluid-filled transformer stands out as the largest of its kind in India, both in terms of kV class and MVA rating. Developed and manufactured entirely based on Hitachi Energy's Trafostar™ global platform and at the state-of-the-art power transformers' manufacturing facility in Maneja, Vadodara, this ester-filled transformer represents a significant stride toward 'Atmanirbhar Bharat' in the energy sector. It is designed to operate at higher temperatures and handle greater load capacities, delivering enhanced energy efficiency, lower operational costs, and improved fire safety. With a high flash point of 330°C, the ester fluid significantly reduces fire risk while offering a biodegradable, environmentally friendly alternative to mineral oil, making it ideal for use in high-density or environmentally sensitive areas.

Indian APTRANSCO to invest INR120 billion in transmission projects

Transmission Corporation of Andhra Pradesh Limited (APTRANSCO), the state transmission utility of Andhra Pradesh in India, is executing transmission infrastructure projects worth over INR120 billion as part of its comprehensive plan to strengthen the power transmission network, meet growing electricity demand, and ensure uninterrupted power supply across the state.

Of the total investment, INR1,550.4 million has been spent on seven recently commissioned projects, INR81.31 billion allocated for 62 ongoing works, INR36.313 million for five newly awarded projects, and INR36.14 billion earmarked for 31 upcoming works under various government schemes. Among the commissioned projects are the installation of a bus reactor for reactive power management and a 220 kV D/C line from Gunadala to Nunna substations using monopoles. These projects are expected to improve power evacuation and system capacity in regions such as Vijayawada, Visakhapatnam, and Kadapa. The ongoing works include augmentation of interconnecting transformer (ICT) capacity and diversion of 400 kV and 220 kV lines within the Andhra Pradesh Capital Region Development Authority (APCRDA) region.

The Andhra Pradesh chief secretary and special chief secretary for energy emphasised daily field-level monitoring of critical projects and mandated weekly progress reports. Special focus will be given to fast-tracking projects in the APCRDA region due to its strategic developmental importance.

(INR1=USD0.012)

Meghalaya seeks INR22.70 billion funding for transmission grid upgrade

The north-eastern Indian state of Meghalaya has sought INR22.70 billion to modernise its transmission network after the Central Electricity Authority (CEA) approved the state's long-term transmission development plan extending up to 2031-32. The plan aims to modernise the power grid by adding 760 MVA of transformation capacity and 1,090 ckt km of new transmission lines.

The state power minister has urged the Union Ministry of Power to extend financial assistance under the North Eastern Region Power System Improvement Project (NERPSIP), citing the importance of continued central support amidst the state's severe resource crunch and the urgent need to upgrade its outdated transmission infrastructure. The Meghalaya power minister, speaking on the side-lines of the 16th National Power Committee (NPC) meeting held recently in Shillong, also raised concerns over delays in Power System Development Fund (PSDF) approvals. Although the 21st Monitoring Committee had approved PSDF assistance for north-eastern states as a special case—subject to techno-economic evaluation—final approvals remain pending, stalling critical upgrades such as the supervisory control and data acquisition energy management system (SCADA EMS) system. The NPC chairman, who also heads the CEA, was urged to expedite the approval process, warning that the Northeast is falling behind other regions technologically due to persistent funding bottlenecks.

Highlighting the rising cybersecurity threats to the power sector, the minister stressed the need for immediate firewall installations and digital upgrades. The remarks proposed setting up a 132/33 kV substation in Baghmara to address logistical challenges posed by existing 33 kV lines running through forests and elephant corridors. The discussion also acknowledged power supply issues in Ri-Bhoi district, where, despite substantial generation, distribution remains poor. A 132 kV substation is now being developed in Nongpoh to address this gap.

Additional plans include strengthening infrastructure in blackout-prone districts such as South Garo Hills, South West Khasi Hills, and West Khasi Hills. However, it was admitted that large-scale transmission models may not be viable in Meghalaya due to challenging terrain and corridor width limitations. On cross-border energy trade, the power minister ruled out any power exchange with Bangladesh, citing deficits on both sides. To improve rural electrification, the state plans to construct 5 to 10 substations annually to reduce line lengths and enhance local supply—a proposal that has received in-principle support from the chief minister. Addressing industrial concerns in Byrnihat over high power tariffs, it was clarified that tariffs are set by the State Electricity Regulatory Commission and that no formal complaints have been received so far.

(INR1=USD0.012)

CSPTCL energises state's fifth 400 kV grid substation at Dhardehi, India

Chhattisgarh State Power Transmission Company Limited (CSPTCL), an Indian state-owned transmission company, has achieved a major milestone in power infrastructure development with the successful energisation of the state's fifth 400 kV grid substation at Dhardehi in Mungeli district. The substation, along with its associated transmission lines, was completed and energised on July 26, 2025, at an estimated cost of INR1.76 billion.

The new facility is equipped with a high-tech automated operation system and houses two 400/220 kV transformers (each 315 MVA, totalling 630 MVA), two 220/132 kV transformers (each 160 MVA, totalling 320 MVA), and two 400 kV voltage-controlled line reactors (each 50 MVAr). The project was executed by Techno Electric Company Limited, an Indian power-infrastructure companies, selected through a competitive tender, while the associated 400 kV lines are being constructed by Larsen & Toubro (L&T).

At the time of Chhattisgarh's formation in 2000, the state had only one 400 kV substation. With the commissioning of the Dhardehi substation, this number has increased to five. The Dhardehi grid substation is poised to enhance power supply across key regions, including Bilaspur, Bhatapara, Mungeli, Korba, Janjgir-Champa, Ambikapur, and Baloda Bazaar, directly benefiting industries, agriculture, and households. Additionally, the substation will support the transmission of power from CSPGCL's 2×660 MW supercritical thermal power plant. Its direct connectivity to POWERGRID's 765 kV Bilaspur substation will also boost the state's capacity to import power from the central grid, strengthening long-term energy security and grid stability.

(INR1=USD0.012)

Indian APERC unveils draft battery storage regulations

The Andhra Pradesh Electricity Regulatory Commission (APERC) has released draft regulations to formalise the planning, procurement, and deployment of BESS across the state. The move aims to enhance renewable energy integration, strengthen electricity grid resilience, and facilitate large-scale storage participation in the electricity market. The proposed rules cover a wide spectrum of entities, including licencees, generating companies, renewable developers, aggregators, and storage service providers.

This marks Andhra Pradesh's first comprehensive regulatory framework for battery storage, aligning with the state's Clean Energy Policy 2024, which targets over 160 GW of renewable energy and up to 25 GWh of storage capacity. The policy envisions positioning the state as a national 'storage capital'. BESS can be deployed as standalone grid-connected assets, co-located with power plants, integrated into transmission and distribution networks, or used as behind-the-meter systems by consumers. Aggregators will be able to pool smaller battery units to provide critical grid services such as frequency regulation, reserves, voltage support, and black-start capabilities. Projects meant for procurement by distribution companies (DISCOMs) must generally have a minimum capacity of 1 MW and offer at least four hours of energy storage, except in the case of rooftop solar-connected systems. The reverse power flow from lower to higher voltage at various substations must be the criterion for finalising the BESS locations in the distribution system or transmission system by DISCOMs.

Procurement of storage will primarily occur through competitive bidding, with market-based tariffs for third-party providers and regulated tariffs for assets owned by state licencees. The Andhra Pradesh State Load Despatch Centre (APSLDC) will serve as the central authority for generator registration, scheduling, and performance monitoring, including tracking state of charge (SoC) and round-trip efficiency. Meanwhile, APTRANSCO, the state transmission utility of Andhra Pradesh in India, will incorporate BESS in its resource planning, while DISCOMs will identify potential storage sites. All systems must comply with CEA standards, including cybersecurity and battery waste guidelines.

Stakeholders must submit their comments regarding the draft before July 21, 2025.

Indian TPREL signs first BESPA with NHPC for Kerala BESS project

Tata Power Renewable Energy Limited (TPREL), a subsidiary of The Tata Power Company Limited, has signed its first battery energy storage purchase agreement (BESPA) with NHPC Limited, an Indian public sector hydropower company.

The agreement pertains to the development of a 30 MW/120 MWh BESS at a 220 kV substation in Kerala. The project, awarded under NHPC's BESS Tranche-I tender through a competitive bidding process, is intended for the state-owned Kerala State Electricity Board Limited (KSEB), the end user. Aimed at enhancing grid flexibility, meeting peak demand, and supporting renewable energy integration, the system will operate under a 12-year BESPA. It is part of NHPC's broader initiative to develop 125 MW/500 MWh of BESS capacity in the state under a TBCB mechanism supported by viability gap funding (VGF).

This project builds on TPREL's previous implementation of a solar and battery storage system in Rajnandgaon, Chhattisgarh, which consists of a 100 MW solar photovoltaic plant integrated with a 120 MWh utility-scale BESS. The project was delivered under an engineering, procurement and construction (EPC) contract awarded by the Indian state-owned Solar Energy Corporation of India Limited (SECI), and combines renewable energy generation with storage capabilities.

The collaboration with NHPC represents TPREL's entry into the standalone BESS segment, aligning with broader efforts to expand dispatchable clean energy technologies. It also supports progress toward India's target of 500 GW of non-fossil fuel capacity by 2030. With this addition, TPREL's total renewable energy portfolio stands at approximately 10.9 GW, including 5.6 GW of operational capacity (4.6 GW solar and 1 GW wind) and 5.3 GW under various stages of development.

The project is expected to be commissioned within 15 months.

Indian PNC Infratech emerges L1 bidder for NHPC's 1.2 GW solar and storage project

PNC Infratech, an Indian EPC company specialising in infrastructure projects, including highways, bridges, and power transmission, has emerged as one of the lowest (L1) bidders in a major tender floated by NHPC Limited, an Indian public sector hydropower company. The tender scope includes setting up 1,200 MW of ISTS-connected solar power projects integrated with 600 MW/2,400 MWh energy storage systems (ESS) on anywhere-in-India basis, under the TBCB route with a green-shoe option.

PNC has been allotted a 300 MW ISTS solar power project with 150 MW/600 MWh ESS at a quoted tariff of INR3.13/kWh through the electronic (online) reverse action mechanism held on July 15, 2025. The project is expected to be completed within 24 months from the effective date of the power purchase agreement (PPA), and will operate for 25 years thereafter.

(INR1=USD0.012)

Bangladesh clears USD437 million dues to India's Adani Power

Bangladesh has resolved its long-standing payment dispute with India's Adani Power, a part of Adani Group, clearing all overdue bills and removing uncertainty over power supply from the company's coal-fired power plant in Jharkhand.

In June 2025, Bangladesh made a record single payment of USD437 million, clearing past arrears, transmission charges, and all obligations under the PPA. With no outstanding dues, the country has also issued a letter of credit (LoC) covering two months of power payments and extended a sovereign guarantee for all remaining liabilities.

Following this resolution, the Bangladesh Power Development Board (BPDB) has formally requested Adani Power to resume full electricity supply from both units of the Godda plant at the agreed contractual tariff.

The PPA between the two parties was signed on November 5, 2017, under which Adani Power built a USD2 billion coal-fired power plant in Godda, Jharkhand, to supply electricity to Bangladesh. The plant has been operational since April 2023. However, in the wake of the democratic government's fall in August 2024 and subsequent delays in payments, Adani Power halved its electricity supply to Bangladesh on October 31, 2024. Separately, the Bangladesh High Court on November 19, 2024, ordered the formation of a high-level committee to review the agreement. Meanwhile, Bangladesh managed to maintain consistent monthly payments of USD90-100 million over the past three to four months.

The contract review committee has now submitted its findings with no adverse remarks, clearing the path for continued cooperation.

Pakistan's NGC energises two 500 kV transmission lines

The National Grid Company of Pakistan Limited (NGC), formerly known as the National Transmission and Despatch Company (NTDC), has successfully energised the 500 kV K2/K3–Matiari and KE Interconnection (KKI)–Port Qasim D/C transmission lines. The newly commissioned line is designed to evacuate up to 2,200 MW of electricity from the K2 and K3 nuclear power plants near Karachi with an in-out arrangement at the 500 kV KKI substation.

The 102-km D/C, quad-bundle transmission line project establishes a link between the K2 and K3 nuclear power plants, operated by the Pakistan Atomic Energy Commission (PAEC), and the existing 500 kV Port Qasim–Matiari transmission corridor. The project, which was developed at an estimated cost of PKR18.45 billion, will substantially enhance the transmission capacity and operational reliability of the national grid, while enabling the efficient integration of clean nuclear energy into the country's power mix.

The energisation of the transmission line is expected to bolster NGC's grid resilience in the southern zone, supporting regional economic development, job creation, and energy security.

(PKR1=USD0.0035)

Nepal's RPGCL signs grid connection deals with five hydropower promoters

Nepalese National Transmission Grid Company Limited (RPGCL), a government-owned entity established in 2015 to facilitate power transmission for hydropower development, has signed a memorandum of understanding (MoU) to connect five major hydropower projects to Nepal's national transmission grid. The agreement signing ceremony was held on July 1, 2025, in the presence of the Minister for Energy, Water Resources and Irrigation. The move marks a significant step forward in expanding the country's electricity infrastructure and integrating clean energy sources, and will support Nepal in achieving its energy development goals set for 2035.

The projects include:

- 440 MW Tila-1 hydropower project in Kalikot developed by SC Power Company Private Limited.
- 54 MW Mahakali Seti semi-hydropower project in Bajhang built by Surma Sarobar Hydropower Company.
- 72 MW Malumela Seti Peaking hydropower project in Bajhang constructed by Energy Multiple Private Limited of Mata Malika.
- 31.92 MW Upper Mewakhola 'A' hydropower project in Taplejung developed by Surya Holding Private Limited.
- 9.147 MW Super Daraudi hydropower project in Gorkha constructed by Himal Hydropower Private Limited.

The agreements were signed by RPGCL's chief executive officer, and engineers and representatives of the respective hydropower companies.

EVNNPT urges acceleration of four power transmission projects in Phu Tho, Vietnam

The Vietnam Electricity National Power Transmission Corporation (EVNNPT), a subsidiary of state utility Vietnam Electricity (EVN), has called for the acceleration of four critical power transmission projects in Vietnam's northern Phu Tho province, following a recent on-site inspection tour.

Among the projects inspected was the 500 kV Vinh Yen substation and its transmission line, managed by the Northern Power Projects Management Board (NPMB), a unit of EVNNPT. While the substation is nearing completion, transmission line works, such as tower erection and conductor installation, are being held back by unresolved compensation and relocation issues involving ten households in Binh Tuyen commune. The 500 kV Viet Tri substation upgrade, overseen by the Power Transmission Projects Management Board (NPTPMB), aims to double capacity from 900 MVA to 1,800 MVA, and includes significant upgrades to control, metering, SCADA, and fire safety systems; this project remains on track. Also under NPMB's scope is the 220 kV Ba Thien substation and the 220 kV Viet Tri–Tam Duong–Ba Thien line project, which includes the installation of 2×250 MVA transformers (with 1×250 MVA being installed in this phase), the addition of two 220 kV feeder bays at the 500 kV Viet Tri substation, and construction of a 50-km, 220 kV D/C transmission line from the 500 kV Viet Tri substation to the 220 kV Ba Thien substation. A section of the line from tower G32 to G33 is designed as a hybrid with four circuits (2×220 kV and 2×500 kV). However, land clearance delays currently persist for these projects, with only 146 out of 155 foundations and 27 of 76 spans cleared. The fourth project is the 220 kV Nghia Lo substation and its line to Viet Tri, managed by the Central Power Projects Management Board (CPMB), which has completed foundation work, but only six of 96 spans have been handed over due to weather and clearance setbacks.

To overcome these bottlenecks, EVNNPT urged NPMB and CPMB to collaborate with Phu Tho provincial authorities to expedite land handover before the end of July 2025 and called on contractors to mobilise sufficient manpower and equipment. Acknowledging the efforts of the project teams, he stressed that greater urgency is essential to keep the grid enhancement timeline on track and ensure energy reliability for northern Vietnam.

Vietnam's EVN marks progress on 500 kV and 110 kV transmission projects

EVNNPT, a subsidiary of state utility EVN, has successfully completed two significant milestones in its ongoing efforts to enhance the national power grid. On July 12, 2025, EVNNPT completed the upgrade of the 500 kV Ha Tinh substation, increasing its total capacity to 1,400 MVA. This upgrade is expected to strengthen grid stability and meet growing electricity demand in the central region. As part of the project, EVNNPT replaced one of the existing 125 MVA transformers with a new 250 MVA transformer, to improve operational reliability and meet increasing power demand in the region. The Ha Tinh substation serves as a critical node in Vietnam's national power system, enabling electricity transmission between the central, southern, and northern regions. The upgrade supports broader efforts to ensure

energy security and grid stability amid rising consumption and economic growth.

In another development, EVNNPT completed the first conductor installation for the 500 kV Lao Cai–Vinh Yen power transmission line project. The work was carried out on the segment between Tower VT9 and VT16, under package HH1. This section was executed by a local consortium comprising Song Da Installation and Services JSC, PC1 Group JSC, and Dong Anh Steel Tower Manufacturing Company, marking a significant step forward in the project's construction phase. The project involves the construction of a 500 kV D/C transmission line with a total length of 228.92 km and consists of 468 foundation positions for electricity poles. The line would connect the Lao Cai province to the Yen Bai, Phu Tho, and Vinh Phuc provinces, starting from the 500 kV Lao Cai substation and ending at the 500 kV Vinh Yen substation. It also includes the expansion of two additional 500 kV bays at both substations.

Package HH1 includes a total of 51 transmission towers, all located in Lao Cai province. It was the first package within the project to complete foundation construction. Despite facing multiple challenges—such as rough terrain, adverse weather, and delays caused by community concerns over equipment transportation through residential areas—the VT9–VT16 section was completed. The deputy director of Electricity Power Projects Management Board-1 noted that the successful installation of the first conductor was a significant achievement and a morale booster for teams across the project.

The Lao Cai–Vinh Yen transmission line forms part of Vietnam's broader strategy to enhance power transmission capacity in the northern region. The project, which is expected to be energised on August 19, 2025, is critical to improving grid reliability and meeting rising electricity demand, aligning with the country's long-term energy infrastructure goals.

In a separate development, EVNNPT, in coordination with the NPMB, a unit of EVNNPT, and related units, officially launched the construction of the 500 kV Thai Binh transformer station and its associated connecting lines in Hung Yen province. The strategic project aims to enhance the power supply capacity, and ensure safe and reliable electricity delivery to Hung Yen and nearby areas. Once operational, the project will be managed by Power Transmission Company 1. The project is financed by EVNNPT, overseen by NPMB, and situated in Than Khe commune (formerly Bac Son commune, Hung Ha district, Thai Binh province). The new transformer station has a designed capacity of 600 MVA and includes provisions for a second transformer in the future. The connection works involve two 500 kV D/C line sections totalling approximately 1.71 km, linking the Thai Binh substation to a new connection point on the 500 kV Nam Dinh I–Pho Noi line. Additionally, the project includes two 220 kV line sections—one four-circuit and one D/C—with a total length of around 6.07 km, connecting to the 220 kV Thai Binh–Kim Dong line.

The Thai Binh transformer station and connection project is a key component in EVNNPT's efforts to boost regional power infrastructure, especially for Hung Yen and Ninh Binh provinces. It is expected to reduce transformer and line overloads, lower system power losses, and enhance operational stability and efficiency for the national grid. As per the prime minister's directive, the project is scheduled for completion by the end of 2025.

Meanwhile, in southern Vietnam, another EVN subsidiary, Southern Power Corporation (EVNSPC), completed 72 power grid projects of 110 kV during the first half of 2025, including nine that were delayed in previous years due to site and construction challenges. Fifty of these were completed before April 30, 2025, to commemorate both National Reunification Day and EVNSPC's 50th anniversary. The corporation also began work on 40 new 110 kV projects, 22 of them ahead of schedule, to address increased electricity demand during the dry season. With nearly VND7.96 trillion mobilised, EVNSPC has already met 63 per cent of its 2025 disbursement plan and 65 per cent of EVN's net investment target.

In particular, EVNSPC completed two projects ahead of schedule – the Cai Rang (Can Tho city) and Thanh Binh (Dong Thap province) 110 kV transformer projects. Along with that are 14 key projects to release capacity and synchronise with 220 kV stations such as the – 110 kV Giao Long–Phu Thuan line, 110 kV Phu Thuan station, 110 kV Ba Tri–Binh Thanh line, 110 kV Phu Thuan–Binh Dai line, 110 kV Tran De–Soc Trang line, 110 kV outflow from the 220 kV Chon Thanh station (4 circuits), and 110 kV outflow from the 220 kV Duyen Hai station.

Looking ahead, EVNSPC plans to finalise 48 additional 110 kV projects in the second half of 2025. Among these are two key projects, both of which have reached 85 per cent completion and are on track to be finished by July 2025. Together, these developments highlight Vietnam's nationwide momentum in expanding and modernising its power infrastructure to meet rapidly growing demand.

(VND1=USD0.000038)

Australia's NSW government launches SBP scheme for transmission host landholders

The New South Wales (NSW) government has officially launched the strategic benefit payment (SBP) scheme, effective July 1, 2025. Under this initiative, eligible landholders hosting high-voltage transmission infrastructure will receive annual payments equivalent to AUD200,000 per km (in 2022 AUD), distributed over 20 years and adjusted for inflation. The scheme, governed by newly released SBP guidelines, aims to fairly distribute the economic benefits of the state's renewable energy transition to landholders directly impacted by major infrastructure developments.

The SBP scheme has been introduced as part of the government's broader strategy to accelerate the rollout of critical transmission infrastructure, which is essential to support NSW's shift toward renewable energy. Administered under the Electricity Supply Act 1995 (NSW) (ES Act), the scheme mandates that certain transmission operators and distributors make payments to landholders as a condition of their operating licences. Importantly, these payments are separate from, and will not affect, compensation entitlements under the Land Acquisition (Just Terms Compensation) Act 1991 (NSW). To be eligible to receive a payment under the SBP scheme, a landholder must host 'eligible infrastructure' from one of the seven following projects:

- Project Energy Connect (PEC)
- HumeLink

- Victoria–New South Wales Interconnector West (VNI West)
- Main Central West Orana (CWO) Renewable Energy Zone (REZ) network infrastructure project
- Enabling CWO network infrastructure project
- New England REZ network infrastructure project
- Sydney Ring North (Hunter transmission project)

New projects may be included later by the minister administering the ES Act.

The SBP Guidelines, published in the NSW Government Gazette No. 241 on June 20, 2025, outline specific eligibility requirements and calculation methods for payments. Eligible recipients include owners and lessees of various land tenures such as Torrens title land, Western lands leases, and community title land, as well as recognise native title bodies and Aboriginal landholders. The guidelines also detail how the length of hosted infrastructure is to be measured for payment purposes. Stakeholders are advised to seek expert legal or planning advice to understand how the scheme may apply to their specific circumstances.

(AUD1=USD0.65)

Australian Transgrid unveils AUD8.8 billion plan to strengthen NSW grid for renewables

Transgrid, an Australian transmission system operator (TSO) for NSW, has released its final portfolio of system strength solutions for NSW, centred around ten synchronous condensers and 5 GW of innovative grid-forming batteries. The portfolio is designed to ensure the state's power system can safely and reliably operate with up to 100 per cent instantaneous renewables as coal generators retire, delivering an estimated AUD8.8 billion in net market benefits.

The newly published Project Assessment Conclusions Report (PACR) marks the completion of a three-stage regulatory process and confirms Transgrid's preferred solution to maintain power system stability after it assessed over 100 individual solutions. The preferred portfolio includes:

- Ten synchronous condensers on Transgrid's backbone network to provide system strength, inertia, and voltage support
- 5 GW of grid-forming batteries, delivering the equivalent system strength of 17 synchronous condensers
- Modifications to 650 MW of synchronous generators to operate in synchronous condenser mode
- Strategic operation of synchronous generators to address gaps in system strength
- Targeted support for new renewables within the New England and Hunter-Central Coast REZ

These solutions are part of a broader effort to stabilise the grid as 80 per cent of coal-fired capacity retires over the next decade, which traditionally provided system strength. This milestone forms a cornerstone of Transgrid's System Security Roadmap, a 10-year plan to enable secure grid operations with up to 100 per cent instantaneous renewable energy. The report also reveals that accelerating the deployment of synchronous condensers could yield an additional AUD1.2 billion in market benefits, prompting Transgrid to explore fast-tracking options.

(AUD1=USD0.65)

TCV and Transgrid updates delivery schedule and cost for VNI West project in Australia

Transmission Company Victoria (TCV), a subsidiary of the Australian Energy Market Operator (AEMO), has informed landholders that the completion date for the VNI West transmission project has been delayed from 2028 to late 2030. Alongside the revised timeline, TCV is expanding its landholder engagement efforts beyond the original easement boundaries to provide more tailored support and project information. This latest setback threatens Australia's ambitions to double its renewable energy share in the power grid to 82 per cent by the end of the decade, especially as major coal plants like Victoria's Yallourn station are scheduled to close in 2028.

The project cost has escalated significantly from an estimated AUD1.6 billion in 2023 to AUD3.3 billion currently, adding to the woes of several transmission projects in the National Electricity Market (NEM) that have suffered cost blowouts and delays.

In parallel, the Australian TSO for NSW, Transgrid, has announced a revised delivery schedule and updated cost estimate of AUD3.7 billion for the NSW section of the VNI West interconnector, aligning its timeline with the updated delivery plan for the Victorian component of the project. The staged approach will begin with construction of a critical 500 kV transmission link to support the South West REZ, with completion of the first stage scheduled for early 2029 and the second stage, linking to the Victorian border, targeted for completion by November 2030.

The 240-km VNI West project proposes to connect Western Renewables Link (WRL) from a new terminal station north of Ballarat, Victoria, to PEC at a new Dinawan substation between Jerilderie and Coleambally, NSW. The project also involves enhancing PEC's 160-km transmission lines between Dinawan and Wagga Wagga to operate at 500 kV rather than 330 kV. In NSW alone, the project involves about 235 km of 500 kV lines. The line would be unlocking an additional 2,500 MW of renewable energy generation, enough to power 800,000 households. Originally proposed as a key part of the nation-critical project between NSW and Victoria, the project is jointly developed by Transgrid and TCV, a subsidiary of the AEMO.

The mounting opposition from farmers and landowners over the proposed route, coupled with the need for stronger 'social licence', has contributed to the delay. The AEMO stated that revised planning, design, and construction timelines were necessary to allow for extensive landholder engagement and detailed environmental, geotechnical, and cultural assessments. Victorian agency VicGrid also confirmed in May 2025 that both VNI West and the WRL have been impacted by community concerns.

The delay coincides with growing fears that the Australian government's clean energy transition could fall short. Meanwhile, AEMO is preparing to incorporate the delay into its 2025 Electricity Statement of Opportunities report, which is due in August 2025.

Rising transmission costs, up to 55 per cent for overhead lines and 35 per cent for substations, have compounded concerns, along with skills shortages and mounting community resistance. As part of the updated approach, TCV has launched a new land easement and access package for landholders along the project route. The package includes detailed, property-specific information about compensation, project benefit payments, and field survey access terms. Additionally, TCV is designing a programme for non-host neighbouring landowners in line with VicGrid's draft Renewable Energy Zone Community Benefits Plan and is developing a broader social value strategy to guide community benefits funded by the project.

In a separate development, in response to AEMO's procurement process initiated in July 2024 for selection of a development partner for the Victorian component of the VNI West project, five consortia submitted their proposals. The role of the selected partner encompasses finalising the transmission route and design, securing environmental approvals, appointing contractors, and entering into a long-term agreement to construct and operate the transmission infrastructure. Among the contenders are Spain's Acciona and Australian transmission operators AusNet and Transgrid, each submitting independent bids. Iberdrola, in partnership with Capella Capital, has emerged as the leading candidate, ahead of a consortium initially comprising APA Group and EDF; however, APA withdrew from the process on June 16, 2025, leaving EDF to continue independently. The appointment of the final development partner is anticipated in the third quarter of 2025.

(AUD1=USD0.65)

Australian Province Resources unveils HyEnergy HVDC link plan

Province Resources Limited (PRL), an Australian company focused on renewable energy, has unveiled early-stage plans for the HyEnergy HVDC project, a transformative HVDC transmission project that could reshape Australia's clean energy landscape, enabling it to meet its 2030 and 2050 emissions targets.

The proposed 2,800-km HVDC link would transmit more than 20,000 GWh per annum of affordable renewable energy from a 6 GW wind and solar hub in Western Australia's (WA) Gascoyne region to key East Coast demand centres, including South Australia (SA), NSW, and Victoria. The initiative aligns with national emissions targets and the Australian government's 'Future Made in Australia' policy, aiming to position the nation as a global renewable energy superpower. The province has initiated engagement with federal government representatives to take this project forward.

The HyEnergy project builds on over AUD12 million already invested in feasibility studies, environmental assessments, and community engagement. The 6 GW generation capacity will be split evenly between wind and solar, leveraging WA's top-ranked renewable resource region. The HVDC transmission, with a planned 4.15 GW capacity, will utilise proven global technology. The project has secured strong support from traditional owners and local communities, and is considered a nation-building infrastructure proposal. It offers strategic benefits such as enabling future hydrogen and green manufacturing sectors, providing grid stability across time zones, avoiding fossil fuel price volatility, and strengthening energy security, particularly near the defence-sensitive North West (NW) Cape. A second-stage hydrogen facility could enable aviation fuel production, with thousands of jobs anticipated during construction and operations.

With a favourable development landscape, policy alignment, and a phased delivery model integrating firming options like gas, battery storage, or hydrogen, the HyEnergy HVDC link is gaining momentum as a credible, large-scale alternative to nuclear or coal-based power.

(AUD1=USD0.65)

Australian EnergyCo receives EOIs for New England REZ network operator

The NSW government's efforts to advance the state's energy infrastructure have progressed, with six consortia submitting EOIs for the role of network operator in the New England REZ. The appointed operator will be tasked with designing, constructing, financing, operating, and maintaining new transmission lines and related infrastructure, including energy hubs, to connect the REZ to consumers across NSW.

The EOI process, which was launched in May 2025 and closed in June 2025, was led by Australian EnergyCo, and is considered one of the largest procurement efforts in the state's energy sector. EnergyCo, which is responsible for delivering the state's renewable energy zones, had invited 19 parties to proceed to this stage of the selection. The process ultimately attracted six consortia comprising leading energy, infrastructure, and transmission players, as below:

- Aura Networks (Plenary, Alupar, Webuild, FCC Construction)
- Future Energy Networks (AusNet, Pacific Partnerships, GS Engineering & Construction Corporation, Hyundai, Ghella, CPB Contractors, United Group Limited (UGL))
- NewLeaf Energy (Iberdrola, Capella Capital, Gamuda, Samsung C&T, Ferrovial, Genus Infrastructure)
- POWERGRID
- Rezult Networks (ACCIONA Energía (ACCIONA) and Cobra Instalaciones y Servicios (Cobra))
- Verta Energy (EDF Australia)

This project is a key part of EnergyCo's effort to support renewable energy growth in the region, and the chosen network operator will work closely with the former to deliver the infrastructure. The transmission link will enable New England REZ capacity in northern NSW to reach Sydney and the Wollongong, Newcastle load centres in central NSW by Phase 1, and ensure energy security across NSW as coal-fired power stations are retired by Phase 2. The REZ is expected to attract more than AUD24 billion in private investment by 2034. It is part of the NSW Electricity Strategy and included as an actionable project in the AEMO's Integrated System Plan (ISP) 2022 and ISP 2024.

The transmission infrastructure needed to deliver power from the REZ includes two new 500 kV lines between Bayswater near Muswellbrook and the New England REZ, as well as a network of new 500 kV and 330 kV transmission lines, and four new energy hubs to connect future energy generation and storage projects within

the zone to the new 500 kV transmission infrastructure, and a northern connection to link the North Hub with the existing 330 kV transmission line. The transmission lines aggregating 350 km in length will traverse through Dungowan and Tamworth. The transmission towers for these lines will have a maximum height of 80 metres and will be positioned approximately 400 to 600 metres apart from each other.

The EOI stage marks a key phase in a highly interactive and collaborative procurement process, initiated by EnergyCo in March 2025 and designed to ensure transparency, productivity, and value-for-money outcomes. EnergyCo will now assess all submissions and shortlist two to three applicants to advance to the RfP stage later in 2025. The preferred network operator is expected to be appointed in 2027, with construction commencing shortly thereafter.

Phase 1 of the project is scheduled to be completed by September 2028 and Phase 2 in 2033.

(AUD1=USD0.65)

Transgrid accelerates Project EnergyConnect construction in Australia

The Australian TSO for NSW, Transgrid, has announced that the country's largest energy transmission project, PEC, is progressing rapidly with construction now more than 70 per cent complete on the eastern alignment stretching from Buronga to Wagga Wagga. Specialist teams are advancing high voltage transmission line works across the Riverina region, with key infrastructure milestones achieved, including foundation and tower installations, conductor cabling, and major substation developments.

The project comprises a 900-km-long, 330 kV interconnection between SA (Robertstown) and Wagga Wagga in NSW. It also includes a short 220 kV branch line from Buronga in NSW to Red Cliffs in northwest Victoria. In SA, the project spans approximately 206 km from Robertstown to the SA/NSW border and includes the state's first 330 kV substation at Bundey. This is also referred to as Stage 1 of the project. In NSW, Stage 2 of the project includes new substations at Buronga and Dinawan, and upgrades at existing substations at Wagga Wagga and Buronga, as well as around 700 km of 330 kV transmission line divided into eastern and western sections. The eastern section involves building a 375-km, 330 kV line between Buronga and the new Dinawan substation (Bundure), near Coleambally, as well as just over 160 km of 500 kV transmission line infrastructure from Dinawan to Wagga Wagga. The western section includes the new 135-km, 330 kV Buronga–SA border line and upgrades about 22 km of an existing 220 kV transmission line between the Buronga substation and the NSW/Victoria border. The new Buronga substation, set to become one of the largest in the southern hemisphere, will feature five phase-shifting transformers, two synchronous condensers, and four shunt reactors to stabilise the grid and support renewable energy distribution.

PEC is designed to unlock renewable energy projects in SA, NSW, and potentially Victoria. It was introduced as an actionable project under the AEMO's Integrated System Plan in 2020. SA's TSO ElectraNet, and Transgrid, are co-developing the project.

The recent progress on the eastern alignment, which spans 540 km and is being delivered by Transgrid and its construction partner Elecnor Australia, include the following:

- All 1,150 tower foundations have been drilled and poured using more than 53,000 cubic metres of concrete.
- 1,002 out of 1,150 steel towers have been erected, comprising 330 kV freestanding and guyed towers (Buronga to Dinawan) and Australia's first 500 kV Danubio towers (Dinawan to Wagga Wagga).
- HV conductor cabling has been strung across 278 km (out of 540 km) of the alignment.
- At Dinawan near Coleambally, construction of a world-class substation is progressing steadily with major foundation works completed and two 200-tonne synchronous condensers delivered from Europe. These units will be housed in a large-scale machine hall to enhance grid stability.
- The expansion and upgrade of the Wagga Wagga 330 kV substation at Gregadoo have been completed, including 9,500 cubic metres of imported fill, 13 new gantries supported by 83 concrete piles and 272 foundations, and 6,000 hours of testing across civil, mechanical, and electrical systems.

Earlier this year, the 159-km western section of PEC from Buronga to SA and into Victoria, was completed and energised. For the ongoing eastern section, contracts worth AUD255 million have been signed with 325 local and First Nations businesses, alongside education initiatives such as the Legacy 100 training programme and scholarships through Charles Sturt University. Also, ElectraNet officially commenced operation of Stage 1 of the project which includes approximately 206 km from Robertstown to the SA/NSW border and the state's first 330 kV substation at Bundey, in April 2025, marking a significant milestone for SA and the broader national energy transition. The entire project capacity is expected to become operational in 2027.

(AUD1=USD0.65)

DP Energy to develop 1.4 GW wind and BESS project in Queensland, Australia

Irish renewable energy developer, DP Energy, has announced plans to develop the 1.4 GW Windy Plains Renewable Energy Park, to be located approximately 40 km southeast of Julia Creek in McKinlay Shire, Queensland, Australia.

The project will comprise 197 wind turbines, each with a capacity of around 7 MW, and will be supported by a BESS with a capacity of around 500 MW/2,000 MWh. The proposed site offers several advantages, including optimal wind speeds, flat topography, and large land parcels away from residential areas, as well as proximity to the new CopperString transmission line currently being built by Powerlink Queensland, Queensland's TSO.

The project is currently in the feasibility stage, with high-level environmental, cultural heritage, and technical assessments underway. Detailed studies and community consultation will precede the formal approvals process with both Queensland and Commonwealth regulators. DP Energy has already begun early engagement with local stakeholders, including McKinlay Shire Council, Queensland government agencies, First Nations representatives, and nearby landholders.

The Windy Plains Renewable Energy Park is expected to play a key role in supporting Queensland's renewable energy targets and aligns with Australia's national goal of achieving net-zero emissions by 2050. The development also highlights the increasing momentum in the region for large-scale renewable infrastructure, further strengthened by the CopperString project that aims to unlock energy opportunities across northern Queensland.

BID Energy proposes 1 GW BESS project in Australia

Australia-based developer and energy sector advisory, BID Energy Partners Private Limited, has proposed a massive 1,000 MW/4,000 MWh BESS on the Central Coast of NSW, approximately 100 km north of Sydney. The project, named Kiar, has been submitted for assessment under the federal Environment Protection and Biodiversity Conservation (EPBC) Act and is currently open for public comment until July 25, 2025.

The Kiar BESS will span 110 hectares (271.8 acres) and feature rows of enclosed battery modules integrated with power conversion systems. The exact configuration will be determined during the detailed design and EIS process. The construction is anticipated to take 18 to 24 months, with commissioning slated for late 2027 or early 2028. Once operational, the facility is expected to serve the grid for at least 25 years. The BESS will be owned by NSW's TSO, Transgrid, and will connect to the NEM via a 330 kV transmission line that crosses the site.

The Kiar BESS is one of two standalone large-scale energy storage projects BID is developing in NSW, alongside the proposed 400 MW/800 MWh Derringullen BESS near Yass. The former joins a growing list of major battery developments in the region, including the 850 MW/1,680 MWh Waratah super battery by Akaysha Energy, Origin Energy's 700 MW/2,800 MWh Eraring battery, CEP Energy's 1.2 GW Kurri Kurri battery, and Australian Gas Light Company's (AGL) 500 MW/1,000 MWh Liddell project. These assets will support NSW to achieve its targets of 16 GWh of long-duration energy storage by 2030 and an additional 12 GWh of storage by 2034.

In a separate development, Edify Energy an Australia-based renewable energy development and storage investment company, has sought approval under the federal EPBC Act for its proposed Nowingi solar power station in north-western Victoria. The project will comprise a 300 MWac solar PV facility co-located with a 300 MW/2,400 MWh BESS, connected to the grid via Australian energy company, AusNet's existing 220 kV transmission infrastructure. Edify will also develop a dedicated substation for the hybrid facility.

Located within the Mildura Rural City Council Local Government Area (LGA), the Nowingi project marks another significant development in Victoria's renewable energy landscape. The initiative aligns with Edify Energy's growing portfolio of solar and storage assets aimed at accelerating Australia's target of 82 per cent renewable electricity generation by 2030, compared to the 29 per cent contribution at the end of 2024. Construction on the Nowingi project is anticipated to commence in 2026, with completion expected within 18 months.

Australia's Stanwell completes Megapack installation for 300 MW Tarong BESS

The Queensland government-owned energy company, Stanwell Corporation Limited's Tarong BESS, has reached a major development milestone with the full installation of all 164 Megapack 2XL units, supplied by Tesla, an American multinational automotive and clean energy company. Located at Stanwell's Tarong power station in the South Burnett region, the AUD514 million project is now moving toward its commissioning phase. The facility also recently completed the energisation of its two 275 kV power transformers—a key step in the lead-up to operations. Once online, the 300 MW/600 MWh BESS will be able to power approximately 101,000 homes for two hours.

Construction of the Tarong BESS began in August 2023 and is being delivered in two phases. The project has generated up to 80 full-time construction jobs and will create six permanent operational roles. It forms part of Stanwell Corporation's clean energy strategy to deliver 5 GW of energy storage by 2035. Stanwell has signed a 12-year offtake agreement with Tesla for storage services from the site. The project also supports the broader transformation of the coal-fired Tarong power station into a modern clean energy hub.

The Tarong BESS is one of several Tesla Megapack-powered projects underway in Australia. In Queensland, Megapacks are also being installed at the 250 MW/500 MWh Swanbank battery and a 100 MW/200 MWh storage facility near the Kogan Creek coal plant. In WA, a USD220 million Tesla-powered energy storage project is also advancing. Globally, Tesla delivered 9.6 GWh of battery energy storage in Q2 2025, bringing total installations for the first half of the year to approximately 20 GWh.

(AUD1=USD0.65)

New Zealand's Transpower launches consultation for future grid blueprint

Transpower, New Zealand's national TSO, has launched the first in a series of public consultations to help shape a long-term 'grid blueprint' for New Zealand's electricity transmission infrastructure. The consultation, which was launched on July 21, 2025 via an online survey that is open until August 14, 2025, marks a major step in designing a transmission network that supports economic growth and the country's net-zero emissions aspirations through to and beyond 2050.

The blueprint is being developed under Transpower's Te Kanapu initiative, introduced at the end of May 2025. The initiative aims to guide strategic investment decisions in national grid development, ensuring it aligns with future demands in electricity generation, load, and technological advancements. The Te Kanapu is built upon Transpower's 2020 Whakamana i te Mauri Hiko (Empowering our Energy Future) research, and introduces a new process to develop a grid blueprint, which will serve as a comprehensive guide for long-term transmission infrastructure investment. The development process of the report will span from 2025 to 2026, and will prioritise extensive sector engagement and the use of refreshed scenario modelling to establish a robust evidence base for investment.

Transpower's consultation process is designed to gather diverse input from across New Zealand. The initiative positions electricity infrastructure as central

to the country's long-term development goals. The public survey, now live, invites individuals and organisations to contribute to the national planning effort. According to Transpower, collaborative input from all stakeholders who rely on the grid and are involved in the energy sector, is considered essential to ensuring that the transmission network effectively supports growth and electrification.

The final grid blueprint is expected to be delivered in late 2026.

Kazakhstan, Azerbaijan and Uzbekistan launch Green Corridor Alliance

Kazakhstan's grid developer, Kazakhstan Electricity Grid Operating Company (KEGOC), has announced that the joint venture 'Green Corridor Alliance' has been officially registered in Baku, marking a significant milestone in advancing regional green energy collaboration. The new company, established by Kazakhstan, Azerbaijan, and Uzbekistan, will spearhead initiatives in renewable energy development and international cooperation, with the goal of reducing carbon emissions and ensuring sustainable energy supply across Central Asia and the South Caucasus.

This development follows the Strategic Partnership Agreement for Development and Transmission of Green Energy, signed on November 13, 2024 during Conference of the Parties (COP)-29 in Baku by the heads of the three nations. The agreement laid the foundation for regional coordination in green energy projects, emphasising cross-border electricity transmission and large-scale renewable investments. The founding shareholders of the Green Corridor Alliance are the region's key energy players: Azerenerji (Azerbaijan), National Electric Grids of Uzbekistan, and KEGOC (Kazakhstan). Their joint efforts are expected to contribute to an environmentally sustainable future for the region.

KEGOC confirms stable grid operation amid growing power demand in Kazakhstan

Kazakhstan's grid developer, KEGOC, has reported stable performance of the National Electric Grid (NEG) in the first half of 2025, despite a 3 per cent increase in electricity consumption, reaching 61.8 GWh. The report, presented to the Ministry of Energy, confirms a 7.3 per cent rise in energy transmission volumes and highlights ongoing scheduled maintenance at 577 facilities in preparation for the upcoming heating season. These strong mid-year results reinforce KEGOC's ability to pursue a long-term modernisation strategy aimed at strengthening Kazakhstan's energy sovereignty and supporting economic growth.

In line with national development goals, KEGOC is executing an ambitious investment programme focused on upgrading critical energy infrastructure. A major highlight is a historic project to integrate Western Kazakhstan's energy system with the unified energy system (UES) via a 500 kV, 600-km transmission line, connecting all regions for the first time by 2027. Simultaneously, work is underway to boost the North–South transit capacity by 440 MW through upgrades in the southern regions.

The company has also initiated the construction of a DC North–South line to accommodate future large-scale renewable projects and a planned nuclear power plant. Additionally, a new 500 kV digital substation will be built in Astana to establish a second independent power supply centre for the capital. By 2035, KEGOC plans to construct and refurbish over 17,000 km of power transmission lines, aligning with government plans to add 26 GW of new generating capacity.

The company is focusing on developing a more intelligent and adaptable grid to meet future economic needs. To support the stability of the national grid, KEGOC is currently executing eight major investment projects with a total value of KZT2.3 trillion, which form the foundation of Kazakhstan's energy security and are key to driving future industrial growth. In line with national priorities, deadlines for four key infrastructure projects have been accelerated to enhance energy security. The urgency of these infrastructure developments is underscored by forecasts indicating that Kazakhstan may face electricity demand growth of up to 4.8 GW by 2031.

(KZT1=USD0.0019)

Europe

ENTSO-E proposes amendments to ERAA methodology

The European Network of Transmission System Operators for Electricity (ENTSO-E) has published draft amendments to the European Resource Adequacy Assessment (ERAA) methodology, following a formal request from the Agency for the Cooperation of Energy Regulators (ACER) on April 16, 2025.

The ERAA, mandated under the Electricity Regulation (Regulation (EU) 2019/943 recast), is a key tool for assessing resource adequacy across the EU. The original ERAA methodology, adopted by ACER in 2020, also forms the basis for National Resource Adequacy Assessments (NRAAs) conducted by the European member states.

In response to the 2021-22 energy crisis, the Electricity Market Design Reform (EMDR) enacted in July 2024 updated the regulatory framework around resource adequacy, elevating capacity mechanisms (CMs) as structural elements of the European electricity market. The amended regulation tasked the European Commission (EC) with publishing a report in March 2025, reviewing the CM approval process, which noted criticisms regarding the complexity of both the CM process and the ERAA methodology.

To address these issues, the EC requested ACER to update and streamline the ERAA methodology to enhance robustness, facilitate stakeholder implementation, and incorporate lessons learned from prior assessments. ACER subsequently asked ENTSO-E to propose amendments. ENTSO-E's draft revisions reflect insights gained from four ERAA editions and the EC's recommendations.

The proposals are now open for public consultation, inviting stakeholders across the energy sector to submit feedback. A public webinar to discuss the draft methodology is scheduled for August 20, 2025. Following the consultation, ENTSO-E will review inputs, adjust the methodology as appropriate, and submit the final version to ACER for approval or amendment by October 16, 2025.

Consultation launched for mFRR and aFRR implementation framework amendment

ENTSO-E has reported that following all the TSOs approval at the July 1, 2025 meeting, the latter have launched a public consultation on the proposal for amendment of the manual frequency restoration reserve (mFRR) and automatic frequency restoration reserve (aFRR) implementation frameworks, including annexures with terms and conditions (T&Cs) . A stakeholder webinar for the same will take place on July 16, 2025.

The Electricity Balancing (EB) Regulation provides that the T&Cs for balancing service providers remain the responsibility of each TSO. Article 16 of the Manually Activated Reserves Initiative (MARI) Platform Implementation Framework (mFRRIF) and Article 20 of the Platform for the International Coordination of Automated Frequency Restoration and Stable System Operation (PICASSO) Platform Implementation Framework (aFRRIF) set out a process for the identification, consultation, adoption, and implementation of the necessary harmonisation measures.

Pursuant to this process, the first implementation framework survey was conducted in 2023, followed by a second survey in 2024. Based on the outcomes of these surveys, all TSOs jointly identified a shortlist of six prioritised harmonisation needs and submitted them for stakeholder consultation between December 2024 and January 2025. Taking into account the feedback received, the TSOs have jointly developed the common harmonisation proposal, as well as amendments to the aFRRIF and mFRRIF to improve the harmonisation process itself.

ENTSO-E signs new working arrangements with UK TSOs

ENTSO-E has signed new working arrangements (WAs) with the UK's TSOs and operators. This agreement marks a significant step in formalising post-Brexit cooperation between ENTSO-E and British electricity grid operators and owners. The WAs provide a dedicated cooperation platform to address key shared priorities, including security of electricity infrastructure, expanding clean offshore energy planning like the North Sea Grid planning, and enhancing the efficient use of electricity interconnectors between the UK and continental Europe.

While the UK's TSOs are no longer members of ENTSO-E due to Brexit, the WAs provide a pragmatic and forward-looking framework to ensure that strong operational ties and technical dialogue continue.

Great Britain's electricity system operator, National Energy System Operator (NESO), formed on October 1, 2024 by the government with the acquisition of 100 per cent stake in National Grid Electricity System Operator Limited, will represent all British transmission network operators TNOs at coordination meetings with ENTSO-E. The agreement complements the commitments outlined by both governments during the UK-EU Summit in May 2025.

ACER to finalise decision on amendment of intraday cross-zonal gate timings methodology

ACER will decide on whether to amend the methodology governing intraday cross-zonal gate opening and closure times under the Capacity Allocation and Congestion Management (CACM) Regulation, by January 2, 2026. ACER had received a joint proposal from all European electricity TSOs for the same on July 2, 2025.

The existing methodology harmonises rules across EU member states for the opening and closing of trading gates in the intraday electricity market, which facilitates short-term electricity trading on the same day as delivery, enabling market participants to adjust positions closer to real time.

The proposed amendment seeks to reduce the intraday gate closure time from the current 60 minutes to 30 minutes before real-time delivery, while maintaining the existing gate opening time. This change aligns with the 2024 Electricity Market Design Reform's objectives to enhance short-term market efficiency.

Shortening the gate closure time is anticipated to provide market participants with additional flexibility to respond to last-minute fluctuations in supply and demand, bolster integration of renewable energy and flexibility resources, and support TSOs in maintaining system balance and supply security. ACER has opened an online consultation inviting stakeholders to submit comments or questions by September 26, 2025.

ACER suggests greater consistency in European network development plans

EU ACER has published its opinion on the alignment between national and EU-level electricity network development plans (NDPs), identifying areas where greater consistency is needed to ensure grid planning keeps up with Europe's evolving energy objectives.

Every two years, ACER evaluates NDPs prepared by TSOs in each member state, to note how well these national and European plans align, and also identify areas for improvement. Enhancing this consistency is key for timely, efficient and future-proof grid development, and supports broader EU efforts, including the upcoming European Grids Package aimed at modernising electricity infrastructure and enabling a more integrated energy system.

In its latest opinion, ACER has highlighted that there is improved alignment in electricity network planning. However, despite these improvements, significant differences remain between national and European planning efforts. These include misaligned planning cycles, ten-year network development plan (TYNDP) projects not reflected in corresponding national plans, and limited data transparency, all of which may hinder efficient and coordinated grid development. To further improve consistency, ACER suggests that entities responsible for NDPs align national and EU planning cycles on a two-year basis; improve coordination between transmission and distribution system operators; strengthen the role of national regulators by granting them formal approval rights over draft NDPs; consult publicly on early versions of NDPs; conduct more targeted consultations on planning scenarios and cost-benefit analyses; increase transparency around project investment costs; and include projects not managed by TSOs in the planning process, while ensuring proper national regulatory oversight.

Installation of first section of export cable for UK's East Anglia THREE OWF complete

Scottish Power Renewables, the renewable energy subsidiary of the Iberdrola Group in the UK, has completed the installation of the first section of export cable for its 1.4 GW East Anglia THREE OWF. The latter is located in the southern North Sea approximately 69 km from the Suffolk coast.

The cable has been connected to shore at Bawdsey, Suffolk. The electricity generated offshore will travel approximately 147 km from the OWF to the coast. From there, the energy will travel another 37 km by land to the HVDC converter station at Bramford, near Ipswich, using the infrastructure previously developed for East Anglia ONE.

The OWF entails an investment of EUR4.7 billion and will become the Iberdrola Group's largest OWF, with the capacity to supply more than one million homes.

Earlier in July 2025, Iberdrola signed green financing deals for the East Anglia Three OWF for approximately GBP3.6 billion, with 23 banks and the Danish Export Credit Agency (EIFO). The participating banks are: Banco Bilbao Vizcaya Argentaria (BBVA), HSBC, Internationale Nederlanden Groep (ING), National Westminster Bank (NatWest), Sumitomo Mitsui Banking Corporation (SMBC), Mitsubishi UFJ Financial Group (MUFG), Bank of China, Crédit Agricole, CaixaBank, Santander, BNP Paribas, Helaba, Barclays, ANZ, Rabobank, First Abu Dhabi Bank (FAB), ICO, Abanca, Kutxabank, Standard Chartered Bank, Bank of Ireland, and CID. Crédit Agricole CIB and MUFG acted as financial advisors for the transaction, and A&O and Shearman acted as legal advisors to the borrower. The financing consists of senior debt (approximately 70 per cent) and capital contributed by the shareholders (the remaining 30 per cent), and is backed by long-term contract for difference (CfD) and PPAs. Construction has also been supported by a bridge loan granted by MUFG and Crédit Agricole.

The funds raised will be used to cover the onshore and offshore construction costs of the wind turbines, substations, submarine cables, and converter stations. It will also finance the operation and maintenance costs prior to commercial operation, which is expected in the fourth quarter of 2026.

The onshore construction for the OWF began in 2022 and the entire OWF is expected to be completed in 2026.

(EUR1=USD1.16); (GBP1=USD1.33)

UK's National Grid launches partnership to accelerate GBP8 billion substation delivery

The UK's TSO, National Grid, has introduced a new electricity transmission partnership (ETP), a long-term collaborative model designed to expedite delivery of approximately GBP8 billion worth of substation infrastructure across England and Wales. The partnership aligns with National Grid's ambitious RIIO-T3 (Revenue = Incentives + Innovation + Outputs) plan, which envisages up to GBP35 billion investment in the transmission network between April 2026 to March 2031, with substation projects representing a significant portion.

Under the ETP, National Grid expects to award contracts for around 130 substation projects spread across multiple regions. The ETP remodels the utility's engagement with suppliers by awarding regional exclusivity for substation construction work to partners, based on performance and capacity expansion commitments. This approach seeks to strengthen local supply chains, incentivise long-term investment, and foster skills development.

In July 2025, several suppliers were appointed as regional delivery partners and allocated an initial GBP1.3 billion of exclusive work, with contracts to be awarded later. These partners include Balfour Beatty (North-east region), Morgan Sindall Infrastructure (North-west region), Murphy (Southwest region 1, and London and Southeast), M Group Energy (Southwest region 2), and OTW Construction Limited (Central-west). These partners receive first refusal rights on future substation projects within their territories, providing certainty to support growth and capability enhancement.

Two national partners – Linxon, and Burns & McDonnell, will handle substation work outside the regional partners' portfolios.

The ETP complements other National Grid supply chain initiatives, such as the Great Grid Partnership and a HVDC) supply chain framework, collectively aimed at enhancing capacity and resilience across infrastructure construction portfolios.

National Grid may extend the ETP model beyond substations to other network infrastructure, ensuring a consistent and innovative approach to strengthening the supply chain across England and Wales' transmission network.

(GBP1=USD1.33)

UK's NESO opens connections reform evidence submission window

The UK's NESO, formed on October 1, 2024 by the government with the acquisition of 100 per cent stake in National Grid Electricity System Operator Limited, has opened its connections reform evidence submission window.

Energy generation and demand projects with an existing connections agreement can begin submitting evidence to showcase their readiness and strategic alignment with the UK's energy goals. Although the window is open till July 29, 2025, NESO is urging customers to submit evidence as early as possible.

To tackle the connections queue, which has grown tenfold in just five years, NESO is abolishing the first-come, first-served connections approach that has led to unviable and speculative ventures holding up promising clean energy projects that are ready to connect to the grid.

The current connections queue stands at 738 GW, more than four times the clean generation capacity required by 2030. The new assessment process creates a simpler, more transparent, and more timely way for the projects the UK needs to connect to the grid.

Connections reform will open the way for clean power projects to connect to the power grid. It will also help in achieving the government's Clean Power 2030 ambition, which will help unlock up to GBP40 billion per year of private investment in clean power.

(GBP1=USD1.33)

UK's National Grid to begin upgrade work on Bodelwyddan–Quay OHL

The UK's TSO, National Grid, is commencing work to upgrade 30 km of 400 kV OHL in North Wales, between the Connah's Quay substation in Flintshire and Bodelwyddan substation in Denbighshire. The project is part of a series of circuit upgrades taking place across the country which aim to speed up connections to the electricity transmission network and support a secure, affordable and clean energy system. The project does not involve replacing, moving or building any new pylons. Preparatory work began in September 2024 and National Grid expects to complete all works on the project in December 2026.

National Grid has planned an investment of GBP3.2 billion for Wales between 2026-31 to maintain, upgrade and develop the grid network.

(GBP1=USD1.33)

Ireland's CRU publishes PR6 draft determination for EirGrid

Ireland's Commission for Regulation of Utilities (CRU) has published its Price Review 6 (PR6) draft determination for the country's TSO, EirGrid. EirGrid is responsible for balancing electricity supply and demand every minute of the day from the National Control Centre, while also planning for Ireland's long-term electricity needs. Its costs are approved and overseen in five-year periods through the CRU's price review process.

As part of this process, it submitted a plan for the PR6 period of 2026-30 against a backdrop of objectives laid down by the government and the CRU. The PR6 Investment Plan for EirGrid and ESB Networks (transmission asset owner) forecasts expenditure across 369 projects. It is anticipated that the onshore network plan will deliver 876 km of upgrades to existing lines, 181 km of new OHLs, the replacement of 55 km of underground cables (UGCs) with 319 km of new UGCs, and 40 new/expanded substations. The offshore plans include the purchase of transmission infrastructure from private developers in the case of East Coast Phase 1 projects (the initial phase of offshore wind farm connections to the Irish electricity grid, focusing on projects off the east coast of Ireland), getting the internal systems and business 'offshore ready' for the ownership and operation of offshore transmission assets, as well as the construction of offshore transmission assets on the South Coast Phase 2 projects.

The Celtic Interconnector between Ireland and France is expected to be in operation within the PR6 period. As such, the Celtic Operational Readiness Programme of work is also a key focus area under EirGrid's PR6 Business Plan. The CRU's draft determination is now open for consultation which will befollowed by their final decision on the framework and costs in 2025. EirGrid will engage with the CRU on its draft decision extensively through the consultation period.

Ireland's EirGrid to begin surveys for Offshore South Coast project

Ireland's TSO, EirGrid, will shortly begin the marine and coastal surveys for its 'Powering Up Offshore South Coast' project. The latter aims to deliver the grid transmission infrastructure needed to connect 900 MW of OSW generation to onshore grid connection points along Ireland's south coast. The surveys will be conducted by The Netherlands-based offshore and onshore geotechnical and survey services company, Fugro, which was awarded a significant marine survey contract under EirGrid's offshore marine survey framework.

The project's transmission infrastructure will include two offshore substation platforms – to be located within Maritime Area A, also known as Tonn Nua of the South Coast–Designated Maritime Area Plan (SC-DMAP)—Ireland's first forward spatial plan for offshore renewable energy.

The following supporting infrastructure will then be required in the Cork and Waterford/Wexford counties located in the province of Munster, south of Ireland:

- Offshore transmission cables connecting the offshore substations to landfall locations.
- New onshore substations.
- Connections between landfalls and new onshore substations by UGCs.
- Loop-in connections to the existing electricity transmission network from the new substations by either UGCs or OHLs.

Following the successful application of EirGrid's maritime usage licence from the Maritime Area Regulatory Authority (MARA), the surveys will commence in July 2025 and complete by September 2025.

Ireland publishes updated NDP with EUR3.5 billion allocated to grid infrastructure

The Government of Ireland has published the updated NDP 2025, which sets out total investment of EUR275.4 billion between 2026 to 2035.

The NDP will provide for the provision of up to EUR3.5 billion in new equity to support investment in electricity grid infrastructure over 2026-30. Around EUR2 billion will be provided to Ireland's TSO, EirGrid, and EUR1.5 billion to ESB Networks (transmission asset owner). This equity will enable both companies to significantly increase capital investment to expand electricity transmission and distribution network infrastructure. The investment will support the increased capital investment outlined in EirGrid's PR6 investment plan, which is currently under consultation with Ireland's CRU.

(EUR1=USD1.16)

German Baltic Eagle OWF achieves full energisation

The 476 MW Baltic Eagle OWF, located 30 km to the northeast of Rügen Island off the coast of Pomerania (Germany) in the Baltic Sea, has been fully energised.

The Baltic Eagle is the first project completed under the strategic partnership of Spanish power utility Iberdrola, and Abu Dhabi's leading energy company Masdar. It will supply around 475,000 households with renewable energy, while reducing carbon dioxide emissions by about 800,000 tonnes per year.

TenneT secures planning approval for final section of 525 kV SuedOstLink

Dutch-German TSO, TenneT, has received the planning approval decision from the country's energy regulator, Bundesnetzagentur (BNetzA) or Federal Network Agency, for the final section D1 of the SuedOstLink (SOL) HVDC UGC, spanning approximately 55 km between Pfreimd and Nittenau in the Schwandorf

district of Bavaria. This approval completes the extensive multi-year planning and permitting process for the entire SuedOstLink connection, which extends around 540 km from Wolmirstedt in Saxony-Anhalt to the Isar River in Bavaria.

The planning documents for this and two other project sections were submitted under the EU Emergency Regulation, enabling TenneT to accelerate the approval process ahead of the regulation's expiration in June 2025. The Emergency Regulation's role will be succeeded by the national implementation of the EU Renewable Energy Directive (RED III).

Construction on section D1 began in early 2024 following an early construction approval. Progress is also advancing on the other five sections under TenneT's responsibility. Approximately 50 km of cable conduits have been installed, with closed crossings such as the Regen crossing already underway. Initial cable laying has been completed near Hof, Bernhardswald, and the Isar converter site. Above-ground facility construction, including cable section stations, fibre optic intermediate stations, and the first converter, is proceeding on schedule. SuedOstLink is expected to contribute significantly from 2027 onwards by efficiently transmitting wind power from northern and eastern Germany to southern regions, supporting energy security and the transition to renewables.

The SuedOstLink project comprises two parallel DC links as defined in the Federal Requirements Plan: Project 5, running from Wolmirstedt to the Isar near Landshut with commissioning targeted for 2027; and Project 5a, extending from Klein Rogahn in Mecklenburg-Western Pomerania to the Isar, planned for completion in 2030. Both links offer 2 GW capacity and are jointly implemented by TenneT and another German TSO 50Hertz, with the latter managing sections in the new federal states, and TenneT overseeing Bavaria – the largest state in Germany. The Bavarian segment will be constructed entirely underground, laying four cables in two parallel trenches over approximately 270 km. The SOL project is designated as a EU project of common interest (PCI).

German BNetzA publishes initial planning approval application for SuedOstLink+

Germany's energy regulator, BNetzA or Federal Network Agency, has published the initial planning approval application for Section F of the 525 kV HVDC SuedOstLink+ connection. The submission, made by German TSO 50Hertz Transmission GmbH in June 2025, covers this section, running from Mechau in the town of Arendsee to the Börde district.

Under Section 19 of the Network Expansion Acceleration Act, affected public interest groups, recognised environmental organisations, and members of the public are invited to submit comments, statements, or objections regarding the project, its documentation, and the proposed main route. Submissions can be made online, via email, or in writing, with the consultation period open until August 29, 2025.

The proposed 525 kV HVDC connection is necessary for secure network operation, and to make the increasing amounts of electricity generated in the north from renewable sources available safely and efficiently to all consumers in Germany.

German Amprion begins BalWin1 and BalWin2 works in coastal waters

German TSO Amprion GmbH's subsidiary, Amprion Offshore GmbH, has commenced construction work for the submarine cable-laying of the BalWin1 and BalWin2 offshore grid connections in the coastal waters of Lower Saxony, and onshore between the coast and the Osnabrück area.

The horizontal directional drilling (HDD) works to cross the island of Norderney marks the start of construction for the two projects, connecting North Sea wind farms with the onshore transmission grid. This method involves inserting cable protection pipes into the drilled channels, into which the DC cables are then pulled. Amprion will drill a length of approximately 1,100 metres from the centre of the island southward to the mudflats.

Amprion is using an officially specified construction window between July and September 2025 for the construction work. In 2026, the drilling will continue northward from the centre of the island, before finally crossing under the mainland dike near Hilgenriedersiel in 2027.

The BalWin1 and BalWin2 offshore grid connection systems have a capacity of 2,000 MW each, which correspond to the combined needs of approximately 4 million people. The projects are scheduled to go into operation in 2030 and 2031 respectively.

German BNetzA issues planning decision for northern section of Südharz grid connection

German TSO, 50Hertz Transmission GmbH, has received the planning approval decision from the country's energy regulator, BNetzA or Federal Network Agency, for the northern section of the 380 kV Südharz grid connection. The planning approval decision for the southern section of the project between the substations of Wolkramshausen near Nordhausen and Vieselbach near Erfurt, was received in March 2025.

The existing sections run approximately 90 km in an east-west direction from the Halle area in Saxony-Anhalt to Nordhausen in Thuringia, and then approximately 65 km in Thuringia from north to south towards Vieselbach near Erfurt. The Südharz grid connection will replace the existing 220 kV OHL with a more powerful 380 kV OHL, which will increase the current-carrying capacity to 4,000 amperes per three-phase system. The project will significantly unburden the existing connection between Bad Lauchstädt and Vieselbach. It will also involve additional work on the substations (also known as grid connection points) along the line. A new grid connection point is being built near Querfurt (Saxony-Anhalt), directly adjacent to the motorway, in the Schraplau and Obhausen districts.

Commissioning of the project is expected in 2028. The old line will then be dismantled, as it will still be in use until the new line is commissioned. The project has been listed as Number 44 in the Bundesbedarfsplangesetz (BBPIG) or Federal Requirements Plan Act.

German Amprion reinitiates planning approval for Kühmoos western grid connection

German TSO, Amprion GmbH, has resubmitted its planning approval application for the western grid connection to the Kühmoos grid node near Rickenbach. The plan includes installing an additional 380 kV circuit, erecting three new power poles, and dismantling seven existing ones. This reconfiguration will separate previously intersecting lines, thereby enhancing grid reliability in the region.

The company will hold a public consultation hour at Rickenbach Town Hall on August 7, 2025 to present the planning approval documents and address stakeholder questions.

The project forms part of a joint effort between Amprion and the other German TSO TransnetBW to modernise this grid node, including redesigning the western grid entry to the Kühmoos substation. This upgrade is a component of Amprion's broader Kühmoos–Maximiliansau grid reinforcement initiative within the federally approved Bürstadt–Kühmoos project (Project P310 in the Network Development Plan). Following substantial project modifications, Amprion withdrew the previous planning approval procedure in coordination with the Freiburg Regional Council (Regierungspräsidium Freiburg), and has now initiated a new approval process.

Germany's EnBW proposes 400 MW/800 MWh battery storage project

German energy company, Energie Baden-Wurttemberg AG (EnBW), has presented plans to the Philippsburg municipal council for BESS at the Philippsburg energy park. The project envisages a 400 MW power output and 800 MWh capacity, sufficient to supply the daily electricity needs of approximately 100,000 households. Located adjacent to the dismantling site of two nuclear power plant (NPP) blocks decommissioned since 2017 and 2020, the storage system will leverage existing grid infrastructure, including a nearby DC converter substation built by TSO TransnetBW as part of the Ultranet HVDC line project. This converter facilitates the transfer of wind power from northern Germany to the southwest.

The BESS will capture surplus electricity generated by renewable sources such as wind and solar, storing it for later release to balance supply and demand fluctuations. The project is planned to proceed without government funding, relying on revenues from electricity sales and grid services. Its integration into the existing energy park infrastructure simplifies implementation compared to greenfield sites. While the project is in early stages, with building permits and EnBW's final investment decision pending, commercial operation by the end of 2027 is feasible.

German 50Hertz and British VIRTUS sign connection construction contract for data centre

German TSO, 50Hertz Transmission GmbH, and British data centre operator VIRTUS, have signed a connection construction contract for a new data centre in Wustermark near Berlin. The VIRTUS Data Centre Campus in Wustermark covers an area of more than 350,000 square metres. With an investment volume of EUR3 billion, this is one of the largest data centre projects in Europe.

50Hertz will establish the connection to the 380 kV high voltage grid and expand the Wustermark substation for this purpose. The expansion includes the construction of two-line switchgear bays for the n-1-secure connection of the data centre, as well as a second 380 kV bus coupler. The grid connection will have an installed load of 300 MW. The connection of the Wustermark substation to the Nordring Berlin OHL and several nearby wind farms, contributes to supplying the large-scale project with green energy.

In the future, the data centre will be reliably supplied with electricity around the clock via the substation. The investment volume for these construction measures amounts to around EUR16 million. VIRTUS will also construct its own substation, which will be connected to the two new switchgear bays in 50Hertz's Wustermark substation.

(EUR1=USD1.16)

German Amprion launches market research for harnessing waste heat from converters

German TSO, Amprion GmbH, has launched a market research process for waste heat utilisation, under which the converters for the BalWin1 and BalWin2 offshore grid connections will be the first pilot projects. BalWin1 and BalWin2 HVDC grid connection systems will connect OWFs in the German North Sea to the onshore transmission grid in German Lower Saxony and North Rhine-Westphalia respectively. Each project can transmit an output of 2,000 MW. BalWin1 is scheduled to enter service in 2030 – one year earlier than originally planned, whereas BalWin2 is expected to be commissioned by 2031.

As per Amprion's calculations, the pilot projects could generate an average energy yield of around 30 to 40 GWh per year per converter. This corresponds to the average heat demand of approximately 4,800 to 6,500 people. According to the grid development plan, Amprion will build 19 more converters by 2045, which will, in principle, be eligible for waste heat recovery in the future. However, heat extraction at each location is project-specific and depends on many factors – not least the actual offshore wind situation and the resulting electricity volumes generated at the converter. Amprion will launch a market research process to identify the demand and potential requirements for waste heat utilisation. Interested parties can apply until September 30, 2025. The tender for the waste heat utilisation project is planned for the end of 2025.

Spain's Red Eléctrica completes the commissioning of Ibiza South Axis

Spanish TSO, Red Eléctrica – a subsidiary of Redeia, which owns and operates the Spanish electric transmission system, as well as operates in the global energy and telecommunications sectors, has commissioned the new 132 kV, 4.7-km underground line between the Ibiza and Bossa substations. Together with the new Sant Jordi 132 kV substation and other related repowering or voltage-shifting projects on existing lines, this line constitutes the main infrastructure of the Southern Axis – a set of projects for Ibiza's transmission network that reinforces the security and quality of supply to the island, and allows progress in its energy transition.

In another development, Red Eléctrica completed the 220 kV Calera y Chozas substation at an investment of EUR10.8 million. The substation consists of nine positions and also includes an OHL connecting it to the transmission grid via the 220 kV Almaraz–Talavera power transmission line.

(EUR1=USD1.16)

Belgian ETB's Brabo project to be completed in 2026

Elia Transmission Belgium (ETB) has announced that its Brabo project will be completed in 2026, after almost a decade of work. ETB recently completed a major milestone on this high-voltage project with the installation of pylon number 58. This is the final step in the construction of the new grid segment, which is expected to be operational by early 2026. Once complete, the network will significantly boost power capacity for the Port of Antwerp's growing industrial needs.

ETB has been working on the project since 2016. The EUR300 million project has been implemented in three phases. Brabo I involved the existing electricity grid between Doel and Zandvliet being strengthened (upgraded from 150 kV to 380 kV). A phase-shifting transformer (PST) was built in Zandvliet that optimises electricity exchanges between Belgium and the Netherlands. In 2018, Brabo II was started and, in addition to the construction of five new 150 kV cable connections, the OHL between Zandvliet and Liefkenshoek was also upgraded.

Brabo III is the final phase of the project. In 2023, the construction of two 150 kV UGC connections began, so that the existing OHL between Liefkenshoek and Kruibeke could be dismantled and rebuilt with stronger pylons and lines that could transfer more capacity. Across a distance of 18 km, 58 pylons have been replaced within an existing corridor, as a result of which these OHLs can carry up to 20 per cent more electricity. This reinforcement work is necessary, because the electricity demand in the Port of Antwerp region will double over the next ten years. The port itself is Belgium's largest industrial cluster and will account for 50 per cent of the expected increase in electricity consumption due to electrification. More and more industrial players are switching from fossil fuels – such as oil or gas – to production processes that rely on electricity.

(EUR1=USD1.16)

Italy's Terna presents 2025-34 development plans for Sicily and Puglia regions

Italy's TSO Terna SpA, has presented the electricity grid development plans for the Sicily and Puglia regions for 2025-34. The TSO manages over 4,500 km of high-voltage and extra-high voltage (EHV) power lines and 81 electrical substations in Sicily, and over 4,000 km of high-voltage and EHV power lines and 61 electrical substations in Puglia. Terna has allocated EUR3.5 billion for Sicily and EUR3.2 billion for Puglia, making these the largest and second largest volume of investments respectively, of all Italian regions.

The electricity grid in the Puglia region has a primary transmission system consisting of two 380 kV backbones between the substations of Foggia and Galatina, with other 380 kV power lines connecting the Puglia electricity grid to those of its neighbouring regions, as well as to the Greek grid via the connection known as GR.ITA. Key among the main projects planned for the region is the Adriatic backbone, which will connect Foggia and Forlì, strengthening the Adriatic corridor for energy transport and enabling a substantial increase in exchange capacity. The power line will use HVDC technology and will allow better integration of the renewable capacity expected in the coming years.

The Sicilian electricity system is currently based mainly on three 380 kV transmission lines – Chiaramonte Gulfi–Priolo, Paternò–Chiaramonte Gulfi, and Paternò–Sorgente, and a 220 kV ring which serves a dual function: transmitting energy, and powering the distribution grid. Against this backdrop, the ten-year plan proposes a long-term strategy to boost the resilience of the grid, and guarantee increasingly secure and reliable operation.

In Sicily, one of the most significant elements of the plan is the Tyrrhenian Link, which involves the construction of two 500 kV DC submarine power lines, involving 970 km of cable and a transfer capacity of 1 GW for each of the two branches, the eastern branch stretching for around 490 km, connecting Sicily to Campania, and the 480-km western branch linking Sicily to Sardinia. In May 2025, installation of the submarine cable for the eastern branch was completed.

Among the planned projects are two new 380 kV power lines: Chiaramonte Gulfi–Ciminna and Caracoli–Ciminna. The 172-km Chiaramonte Gulfi–Ciminna project will be the first EHV interconnection in the western part of the island, and will increase energy exchanges between the different areas of the region. Terna started construction on the EUR440 million connection during the month which is anticipated to last approximately 48 months.

The Caracoli–Ciminna line, on the other hand, will connect the new internal backbone to the Tyrrhenian Link, increasing the security of electricity supply in western Sicily. In support of these projects, the grid will also be upgraded to 220 kV with the construction of the Partinico–Fulgatore power line.

Projects currently under construction in the Sicily region include the 63-km Paternò–Pantano–Priolo line in eastern Sicily. Work is also set to begin shortly on the 150 kV Messina Riviera–Messina Nord UGC, which will help to reduce the risk of power outages caused by extreme weather events, and to increase grid security. Another key project is the Bolano–Annunziata connection, a 380 kV AC submarine power line, to connect Sicily and Calabria. The line was authorised by the Italian Ministero dell'Ambiente e della Sicurezza Energetica (MASE) or Italian Ministry of the Environment and Energy Security, in late 2024, and will increase the interconnection capacity between the island and the mainland to 2 GW, while supporting the integration of renewables and strengthening the grid in southern Italy.

(EUR1=USD1.16)

Italy's MASE approves Terna's EUR13 million 220 kV UGC in Naples

The Italian Ministero dell'Ambiente e della Sicurezza Energetica (MASE) or Ministry of the Environment and Energy Security, has authorised the Italian TSO, Terna SpA, to construct a new 220 kV underground line in Naples, involving an investment of approximately EUR13 million.

The new line will extend around 5 km, connecting the Doganella and Poggioreale primary cabins—both owned by the local distribution company—to the national electricity grid. This infrastructure will strengthen grid meshing and enhance transmission system security in the eastern part of Naples, improving power flow distribution.

The underground route will largely follow existing corridors, crossing Naples' fourth and sixth municipalities, and the Poggioreale industrial area. The cable will utilise cross-linked polyethylene (XLPE) insulation technology, ensuring high reliability and sustainability.

The project aims to enhance the efficiency and sustainability of energy transmission through modernisation of cable connections. Its timeline covers approximately 24 months, encompassing detailed design, material procurement, construction, and commissioning.

This initiative forms part of a broader plan to modernise Naples' metropolitan electricity grid. It aligns with the 2020 Collaboration Agreement between Terna and the Municipality of Naples, coordinated by the Permanent Technical Committee chaired by local authorities.

(EUR1=USD1.16)

NPC Ukrenergo signs MoU with Italy's Terna

Italy's TSO Terna SpA, and its Ukrainian counterpart NPC Ukrenergo, have signed a MoU to support the exchange of experience and advanced technologies in power

system operations. The signing took place in Rome as part of the Ukraine Recovery Conference 2025 on July 10, 2025 and aims to strengthen Ukraine's integration into the pan-European power system.

The three-year agreement promotes collaboration in areas of mutual interest, including energy security, technological innovation, and sustainability. Terna and NPC Ukrenergo will share operational experiences in power system management as well as technical and regulatory expertise, by organising joint training programmes and promoting research and development initiatives.

KontiSkan 1 HVDC interconnection between Sweden and Denmark reports outage

Sweden's TSO, Svenska Kraftnat, has reported that the KontiSkan 1 HVDC interconnection between southwest Sweden and Jutland, Denmark, was disconnected on July 24, 2025, due to the failure of multiple capacitors in a DC filter. Svenska kraftnät has initiated replacement works; however, long delivery times for spare parts mean the connection will remain offline until approximately August 22, 2025.

Around 15 capacitors in the DC filter broke, causing the outage. In addition, the current stock of spare capacitors has been depleted, necessitating procurement from external suppliers. The resulting extended delivery timeframe accounts for the estimated month-long outage.

KontiSkan 1, commissioned in 1965, is one of two HVDC links connecting southwest Sweden with Denmark. With a transmission capacity of 345 MW in both directions, the connection is approaching the end of its technical service life. Consequently, Svenska kraftnät and Danish counterpart Energinet have jointly decided to modernise the link.

The DC filter plays a critical role in the HVDC system by mitigating harmonics generated during AC to DC conversion, protecting plant components from heat damage, electromagnetic interference, and voltage fluctuations that could degrade insulation and control systems.

Danish Energinet to replace OHLs with UGCs in Southwest Zealand

Danish TSO, Energinet, will be replacing replace OHLs with UGCs in Southwest Zealand. This concerns the approximately 23-km stretch between the Hejninge high-voltage substation west of Slagelse and the area southeast of Skælskør, close to the Stigsnæs power plant.

The Danish Agency for Green Land Redevelopment and Aquatic Environment or Styrelsen for Grøn Arealomlægning og Vandmiljø (SGAV), formerly the Danish Environmental Protection Agency, has decided that the project is not subject to environmental impact assessment (EIA) requirements due to its negligible impact on the environment. This allows Energinet to begin preparations and later the actual construction work.

Energinet plans to lay new 132 kV UGC between Hejninge and Skælskør. Here, the UGC will be connected for the last short section to the existing OHL masts, which lead to the Stigsnæsværket high-voltage station. Once the new cables are in operation, Energinet can remove the OHLs and masts on the route. Energinet is now contacting the landowners to enter into agreements for laying cables under their land. Work on laying the electricity cables is scheduled to begin in 2026, so that OHLs and electricity pylons can be taken down in 2027.

Lithuania's Litgrid to begin reconstruction of 110 kV substation

Lithuania's TSO, Litgrid, will commence reconstruction of the 110 kV Šventoji transformer substation in September 2025. The construction permit was received in early July 2025.

This transformer substation located in Palanga city municipality, was put into operation in 1980. Now, the existing equipment will be replaced by new 110 kV switchgear and measuring transformers that do not contain sulphur hexafluoride (SF6) gas and insulating oil in their design. Also, the transformer substation scheme will be changed and a communication tower built. In addition, a solar power plant will be installed, which will reduce the operating costs of the transformer substation.

The reconstruction works are expected to be completed in 2027.

First solar park joins electricity balancing market in Lithuania

Lithuania's TSO, Litgrid, has reported that the Meiluškės solar park located in the Molėtai area of Lithuania and developed by Danish European Energy, has joined the electricity balancing market and submitted its first bids. It is the first solar park in the country, contributing to ensuring the balance of electricity consumption and production in the Lithuanian electricity system. Although European Energy operates solar and wind farms in twelve countries, this solar farm is the first in the company's portfolio to start providing systematic frequency assurance services.

The balancing services are provided by UK-headquartered Centrica Energy. The solar park has successfully completed prequalification tests and is already providing mFRR balancing services for reducing electricity production with a service scope of 34 MW. Litgrid currently has balancing service agreements with 21 market participants. Some of them are already providing balancing services, while others are carrying out preparatory work.

Estonia's Elering submits EIA plan for fourth Estonia–Latvia interconnection

Estonia's TSO, Elering AS, has submitted an EIA plan to the Estonia's Tarbijakaitse ja Tehnilise Järelevalve Amet (TTJA) or Consumer Protection and Technical Regulatory Authority (CPTRA) for the planned maritime section of the fourth Estonia-Latvia electricity interconnection.

The maritime section would start in southwestern Saaremaa and run from there to Latvia. The submarine cable consists of up to three 330 kV AC power cables and one fibre-optic communication cable with an operating capacity of up to 1,000 MW.

The EIA plan was prepared by Skepast&Puhkim OÜ, while the transboundary EIA procedure are managed by the Ministry of Climate.

The plan is available for public comment on the TTJA website and comments can be submitted from July 7, 2025 to July 28, 2025, post which a public discussion will be held on August 7, 2025 in Saaremaa to introduce the plan and discuss the proposals. After the EIA plan is approved, separate public procurements will be organised to conduct studies and prepare an EIA report by 2027.

Elering submits request for increase in Estonia's network charges

Estonia's TSO, Elering AS, has submitted an application to the konkurentsiamet

or Competition Authority of Estonia to increase the price of electricity transmission services.

Elering's current transmission fee is at the 2013 level, approximately EUR12.5 per MWh. Elering is seeking an additional annual revenue of 25 per cent, or approximately EUR24.5 million, by raising tariffs. This would mean an increase in the network fee from EUR12.5 to EUR17.2 per MWh.

According to Elering, the price change is necessary to cover the increase in investment and maintenance costs in recent years, as well as costs related to the growth of distributed generation, ensuring security of supply and increasing crisis preparedness.

If the Competition Authority approves the request, the new network charges for electricity transmission may enter into force in the first quarter of 2026.

(EUR1=USD1.16)

Estonia's Elering extends frequency reserve capacity procurement deadline

Estonian TSO, Elering has extended the deadline for its public procurement of long-term frequency reserve capacity, following a legal challenge filed by one of the registered companies, Elenger Grupp, which requested a four-month extension to the beginning of December 2025.

The procurement appeal will be reviewed by the Public Procurement Dispute Committee, which is expected to issue a decision in the second half of August 2025. Assuming the procurement can proceed, Elering has set a new tender submission deadline of August 28, 2025. Elering initiated the tender in July 2024 to procure up to 500 MW of frequency reserve capacity. The original deadline had been August 4, 2025 and this marks the third timeline extension.

Frequency reserves are critical for maintaining system stability by balancing electricity consumption and production in real time. They mitigate risks posed by forecast inaccuracies, power plant outages, and network failures, preventing potential blackouts.

Power outages in eastern and northern part of Czech Republic

An incident in the Czech power system, which was likely initiated by the fall of a phase conductor, led to significant power outages in the eastern and northern part of the Czech Republic, including areas of Prague, on July 4, 2025.

The Czech Republic TSO, CEPS AS, confirmed that this failure led to an automatic disconnection of several transmission lines and an outage of a power plant. As a result, part of the transmission network went into island operation mode, disconnecting from the larger national system, which in turn rendered it inoperable. Approximately 1,500 MW of production and 2,700 MW of consumption were affected by this sequence of events.

CEPS immediately activated the system restoration procedures. By 14:00 Central European Summer Time (CEST), the transmission system substations supplying Prague were put back into operation. By 15:00 CEST, the operation of all remaining affected substations was also restored.

The severity of this incident will be assessed by ENTSO-E based on the Incident Classification methodology (ICS).

EBRD launches tender for Moldova's 400 kV Bălți–Suceava transmission line

The European Bank for Reconstruction and Development (EBRD) has officially launched the tender for the construction of a 400 kV OHL connecting Bălți in Moldova with Suceava in Romania. The tender is open to all eligible companies via the EBRD Client e-Procurement Portal (ECEPP) platform, with bids due by September 15, 2025.

The Bălți–Suceava line will cover approximately 48 km, traversing 12 localities across the districts of Glodeni, Fălești, Rîșcani, and the municipality of Bălți. The route extends from the Bălți power station to the interconnection point with Romania's transmission network. The project specifications include the installation of 145 metal towers, comprising 21 tensioning and 124 intermediate towers.

The total value of the project is EUR37 million. The Republic of Moldova will benefit from a EUR14.8 million loan from EBRD, a EUR14.8 million loan from the European Investment Bank (EIB), and a EUR7.4 million grant from the EU.

This transmission line, together with the modernisation of the 330 kV Bălți power station and the construction of a new 400 kV station, has been designated a public utility project of national interest. Expected for completion in 2027, the Bălți–Suceava line will strengthen Moldova's cross-border interconnection system, complementing the Isaccea–Vulcănești–Chișinău and Strășeni–Gutinaș lines. The project will boost electricity import and export capacity, support greater renewable energy integration, and advance Moldova's integration into the European single electricity market (SEM).

Middle East and Africa

Kuwait secures approval for GCCIA imports to stabilise summer power supply

Kuwait's Ministry of Electricity, Water and Renewable Energy (MEW) has secured conditional approval from the State Audit Bureau (SAB), to contract for electricity from the Gulf Cooperation Council Interconnection Authority (GCCIA) worth KWD161.381 million from June until December 2025. The total amount for which SAB approval has been obtained, has now reached KWD169.126 for nine months from April to December 2025. Previously, MEW got approval for imports worth KWD2.641 million in April 2025 and KWD5.104 million across two tranches in May 2025. These are part of MEW's coordinated efforts with GCCIA to import electricity to maintain grid stability and avoid scheduled power outages to the maximum possible extent during peak summer.

Earlier in May 2025, Kuwait signed contracts to import 500 MW of electricity through GCCIA, including 300 MW from Oman and 200 MW from Qatar, covering the period from June 1 to August 31, 2025. The GCCIA operates an interconnected electricity grid spanning all six GCC countries – Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates (UAE).

In parallel, MEW is accelerating its domestic generation expansion plans,

notably a 900 MW capacity addition through combined-cycle gas turbines at the Al-Subiya power station. The project is currently in its fourth phase, encompassing tendering, award, and implementation procedures.

(KWD1=USD3.27)

Qatar's KAHRAMAA invites bids for 400 kV substation to evacuate Dukhan solar power

The state-owned Qatar General Electricity and Water Corporation (KAHRAMAA) has invited bids for power evacuation infrastructure for the 2 GW Dukhan solar project, which aims to enhance the country's transmission capacity for upcoming renewable generation. The scope of the contract includes the EPC of a new 400/220/132 kV substation, and upgrade and modification of existing substations as well as OHL and cables at 400 kV, 220 kV and 132 kV voltage levels.

The project has been divided into seven packages, with Substations Package S1 covering the new 400/220/132 kV substation, while Packages S2 and S3 will focus on upgrading the existing 400 kV and 220 kV substations and related modifications. Cables Package C1 includes the installation of 220 kV cables, while OHL Packages 1 and 2 will cover 400 kV works. Packages OHL3 and OHL4 will involve 220 kV and 132 kV OHL works, respectively.

KAHRAMAA has set the bid submission deadline for August 21, 2025.

Once completed in 2030, the Dukhan solar project, which is being developed by another state-owned company QatarEnergy, is expected to double the country's solar power capacity to about 4 GW, accounting for approximately 30 per cent of Qatar's total generation capacity.

Lebanon considers undersea cable to Cyprus to boost electricity supply

The Lebanese president recently met with the country's energy and water minister to review a Cypriot proposal for an undersea cable to supply electricity from Cyprus to Lebanon. The initiative forms part of Lebanon's efforts to secure a more stable and reliable electricity supply across the country, reducing dependency on local fuel-based generation and addressing chronic power shortages.

The proposed submarine cable project aligns with Cyprus's regional plans to interconnect with neighbouring countries, including Israel and Greece, using undersea electrical infrastructure. Cyprus and Lebanon have an established track record of cooperation in infrastructure and telecommunications, notably the ongoing CADMOS-2 cable project aimed at improving internet connectivity between Pentaschinos in Cyprus, and Beirut. The proposed electricity cable would represent a separate strategic partnership, focusing on strengthening Lebanon's energy security. Further details of the Cyprus–Lebanon undersea electricity cable will become available after the completion of feasibility studies and detailed design assessments.

Tanzania begins power imports from Ethiopia via Kenya grid

Tanzania has commenced power imports from Ethiopia through Kenya's transmission network, marking the region's first fully operational electricity wheeling arrangement under the Eastern Africa Power Pool (EAPP) via the 400 kV Isinya (Kenya)–Singida (Tanzania) interconnector.

The 507-km Isinya–Singida transmission line, comprising 96 km in Kenya and 414 km in Tanzania, was formally launched in December 2024. It connects Kenya's Isinya substation to Tanzania's Singida region, and was financed by the African Development Bank (AfDB) and the Government of Kenya at a cost of USD309.26 million. The latest import was facilitated with support from the ±500 kV Ethiopia–Kenya HVDC line and the Suswa converter station, commissioned in 2022, enabling onward transmission of hydropower generated by the Grand Ethiopian Renaissance Dam (GERD) from Ethiopia to Kenya and into Tanzania.

The electricity transfer, predominantly hydropower, is being implemented through a trilateral arrangement involving Ethiopia Electric Power (EEP), Tanzania Electric Supply Company (TANESCO), and Kenya Electricity Transmission Company (KETRACO), with Kenya Power and Lighting Company (Kenya Power) facilitating distribution. The initial import of 100 MW to Tanzania commenced recently and is expected to rise to 200 MW by 2027. KETRACO is set to earn approximately KES800 million annually in wheeling charges from the transit of electricity.

The trial operations under the EAPP began on June 26, 2025, with the first successful wheeling of 50 MW from Ethiopia to Tanzania via Kenya. By June 30, KETRACO confirmed the first full 100 MW trial load had been delivered to Tanzania, with voltage and grid stability maintained. On July 1, Ethiopia was supplying a total of 300 MW, out of which 200 MW was consumed domestically in Kenya and 100 MW was transmitted to Tanzania.

Earlier, TANESCO relied on cross-border imports from Uganda and Zambia to manage localised shortages. Tanzania's inclusion in the Ethiopia-Kenya-Tanzania corridor marks a broader strategic pivot towards regional power trade. It will also support the December 2024 announcement by the 13 EAPP countries to launch a centralised Day Ahead Market (DAM) in 2025 – a regional energy trading initiative expected to benefit more than 620 million people in the region.

Additionally, the upcoming completion of the Tanzania–Zambia (TAZA) interconnector in November 2025 is expected to link the EAPP and Southern African Power Pool (SAPP) for the first time, enabling Tanzania to participate in the SAPP.

(KES1=USD0.0077)

Nigeria's TCN strengthens grid with new Bauchi substation and Kano line upgrade

The state-owned Transmission Company of Nigeria (TCN) is ramping up efforts to strengthen electricity transmission in northern Nigeria with two major infrastructure developments – the commissioning of a new 330/132/33 kV substation in Bauchi and the launch of a reconductoring project in Kano. These initiatives are part of TCN's broader drive to modernise its network and enhance supply reliability across critical regions.

The newly commissioned Bauchi substation, inaugurated on July 3, 2025, adds 250 MW of capacity to the national grid. Implemented with support from the World Bank, the project includes two

150 MVA transformers, a 75 MVA reactor, and new transmission towers to support operational flexibility.

While it currently feeds the existing 132/33 kV Bauchi substation, further connections to other substations are planned to bolster electricity access throughout the Northeast, particularly within the Jos Electricity Distribution Company's area.

Meanwhile, in Kano, TCN has begun the upgrade of the ageing 132 kV Kumbotso–Dakata D/C line.

The year-long project will replace outdated conductors with high-capacity alternatives, install OPGW for improved communication, and introduce robust polymer insulators fit for the region's environmental conditions.

TCN emphasised that this upgrade will help eliminate transmission bottlenecks, particularly for industrial hubs like the Dakata Industrial Zone and the Walalambe substation, while complementing other ongoing improvements in regions such as Kankia-Katsina and Port Harcourt.

SADC sets August 2025 deadline for Inga III transmission accord

At a recent Southern African Development Community (SADC) High-Level Ministerial Dialogue held in Zimbabwe, SADC member countries participating in the Inga III transmission line project have been given until August 2025 to sign the Inter-Governmental Memorandum of Understanding (IGMoU), as part of efforts to accelerate regional power integration.

The SAPP and the SADC Secretariat have been directed to mobilise funding and technical support for key cross-border transmission initiatives.

These are efforts to accelerate the implementation of the Grand Inga Hydropower Scheme and the Congo River Water Transfer Concept to address the region's deepening energy and water challenges.

Earlier in May 2025, South Africa's Ministry of Mineral and Petroleum Resources (MMPR) held discussions with Zambia and Zimbabwe to route an electricity transmission line from the Democratic Republic of Congo's (DRC) Grand Inga Hydropower Project through their territories, aiming to deliver up to 2,500 MW of renewable power to South Africa's grid. The hydropower plant (HPP) on the Congo River is one of the world's largest planned hydropower developments, with a proposed capacity of over 42 GW across several projects.

The first phase of the project, 351 MW Inga I, was built in 1972 while the 1,424 MW Inga II was constructed in 1982. According to the World Bank, Inga III could generate between 3,000 and 11,000 MW depending on the design approach, with widely differing economic, environmental, social and financial costs and benefits.

The development of this phase is backed by the World Bank and AfDB with recent funding of USD250 million approved to support preparatory activities.

South Africa plans to import electricity from the Inga III station, though the transmission line linking Zambia's and Zimbabwe's transmission networks, before linking into South Africa's national grid. On finalisation of the intergovernmental agreements and feasibility studies, detailed design of the transmission line and financing arrangements will need to be made before construction can commence.

Additionally, the recent SADC ministers meeting called for advancing the Regional Energy Transmission, Trade, and Decarbonisation (RETRADE-SA) programme to be implemented in partnership with the World Bank and SAPP, aiming to expand the Southern African electricity market.

RETRADE-SA is intended to facilitate power trade and grid decarbonisation across the region.

In addition, the ministers endorsed a regional Just Energy Transition (JET) Framework to guide equitable energy reforms, alongside efforts to scale up clean cooking initiatives. Countries have also been encouraged to ratify the Intergovernmental Agreement for the SADC Centre for Renewable Energy and Energy Efficiency (SACREEE), and approve its Business Plan for 2025-29.

South Africa launches prequalification for inaugural independent transmission projects

South Africa's Department of Electricity and Energy (DEE) has formally launched the prequalification phase for the country's first procurement of independent transmission projects (ITPs), inviting responses to a request for qualifications (RFQ) by September 23, 2025. It was launched at the Johannesburg Stock Exchange in Sandton, led by the Minister of Electricity and Energy and the Deputy Minister of Finance.

The initiative forms the first step in a competitive process to identify private sector players capable of delivering transmission infrastructure under design, finance, build, operate, and maintain (DFBOM) models.

The transmission assets included in this first ITP procurement phase were selected from the National Transmission Company South Africa's (NTCSA) Transmission Development Plan (TDP).

The scope comprises 1,164 km of transmission lines and 2,630 MVA of transformation capacity distributed across seven corridors across three provinces of the Northern Cape (200-km Aries–Aggeneis line, 126-km Groeipunt line upgrade, 265 km Boundary–Ferrum line, and 117 km Nama and Gromis projects); North West (240-km Mookodi–Hermes line and 180-km Mahikeng Integration Phase 1); and Gauteng (36-km, 500 kV Hera–Westgate line).

The programme is being implemented by the Independent Power Producer Office (IPPO).

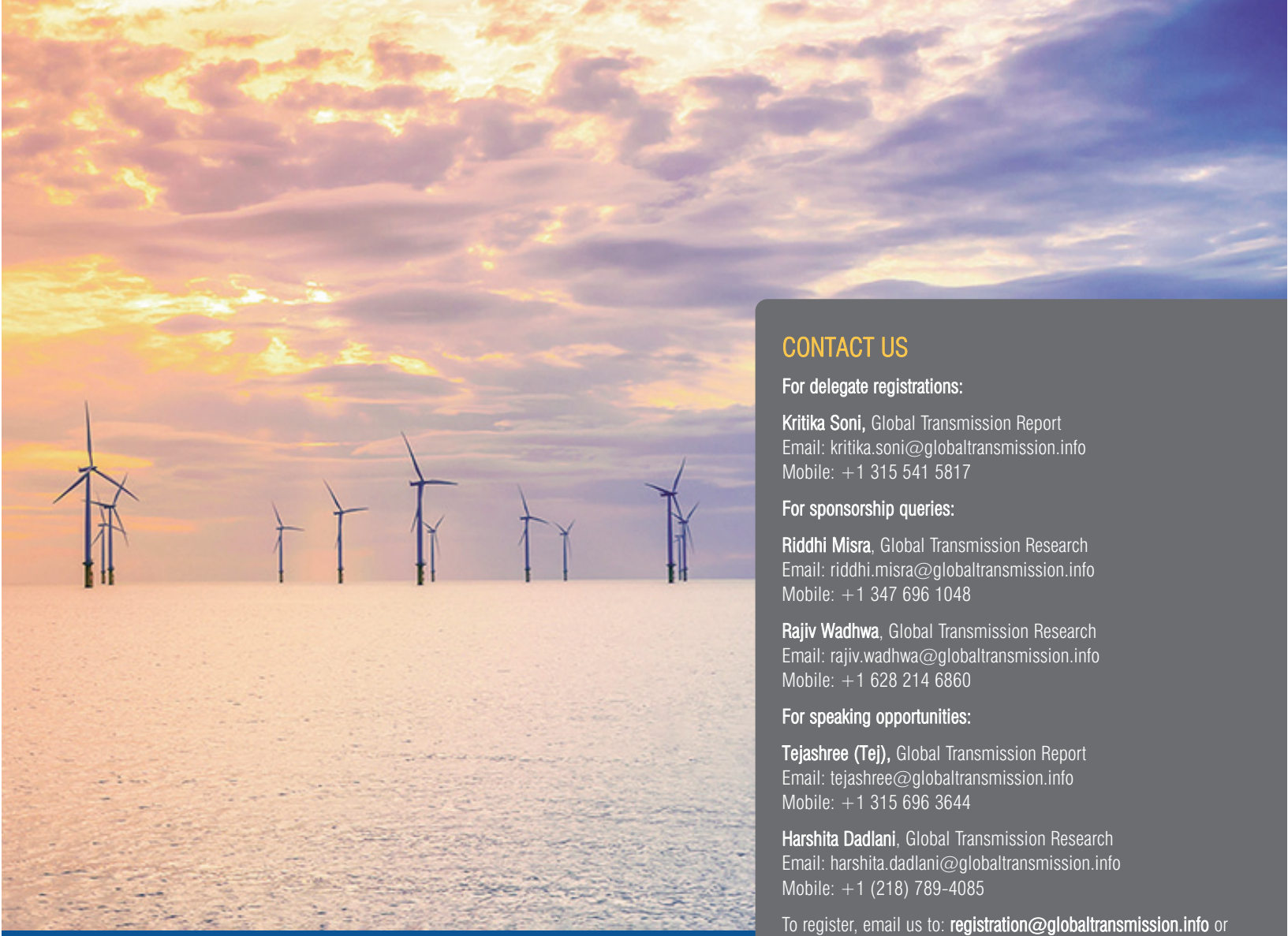
The RFQ aims to shortlist bidders with suitable technical and financial qualifications. Participants will need to pay a non-refundable fee of ZAR150,000 to access the tender documents.

Registration for the RFQ phase will close approximately 20 days prior to the September 23 deadline.

This stage will be followed by a RfPs later in 2025. Eventually, successful bidders will be awarded 25-year availability-based contracts with the Central Purchasing Agency, a newly created division within the NTCSA.

The projects are expected to support the addition of 3,222 MW of renewable energy capacity between 2029 and 2030.

(ZAR1=USD0.056)◆



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Ireland's EirGrid

Plans to invest over EUR4 billion in grid infrastructure

Ireland's independent transmission system operator (TSO), EirGrid, is currently progressing the most ambitious programme of work ever undertaken on the country's transmission system. This is driven by increasing electricity demand on account of growing electrification, data centres and industrial expansion, as well as the significant addition of renewable energy. The country recorded a new peak demand of 6,024 MW on January 8, 2025. By 2034, EirGrid's analysis shows that it will be above the 7,000 MW mark.

Over the next decade, EirGrid will need to develop large amounts of new grid infrastructure for connecting significant volumes of offshore wind (OSW), onshore wind, solar and conventional generation, while also reinforcing the grid to enable this power to reach demand customers. It will also have to handle the intermittent nature of the upcoming renewable energy sources. Notably, EirGrid's new role of owning and being responsible for offshore transmission assets, as mandated under the Marine Area Planning Act, 2021, requires active planning, coordination and implementation efforts. It will also enable the direct integration of the electricity markets of Ireland and continental Europe through the Celtic Interconnector (with France), bypassing the current reliance on the connection through Great Britain.

Hence, an unprecedented level of investment is required to make the transmission grid more resilient and renewable-ready. To this end, in July 2025, Ireland's Commission for Regulation of Utilities (CRU) published the draft determination of the Price Review (PR) 6 Investment Plan for EirGrid. This was in response to the latter's submission of its five-year Business Plan containing expenditure proposals worth EUR4.15-7.7 billion (capital and operation expenditure) for the 2026-30 period to support the delivery of the above objectives in a cost effective, efficient, safe, reliable and secure manner, while supporting a cleaner, more sustainable future for Ireland. The Business Plan, which is developed by EirGrid every five years for CRU approval, includes the operation and development plan for the transmission system, and its costs are approved through the CRU's price review process. The CRU's final decision on the framework and costs is expected in 2025.

More recently, in July 2025, EirGrid secured EUR2 billion of the EUR3.5 billion new equity allocation for electricity grid infrastructure under the Irish government's EUR275.4 billion National Development Plan for 2026 to 2035. The remaining EUR1.5 billion will go to ESB Networks (which is the electricity onshore transmission asset owner, distribution system operator [DSO] and distribution asset owner [DAO]). This additional equity will enable both companies to significantly increase capital investment to expand the electricity transmission and distribution network infrastructure. For EirGrid, it will support the increased capital investment outlined in its PR6 investment plan.

Existing transmission network

As of 2024, EirGrid operates 7,219 ckt km of line length and about 17,114 MVA of transformer capacity across the 110 kV, 220 kV, 275 kV and 400 kV alternating current (AC) voltage levels. Around 65 per cent of EirGrid's line length is at the 110 kV level, followed by 28 per cent at 220 kV and the remaining 7 per cent at the 275 kV and 400 kV voltage levels.

Ireland has interconnections with Northern Ireland (three AC links) and Wales (±250 kV East West Interconnector, or the EWIC high voltage direct current [HVDC] link) in the UK. Recently, in April 2025, the 540 MW, ±320 kV Greenlink Interconnector (Great Island [Ireland]–Pembroke [UK]) was commissioned, establishing the second interconnector with Wales.

Operational performance

Eirgrid reported that the system minutes lost (SML) as a result of faults in the main system was 0.152 in 2024. No system minutes were lost due to the disconnection of normal tariff load customers during under-frequency load shedding disturbances. In 2024, the system frequency was within the agreed limits (49.9 Hz to 50.1 Hz) 98.87 per cent of the time (more than its target of 98 per cent). EirGrid's transmission availability has remained in the 95 per cent range from 2021 to 2024. To improve the performance of the

Transmission Industry Structure in Ireland

The Irish power sector consists of the state-owned, vertically integrated utility, the ESB Group (formerly the Electricity Supply Board), which has a presence across generation, transmission, distribution and supply. There are also several independent power producers in the country. ESB Networks, a part of the ESB Group, is the transmission asset owner (TAO), distribution asset owner (DAO) and distribution system operator (DSO). In transmission, it is responsible for building works and carrying out physical maintenance as identified by EirGrid. Northern Ireland Electricity (NIE) Networks is the owner of the electricity transmission and distribution networks in Northern Ireland.

EirGrid plc, also a state-owned company, is the transmission system operator (TSO) in Ireland and is responsible for operating and ensuring the maintenance and development of a safe, secure and reliable electricity transmission system. Its activities are regulated by the Commission for Regulation of Utilities (CRU). EirGrid holds two licenses as interconnector operator, one from CRU and one from the UK's Office of Gas and Electricity Markets (Ofgem) in the Great Britain. In addition, EirGrid also owns System Operator Northern Ireland (SONI) Limited, the TSO for Northern Ireland. EirGrid and SONI jointly act as single electricity market operator (SEMO) for the single electricity market (SEM), which is regulated by the SEM Committee (SEMC). This committee comprises CRU, Utility Regulator (UR) for Northern Ireland, an independent member and a deputy independent member.

Finally, EirGrid plc and SONI Limited are the designated nominated electricity market operators (NEMOs) in Ireland and Northern Ireland respectively. NEMOs are organisations mandated to run the day-ahead and intra-day integrated electricity markets in the European Union.

Table 1: Growth in Ireland's transmission infrastructure

Voltage	2020	2021	2022	2023	2024
Transmission line length (ckt km)					
110 kV	4,585	4,623	4,642	4,673	4,695
220 kV	1,937	1,950	1,977	1,981	1,987
275 kV	97	97	97	97	97
400 kV	439	439	439	439	439
Total line length	**7,058**	**7,109**	**7,155**	**7,190**	**7,219**
Transformer capacity (MVA)					
220/110 kV	11,989	11,864	11,839	11,614	11,864
275/200 kV	1,200	1,200	1,200	1,200	1,200
400/220 kV	4,550	3,950	3,950	4,050	4,050
Total transformer capacity	**17,739**	**17,014**	**16,989**	**16,864**	**17,114**

Note: Figures pertain only to the Republic of Ireland. They also exclude the Dublin 110 kV network and some other specific 110 kV circuits that are treated as part of the distribution system

Source: EirGrid; ESB Networks; Global Transmission Report

existing grid, EirGrid operationalised the first dynamic line rating (DLR) device on the 110 kV Lisheen–Thurles circuit in March 2024.

Financial performance

EirGrid's revenue has been increasing over the past few years, from EUR688 million in 2020 to EUR1,106 million in 2024. However, the group's profit before tax was EUR9.8 million, down from EUR71.2 million in the previous financial year due to costs associated with Article 13.7 of the EU Clean Energy Package regulation (under which generating companies receive financial compensation for reducing energy output due to grid congestion), and regulatory timing differences.

These factors were partly offset by a gain from the deconsolidation of the System Operator for Northern Ireland (SONI) Limited as a subsidiary. Given the governance changes required as a result of the UR's SONI Governance decision, EirGrid can no longer demonstrate control over SONI Limited, from an accounting perspective under International Financial Reporting Standards (IFRS), as of October 1, 2023.

Table 2: EirGrid's key operational indicators

Particulars	2020	2021	2022	2023	2024
Total SML (minutes)	**0.06**	**0.05**	**0.132**	**4.461**	**0.152**
Transmission availability (%)	96.01	95.71	95.99	95.31	95.48
Number of outages in transformers	99	76	75	78	75
Number of outages in transmission lines	417	421	385	401	427

Source: Annual All-Island Transmission System Performance Report, EirGrid

Table 3: EirGrid's key financial indicators (EUR million)

Particulars	2020	2021	2022	2023	2024
Total revenue	688	737	862	1,141	1,106
Direct costs	519	535	566	868	977
Operating profit	32	57	128	86	29
Profit before tax	14	41	115	71	10
Profit for the year	**12**	**36**	**98**	**60**	**10**
Capital expenditure	**17**	**34**	**32**	**95***	**212**
Return on equity (%)	3.7	9.7	17.33	9.52	1.69
Debt to equity ratio	3.17	2.77	1.85	2.76	3.09
Profit margin (%)	1.7	4.61	11.41	5.26	0.92

Note: Data is as of September 30 for the respective year. Capital expenditure reflects net cash used in investing activities; In 2023, EirGrid invested EUR67.58 million in investing activities; however, it received grants worth EUR162.52 million, outweighing the cash invested

Source: EirGrid; Global Transmission Report

Table 4: EirGrid's PR6 cost summary (EUR billion)

Particulars	Onshore forecast	Offshore forecast
Transmission capital*	0.2	0.7-4.2
Non-network capital expenditure	0.7	0.08
Operational expenditure		
Controllable	1.1	0.47-0.52
Non-controllable	1.1	
Total costs	2.9	1.25-4.8
Total (onshore and offshore)	**4.15-7.7**	

*Note: All figures are subject to rounding; *The onshore network capital expenditure is included in the ESB Networks TAO proposals to the CRU, which includes EirGrid's portion of the costs amounting to EUR262 million*

Source: EirGrid

Future plans

EirGrid has set out ten key focus areas in its PR6 Investment Plan, which include digital transformation, technology resilience and modernisation, cyber security, power system capability enhancements, TSO-DSO coordination, National Control Centre Infrastructure, Celtic operational readiness programme, onshore network plan, offshore network and readiness plan, and workforce growth.

Particularly, the power system capability enhancements programme involves measures to ensure that the TSO's operational capabilities further adapt and evolve to manage a highly complex and technical transition of accommodating 95 per cent of renewable generation into Ireland's grid at any one time (compared to 75 per cent currently). The Celtic operational readiness programme will ensure that both the grid and market operations are ready to integrate the Celtic Interconnector (a joint venture between EirGrid and the French TSO, Réseau de Transportd'Electricité (RTE) and enable 700 MW of power exchange with France within the PR6 period. It will boost Ireland's supply security by providing a direct link to continental Europe.

Onshore network plan

EirGrid has been tasked with making Ireland's grid renewable-ready in line with the government's Climate Action targets (achieving a 51 per cent reduction in greenhouse gas emissions by 2030 and reaching net zero emissions by 2050). For this, EirGrid plans to deliver 876 km of uprates to existing lines, 181 km of new overhead lines (OHLs), the replacement of 55 km of underground cables (UGCs) with 319 km of new UGCs and 40 new/expanded substations. It plans to use composite poles, which were piloted in 2024, in some future projects to accelerate delivery timelines and realise other associated benefits such as a reduction in visual impact and increased durability.

According to EirGrid's July 2025 update to its network delivery portfolio, of the 391 planned projects, 36 per cent are generation connection projects, 18 per cent relate to uprate projects, 11 per cent are replacement projects, and an equal share of 8.5 per cent is accounted by new and refurbishment projects. Upgrade projects hold a 6 per cent share in the project portfolio. Around 89 projects from this project portfolio have already been completed.

Some of the ongoing UGC projects include the 110 kV North Connacht project, 220 kV Powering Up Dublin programme, as well as 400 kV East Meath-North Dublin and Kildare-Meath grid upgrades. These replacement and upgrade projects will help in renewable energy integration and meet the growing electricity demand in East Ireland, driven by population and economic growth. Particularly, the Powering Up Dublin project, launched in 2022, will transform and modernise the city's infrastructure by installing over 50 km of cables across Dublin, building and upgrading a number of substations. The 400 kV North-South Interconnector project links Ireland and Northern Ireland, which will help secure the electricity supply required to support Ireland's future energy needs and achieve its renewable energy targets.

Offshore network and readiness plan

Under this plan, EirGrid will prepare the purchase of transmission infrastructure from private developers in the case of East Coast Phase I projects (the initial phase of offshore wind farm connections to the Irish electricity grid, focusing on the four 3,074 MW projects awarded in 2023 off the east coast); make the internal systems and business "offshore ready" for the ownership and operation of offshore transmission assets; as well as build offshore transmission assets under the South Coast Phase II projects.

In April 2025, EirGrid announced a procurement programme for over EUR1 billion for works related to the delivery of an offshore electricity grid for Ireland. Focused initially on Ireland's east coast, and then moving to the south coast, the procurement programme relates to operation and maintenance activities to enable the connection of offshore renewable generation to the onshore grid.

Separately, it also initiated another procurement initiative in relation to their Powering Up Offshore – South Coast Enduring Connection Policy (ECP) works and the high voltage equipment aspect of these works. EirGrid will also shortly begin the marine and coastal surveys for the South Coast project. The latter aims to deliver the grid transmission infrastructure needed to connect 900 MW of OSW generation (under Phase II) to onshore grid connection points along Ireland's south coast. The surveys will be conducted by the Dutch company Fugro. The project's transmission infrastructure will include two offshore substation platforms – to be located within Maritime Area A, also known as Tonn Nua of the South Coast-Designated Maritime Area Plan (SC-

Table 5: EirGrid's key upcoming projects

Project	Type of line	Voltage (kV)	Line length (km)	Scheduled completion
Interconnectors				
Celtic Interconnector –Knockraha, (Cork, Ireland)–La Martyre (Brittany, France) link	USC and UGC	±320 kV HVDC	575	2027
North–South Interconnector –Tyrone (Northern Ireland)–Meath (Ireland) line – 400 kV/275 kV substation in Turleenan	OHL	400	138	2031
Key domestic projects				
North Connacht project –Moy–Tonroe UGC –Extension of Moy and Tonroe substations – Tonroe–Flagford line upgrade	UGC	110	60	2028
East Meath-North Dublin Grid Upgrade –Woodland–Belcamp UGC	UGC	400	38	2029
Kildare-Meath Grid Upgrade –Dunstown–Woodland UGC	UGC	400	53	2029
Powering Up Dublin programme –Five 220 kV cable replacement projects (Carrickmines–Poolbeg; North Wall–Poolbeg; Finglas–North Wall and two cables linking Inchicore and Poolbeg) –220 kV/110 kV Central Dublin GIS (new) –220 kV Poolbeg substation (new) –Extension of 220 kV Belcamp substation –Expansion of other substations	UGC	220	50	NA
Kildare–Dublin grid reinforcement –400/220/110 kV Steelstown substation –220/110 kV near Castlebaggot –Associated circuits linking the new stations to the Maynooth, Inchicore, and Carrickmines substations	OHL	400/220/110	NA	NA
Offshore South Coast –Offshore cables connecting offshore substations to landfall locations –Onshore substations –Connections between landfalls and new onshore substations by UGCs –Loop-in connections (UGC or OHL) to the existing network from new substations	USC, UGC and OHL	NA	NA	NA

Note: USC – undersea cable; UGC – underground cable; OHL– overhead line; GIS: gas-insulated substation; NA: Not available
Source: EirGrid; Global Transmission Report

DMAP)– Ireland's first forward spatial plan for offshore renewable energy. To support EirGrid's expanded role in OSW development, the government's recent equity injection will support EirGrid in raising funds to develop and acquire offshore transmission assets.

The way forward

EirGrid's PR6 Business Plan reflects the unprecedented level of work required to make the Irish grid more resilient and renewable-ready, as well as EirGrid's new role in building and operating the offshore network. The growth in low carbon and renewable sources will require significant changes to the electricity system, for which EirGrid needs to make the grid stronger and more flexible. The rolling out of significant electricity infrastructure in a timely and efficient manner will be critical in ensuring that Ireland's future energy system is one that is reliable, sustainable, internationally competitive and affordable.◆

Argentina's Power Reforms

Aims to promote efficiency and private investment

Argentina's electricity sector is undergoing significant reforms under the current administration, which took office in December 2023. The government has taken a series of measures to deregulate the sector and promote private investment to address the sector's challenges, that have been exacerbated by years of underinvestment in grid infrastructure and slow growth in generation capacity compared to the rising demand, leading to frequent supply disruptions.

The latest structural reforms were brought about in July 2025 by Decree 450/2025, which amends key provisions in power sector Laws 15,336 (Régimen de Energía Eléctrica or Electric Energy Regime) and 24,065 (Marco Regulatorio Eléctrico or Electric Regulatory Framework); and Decree 451/2025, which establishes a single energy sector regulator for electricity and gas (Regulador Nacional de Gas y Electricidad [RNGE]), assuming the roles of electricity and gas regulators – Ente Nacional Regulador de la Electricidad (ENRE) and Ente Nacional Regulador del Gas (ENARGAS). The new entity will be finalised over a 180-day transition period. Previously, in April 2025, through Decree 286/2025, the government initiated the privatisation of Energía Argentina S.A. (Enarsa), beginning with the divestment of Enarsa's stake in the country's main transmission company, Compañía de Transporte de Energía Eléctrica en Alta Tensión Transener S.A. (Transener).

These measures build on the policy direction established through emergency Decrees 55/2023 and 70/2023, and subsequently the Law 27,742 or the Ley de Bases y Puntos de Partida para la Libertad de los Argentinos (Ley Bases) (the July 2024 omnibus law). The aim is to foster competition, liberalise the electricity market, rationalise subsidies and ensure economic efficiency in the energy sector.

The key changes brought about by Decree 450/2025 are as follows:

- It authorises the complete opening of electricity to international trade, with clear and predictable rules. The government may only object to transactions for technical reasons or security of supply concerns.
- It reestablishes and strengthens the possibility of entering into sales contracts between private parties, reversing the provisions of 2013, to promote predictability, stable supply and long-term investments. Particularly, distribution companies need to source at least three quarters of their demand through the corporate power purchase agreement (PPA) market. While Law 24,065 allowed private PPAs, such arrangements for conventional sources were effectively suspended since 2013. This implies that distribution companies and large consumers will be required to procure electricity directly from the wholesale market – bypassing the current centralised mechanism managed by Argentine state-owned wholesale electricity company, Compania Administradora del Mercado Mayorista Electrico SA (CAMMESA), which manages the Mercado Eléctrico Mayorista (MEM) or wholesale electricity market (WEM) and coordinates the technical and economic aspects of the Sistema Argentino de Interconexión (SADI) or Argentine Interconnection System.
- It ratifies the free choice of supplier by end users by ensuring that consumers can decide with whom to contract their energy, without regulatory obstacles or operational hurdles. Additionally, subsidies will increasingly focus on vulnerable users instead of being applied across the entire consumer base. This transition supports fiscal consolidation and provides clearer price signals to industrial and commercial users.
- To tackle persistent payment arrears and enhance the creditworthiness of distribution companies, the decree introduces joint and several liability provisions that also apply to the provinces and municipalities served by these companies. This approach aims to promote better financial discipline and ensure that payments are made on time.
- It introduces regulatory mechanisms to make users aware of what they are paying. Their bills may not include local taxes or charges unrelated to the goods and services billed. There will be cost-based rate setting for transmission and distribution services to ensure the recovery of investment and operation and maintenance (O&M) costs, as well as economic sustainability across the value chain.
- It establishes multiple alternatives for private infrastructure initiatives in transmission projects that must maintain open, non-discriminatory access, but can proceed under risk-based investment models, which include cost recovery mechanisms. A detailed regulation is expected to be issued in this regard. Broadly, transmission expansion can take place through mandatory expansion by operators, with associated costs included in the transmission rate – a shift from the previous framework, where operators were only compensated for O&M; and third-party development which permits private players to finance and build transmission assets either directly or through the public works concession model set by Law 17,520. This is subject to changes by the Ley Bases. The developer may be granted priority of use. These measures are in line with the government's plan to develop backbone transmission infrastructure and support energy-intensive sectors such as mining.
- In late May 2025, the Argentine government presented a list of priority projects to be financed and executed by private companies through a concession scheme at no cost to the government. These projects, aggregating 5,610 km of new lines at an investment of USD6.6 billion, would strengthen SADI and mitigate outages. Private developers can recover the investment through the payment of a fee by the users who benefit from this new infrastructure.
- The WEM is now open to new participants, including consumers who produce their own electricity as well as energy traders and storage companies. This is significant in relation to the government's ongoing tender for battery storage systems, which aims to add 500 MW of storage capacity to the grid. The tender received an overwhelming response of over 1.35 GW from 14 companies, with the final awards expected by the end of August 2025.
- The decree reinforces federal authority by strengthening limitations on provincial and municipal jurisdictions by mandating that their regulations must not obstruct the federal objectives outlined in the amended laws 15,336 and 24,065.

The decree establishes a 24-month transition period during which all complementary regulations must be adapted and a gradual, orderly, and predictable implementation of this transformation must be guaranteed. This will be in coordination with the MEM normalisation process being carried out by the Energy Secretariat (SE) of the Ministry of Economy. In January 2025, the SE introduced Resolution 21/2025 to implement changes in the WEM regarding fuel management for thermal generators, as well as price determination and the operation of both the corporate PPA and the spot markets.

Net, net, the government intends to transform the Argentine electricity sector into an industry driven by private investment, economic and financial self-sufficiency, market signals, and freedom of choice.◆

Nordic Grid Plan

Charting the transition journey to emission-free energy

The Nordic power system is in the middle of a radical transformation as this region transitions to emission-free energy to meet ambitious climate goals of the four Nordic countries. Finland aims to become carbon neutral by 2035; Sweden by 2045 (with interim milestones for 2030 [63 per cent] and 2040 [75 per cent]); Denmark by 2050 (with a 70 per cent milestone for 2030); and Norway aims to become a low-emission society (with 90-95 per cent reduction) by 2050. The ongoing electrification and increased electricity consumption will require large volumes of clean electricity generation. These developments will bring significant changes to all parts of the power system.

The Nordic capacity balance will be tighter with high growth in electricity consumption and a surge in intermittent power production. Flexibility and storage, along with sufficient dispatchable power plants, will be vital to ensure system stability and adequacy. At the same time, there is a lot of uncertainty driven by external factors including geopolitical changes, global competition and high costs for key technologies. The willingness to pay and technology costs will decide the extent and speed of power system expansion.

Massive investments in the transmission grid will remain key to smooth energy transition.

The four Nordic transmission system operators (TSOs) – Energinet.dk (Denmark), Fingrid Ojy (Finland), Statnett SF (Norway) and Svenska kraftnät AB (Sweden) – have intensified and formalised their cooperation on security and preparedness.

TSOs have been collaborating to outline a common vision for the future development of the Nordic power system through biennial publication of the Nordic Grid Development Perspective (NGDP).

The latest edition, NGDP 2025, released in June 2025, reaffirms the Nordic TSOs' commitment to build on the solid foundation of long-standing cooperation to jointly address the emerging challenges and develop solutions to enable a successful transition.

Global Transmission Report presents key highlights of the NGDP 2025…

Key trends and developments

The electricity consumption in the Nordic region is expected to increase in the coming decades. However, the extent of this growth, its location and the speed at which it will occur remain highly uncertain. In the short-term, electrification of existing demands in industries, transport and heating will only increase the demand.

In the long term, demand will mainly come from new electrified industries including data centres, new industrial facilities and hydrogen production based on electrolysis.

The long-term development of electricity consumption will depend on factors such as the competitiveness of electricity prices in the Nordics as well as the maturation of the electrolyser technology. On the supply side, most of the new electricity production will come from wind and solar.

While the total energy balance of the Nordic region by 2035 shows a moderate but decreasing energy surplus, there are variations across the region (with Denmark and Finland maintaining around zero balance, while energy balances in Norway and Sweden decrease significantly).

The Nordic TSOs plan for substantial grid investments to connect grid users, transport electricity from areas with production to areas with consumption and efficiently utilise production across a wider area. Flexibility in production and consumption is needed to ensure efficient use of energy resources and maintain a high supply security.

Emerging technical challenges

With the rapid introduction of power electronic interfaced devices (PEIDs), the Nordic power system's technical characteristics are changing swiftly, affecting the system stability, reliability and resilience. Grid stability and other technical aspects also set limits for how the grid can be utilised, in addition to thermal constraints. The fundamental change in system characteristics require new solutions.

The Nordic TSOs established the Converter Dominated Nordic Grid (ConDoN) group in 2022 to identify and solve technical challenges introduced to the Nordic synchronous system due to massive integration of PEIDs. TSOs are working on three key areas under ConDon.

First, the Nordic TSOs are collaborating on common guidelines and monitoring practices for managing converter stability issues related to fast dynamics of converter controls.

This is mainly driven by the need to handle the expected increase in the capacity of converter-interfaced facilities by three times on the generation side during the next decade alone. On the demand side, data centres, electrolysers and other power intensive industry devices will connect to the grid via converters.

Second, TSOs are developing a joint guideline for grid-forming functionality to ensure a harmonised implementation of grid-forming capabilities within the Nordics.

The introduction of such capabilities will enhance the system's ability to regulate voltage and frequency under normal and disturbed conditions; maintain synchronism and support the system during faults; operate in low-inertia environments or even islanded grids; and improve resilience and dynamic stability.

The proposed joint guideline will define consistent performance requirements for grid-forming capable inverters; provide clarity for developers and manufacturers on expectations; enable TSO coordination in planning, grid connection and operation; and support pilot projects and real-world validation of grid-forming behaviour in the Nordic context.

Notably, the implementation of key technologies such as high-voltage direct current (HVDC) links, static synchronous compensators (STATCOMs) and battery energy storage systems (BESSs) serve as a foundation for extending grid-forming requirements to other technologies over time.

Finally, TSOs are also taking measures to safely integrate large demand facilities. This is vital to find techno-economically feasible

measures to limit the voltage, frequency and rotor angle stability impacts in converter-interfaced generation and load, where active power recovery may take up several seconds, which may have huge cross-border impact.

While all Nordic countries have low-voltage-ride-through requirements in place for both synchronous and converter-based generation units in the event of faults, not all countries have requirements in place regarding demand facilities. It is deemed critical to ensure that these requirements are in place and coordinated within the Nordics, considering the possibility of system-wide consequences when integrating large demand facilities.

Efficient grid utilisation and accelerated development

It is important to utilise the existing grid more efficiently, while accelerating network expansion, particularly given the surging costs, long lead times and increasing requests for grid connection.

Minor measures in existing grid assets such as temperature upgrades for existing power lines, dynamic line rating (DLR) and replacing limiting network components, such as current transformers, can significantly increase the transmission capacity.

The Nordic flow-based market coupling also enables Nordic TSOs to use the transmission grid more efficiently and closer to its operational boundaries, while maintaining a secure operation through automated and digitalised solutions.

To ensure timely grid development, fast-tracking permitting is vital, which currently remains a priority at the European level as well. It can take up to 14 years from planning to commissioning of new transmission lines. Several steps have been taken to shorten permitting times.

In Norway, the permitting authority has adopted a fast-track method for the permitting process of simple and well-prepared applications that have minimal impact on public and private interests, and where affected stakeholders do not have objections to the measure.

In Sweden, pilot studies have been carried out for a coordinated process for permits when developing new transmission lines.

In Finland, permitting authorities have allocated additional resources to address the backlog of projects awaiting permits.

In Denmark, three specific areas have been designated as dedicated grid zones as part of the European Union's Renewables Energy Directive (RED) III implementation, aiming to speed up the permitting process.

Further, TSOs are also scrutinising their internal processes to identify possible reductions in the planning and construction phase.

They are collaborating to identify sourcing optimums for critical infrastructure components and upsides from increasing standardisation on components and technical requirements.

Table 1: Key national and cross-border projects of the Nordic countries

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
National Projects					
Denmark					
D1: Idomlund–Endrup; and Central and West Jutland cable (including the Karlsgårde–Stovstrup, Stovstrup–Videbæk and Videbæk–Idomlund sections)	400 kV and 150 kV	97 km (400 kV); 81 km (150 kV)	New 400 kV AC double-circuit (D/C) line (86 km OHL and 11 km UGC) from Idomlund in Holstebro municipality to Endrup in Esbjerg municipality and 150 kV grid reinforcement in Western and Mid Jutland. It is important to collect the expected expansion of renewable production in Western Jutland for domestic consumption or exports.	2026 (400 kV line) 2028 (150 kV grid reinforcement)	Under construction
D2: Aarhus–Aabenraa transmission line	400 kV and 150 kV	190 km (400 kV); 270 km (150 kV)	Upgrade existing 400 kV AC OHL to D/C OHL between Kassø and Trige. It consists of approximately 190 km of 400 kV OHLs, 270 km of 150 kV cable laying, and the expansion of five existing stations, including four at new locations. Energinet expects to dismantle 242 km of 150 kV overhead lines. The project is appointed as a grid acceleration area and is important to connect surplus renewable production areas with demand centres.	2033	Planned/Under consideration

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
D3: Central Jutland–Vendsyssel transmission line	400	NA	Upgrade existing 400 kV AC single-circuit OHL to D/C OHL between Tjele and Ferslev and between Trige and Ferslev, and new 400 kV AC OHL between Ferslev and Vendsysselværket. It will be important to transport renewable production in Northern Jutland to demand and interconnectors further south.	2036	Planned/Under consideration
D4: New network structure in North Jutland	150	193	The project reinforces the 150 kV grid in the northwest Jutland. It consists of 193 km of cables, relocation of four 150 kV stations to replace existing stations, and adaptation of two existing 150 kV stations. The project is appointed as a grid acceleration area and will be important to connect renewables in Northern Jutland to demand and interconnectors further south.	2031	Planned/Under consideration
D5: Sjælland–Lolland/ Falster green network	400 kV and 220 kV	47 km (400 kV); 69 km (220 kV)	Projects for upgrading and expanding the 400 kV grid between Copenhagen area and Lolland-Falster. It includes four new high-voltage substations, one new 400 kV connection (Vordingborg–Ringsbjerg) and two new 220 kV connections (Vordingborg–Eskilstrup; Vordingborg–Nørre Radsted). The project is appointed as a grid acceleration area and will be important to connect renewable production from Lolland-Falster and Southern Zealand to demand in the Copenhagen area and in Sweden.	2033	Planned/Under consideration
D6: Substations Kassø, Tjele, Revsing	NA	NA	Reinvestments and upgrading of larger stations to meet requirements from renewable production connections.	2030-35	Planned/Under consideration
Finland					
F1: Huittinen–Forssa line	400	69	New 400 kV OHL between Huittinen and Forssa. Improves reliability and transmission capacity of the grid in the western part of Finland.	2025	Planned/Under construction
F2: Reinforcement of Lake Line	400	300	New 400 kV AC single-circuit OHL of 300 km between Nuojuankangas and Huutokoski substation. The line will be series compensated.	2026	Planned/Under construction
F3: Helsinki 400 kV cable	400	12	New 400 kV AC cable connection to help improve reliability and transmission capacity of the grid in the southern part of Finland.	2026	Planned/Under consideration
F4: Herva–Nuojuankangas line	400	117	New 400 kV AC OHL between Herva and Nuojuankangas (over the P0 (cross-section Kemi–Oulujoki) cut in northern Finland). The line will be series compensated.	2027	Planned/Under consideration
F5: Jylkkä–Alajärvi line	400	150	New 400 kV double-circuit AC OHL of 150 km from the western coast to Central Finland. The line will be partly series compensated.	2028	Planning/Under consideration
F6: Kristiinankaupunki–Nokia line	400 kV and 110 kV	180	New 400 kV connection between Kristiinankaupunki and Nokia. Will help connect increasing wind power on the western coast and meet power consumption increases in capital area.	2029	Planning/Under consideration

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
F7: Alajärvi–Toivila line	400 kV	150	New 400 single-circuit AC OHL of 150 km between Alajärvi and Toivila substations. Power line is extension to Jylkkä–Alajärvi line. The line will be series compensated.	2028	Planning/Under consideration
F8: Toivila–Hikiä line	400	130	400 kV double-circuit AC OHL of 130 km from Toivila substation to Hikiä substation.	2028	Planned/Under consideration
F9: Reinforcement of Forest Line	400	300	New 400 kV AC single-circuit OHL of 300 km next to the existing Forest Line. The line will be series compensated.	2030	Planning/Under consideration
F10: Hikiä–Anttila–Länsisalmi line	400	350-364	New 400 kV AC OHL connection to improve reliability and transmission capacity of the grid in the southern part of Finland.	2030	Planning/Under consideration
F11: Hikiä–Kynnar–Inkoo line	400	100	New 400 kV AC single-circuit OHL of 100 km to reinforce transmission capacity for EstLink 3 and possible new industrial green investments.	2031	Planning/Under consideration
F12: Ridge Line	400	450	New 400 kV AC double-circuit OHL of 450 km from Kainuu region to southern Finland.	2032	Planning/Under consideration
F12: Petäjäskoski–Herva line	400	94	New 400 kV AC OHL between Petäjäskoski and Herva (over the P0 cut in northern Finland).	2032	Planned/Under consideration
Norway					
N1: Finnmark	420	NA	New 420 kV lines through Finnmark to improve reliability and increase capacity for new consumption and power production. Extending the 420 kV grid from Skillemoen to Skaidi, and from Skaidi further to Hammerfest and to Varangerbotn in Eastern part of Finnmark.	2030	Skillemoen–Skaidi built and operated temporarily at 132 kV. Permission received for Skaidi–Hammerfest. Seeking permission for Skaidi–Lebesby and Lebesby–Seidafjellet (Varangerbotn).
N2:NO3–South in NO4 Namos/Tunnsjødal–Nedre Røssåga	420	NA	Statnett is planning to replace the current 300 kV line between Verdal and Tunnsjødal with a new 420 kV line between Namsos (NO4) to Nedre Røssåga (NO3). This will increase the north-south capacity.	NA	Planned/Under consideration
N3: Through Mid–Norway	420	119	New 420 kV lines in Mid–Norway (Fosen) in order to facilitate new wind production and increased consumption. It involves a new line and a submarine cable (7 km) under the Trondheimsfjord between Åfjord–Snilldal, and a new 420 kV line that replaces the existing 47-km, 300 kV Surna–Viklandet line.	2029	First part was taken into operation in 2019. Second part (Åfjord–Snilldal and Surna–Viklandet) under planning.

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
N4: Sogndal–Sauda (Western Norway)	420	NA	Voltage upgrades (420 kV) from Sogndal to Sauda in western Norway. Increases the north-south capacity in general and enables higher utilisation of other parts of the grid in southern Norway. Facilitates increased consumption in the Bergen and Haugesund areas.	2033-35	Several sub-projects in different phases
N5: South (Eastern corridor)	420	NA	New 420 kV line from the Kristiansand/ Arendal area in the south to the Grenland area further north-east, increasing transmission capacity between southern and eastern Norway.	NA	Planned/Under consideration
N8: Greater Oslo	NA	NA	Several sub-projects involving the renewal and voltage upgrade of transmission lines/ cables and stations in the Greater Oslo area. Improves reliability and increases capacity to both consumption in the area and transmission through the area.	NA	Planned/under consideration
N7: Sunndalsøra–Oslo (Mid-Norway-Oslo)	420	NA	Renewal and voltage upgrade (420 kV) from Sunndalsøra in Mid-Norway to the Oslo area. Increases the transmission capacity north-south as well as the capacity for new consumption and production locally. It includes new lines such as Lillehammer–Hadeland; Lillehammer–Oslo (120 km); Nedre Vinstra–Fåberg and Vågåmo–Øvre Vinstra–Nedre Vinstra in addition to upgradation and renovation of several substations.	2040	Planned/Under consideration.
Sweden					
S1: North–South SE2–SE3	400	2,000	A set of almost 50 different projects, which will increase the capacity between bidding zones SE2 and SE3. Old 400 kV and 220 kV lines will be replaced by new 400 kV lines with a higher transfer capacity. The first replacement is planned for 2033. The capacity between bidding zones will increase from the current 7,300 MW to more than 10,000 MW. It includes 2,000 km of OHL and 35 substations.	2027-2040	Planned/Under permitting/ Under construction
S2: Stockholms Ström and Stockholm Väst	400	NA	A series of projects to reinforce and reinvest the larger Stockholm area. Several 220 kV lines will be replaced by 400 kV lines, with projects including the City Link (Upplands Väsby–Haninge) scheduled to come online in continuity up to 2031. Stockholms Ström comprises around 50 sub-projects and also involves other network owners, Vattenfall Eldistribution and Ellevio. Storstockholm Väst will replace the current 220 kV connections on the Hamra–Överby–Beckomberga–Bredäng–Botkyrka–Kolbotten route and include a new 400 kV Odensala–Överby line and several new transformer stations.	2031	Planned/Under construction
S3: Gotlandsförbindelsen or Gotland Connection	220	NA	220 kV D/C submarine AC cables with transmission capacity of 220 MW each are proposed to be built between mainland Sweden (Misterhult) and Gotland (Stenkumla).	2031-32	Under permitting

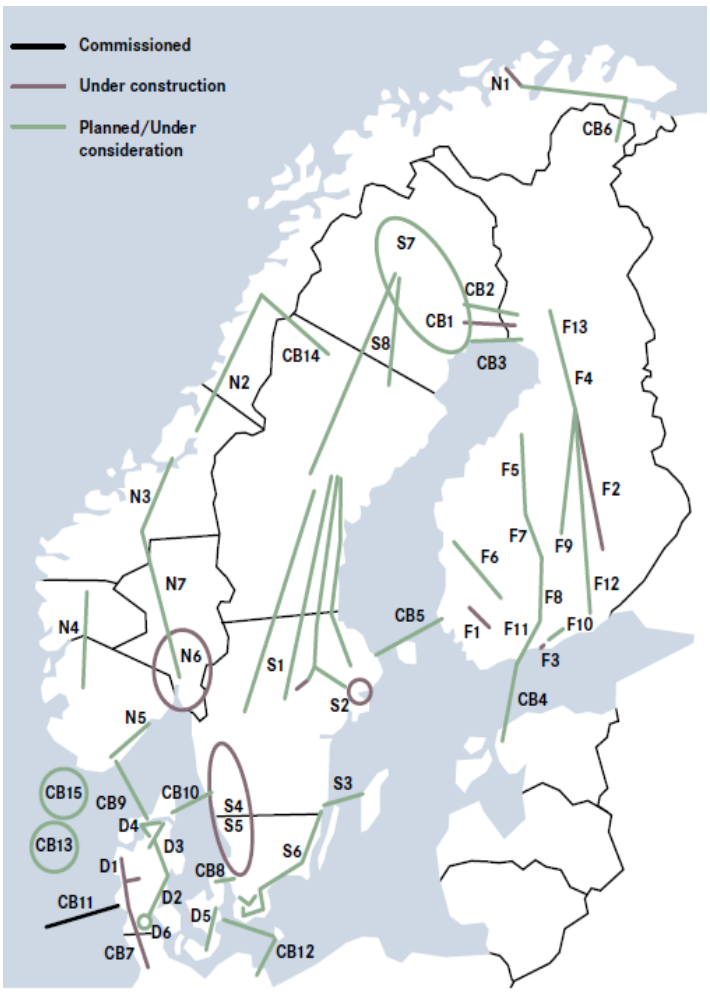
Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
S4: Göteborg Norr	400	NA	Reinvestment and reinforcement of 400 kV AC lines that will increase capacity to western Sweden in SE3. This includes new lines such as Ingelkärr–Stenkullen and Skogssäter–Ingelkärr lines as well as renewal of Borgvik–Skogssäter and Skogssäter–Kilanda lines, along with two 400 kV substations at Stenungsund and Ingelkärr and a new transformer at Hisingen substation.	2026-2038	Planned/under consideration/ under construction
S5: Västkustpaketet	NA	NA	It will provide connection to new sources of production and remedy limits on power flows going east-west. It includes renewal of lines including Breared–Söderåsen; Skogssäter–Kilanda; Horred–Breared; Stenkullen–Horred; and Kilanda–Stenkullen.	2025-31	Planned/Under construction
S6: Skåne	NA	360	Three large investment packages to increase connection of intermittent production in northern Skåne. It will also increase redundancy around Malmö, increase capacity in southern Sweden and help with interconnectivity to the continent.	2038	Planned
S7: SE1 reinforcement	NA	NA	Internal reinforcements in SE1 to connect industrial consumers	NA	Under permitting
S8: SE1-SE2	400	250	Reinvestment and reinforcement of 400 kV D/C OHL.	2035	under consideration
Cross-border projects					
CB1: Aurora Line	400	380	Third 400 kV AC connection between Finland and Sweden. Aurora line project has PCI status. This line will be series compensated. The line will increase trading capacity and the possibility to exchange system services as well as increase the power adequacy in Finland.	2025	Under construction
CB2: Aurora Line 2	NA	NA	Fourth AC connection between Finland and Sweden.	2034	Planning/Under consideration
CB3: Svartbyn–Keminmaa reinforcement (Sweden-Finland)	NA	NA	Reinforcement of an existing power line. Initially, the plan was to change the conductors for more transmission capacity. However, now other solutions are under consideration.	NA	Planning/Under consideration
CB4: EstLink3	HVDC	NA	Third HVDC link between Finland and Estonia with a capacity of 1,400 MW.	Post 2035	Planning/Under consideration
CB5: Fenno–Skan 3 (Sweden-Finland)	HVDC	NA	Renewal of Fenno–Skan 1 (HVDC link in service since 1989) to add 800 MW capacity. In May 2025, Fingrid and Svenska kraftnät agreed to launch the planning of this third submarine cable connection.	2038	Planned/Under consideration
CB6: Increased capacity Norway–Finland	NA	NA	Statnett and Fingrid have signed a memorandum of understanding and are considering different technical solutions to better control power flows on the existing line and increase the cross-border capacity.	NA	Planned/Under consideration
CB7: The West Coast project (Denmark West–Germany)	400	92	The west coast project is a project of a double 400 kV line from Endrup to Klixbüll, where it is to connect with two 400 kV lines being built up along the German western coastline in Schleswig Holstein. This project increases the possibility of exporting and importing electricity across the border from 2,500 MW to 3,500 MW.	2026	Under construction

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
CB8: Reinvestment of Øresund (System 2)	400 kV and 132 kV	NA	Energinet owns and operates four Øresund connections that connect Zealand and southern Sweden, in collaboration with Svenska kraftnät in the form of two 400 kV connections and two 132 kV connections. The reinvestment of the 400 kV connection (System 2), which is owned by Energinet, has been approved in Denmark in 2023. Construction is planned to begin in early 2026.	2026	Planned
CB9: Reinvestment Skagerak 12	HVDC	NA	Statnett and Energinet are investigating a possible reinvestment of Skagerrak 1 and 2. Preliminary studies show that a reinvestment would be mutually beneficial. Statnett is consulting on a proposal for the related study programme and the Norwegian Water and Resourced and Energy Directorate (NVE) has established a final study programme. A possible reinvestment will require approval from the energy authorities in both countries.	2027	Planned/Under consideration
CB10: Reinvestment Konti–Skan	HVDC	NA	Svenska kraftnät and Energinet are designing the project, preparing for route studies and determining expected costs of the connection. Prior to tendering for converters and cables, a joint final investment decision is expected in 2026/2027.	NA	Planned/Under consideration
CB12: Denmark–Bornholm Energy Island (BEI)–Germany	HVDC	NA	BEI is a joint hybrid offshore project with German TSO 50Hertz, to connect 3 GW OSW in the Baltic Sea to both the Danish and German markets. In January 2025, it was announced that the necessary legal framework is not in place to launch the next phase of BEI. Therefore, the potential continuation of the project awaits a further dialogue on BEI between the Danish government and the new German government, the necessary legal framework and how Denmark can contribute to the German demand for green electricity.	NA	Under consideration
CB13: North Sea Energy Island	HVDC	NA	In August 2024, Denmark postponed its North Sea Energy Island (NSEI) project, which has a potential for expansion up to 10 GW OSW, by at least three years from the initial completion date of 2033. This is due to high costs and the need to secure additional financing, with Denmark seeking co-investors from Germany (instead of Belgium). Previously, the energy island was to be connected to the west coast of Denmark and Belgium and be prepared for connection with other European countries. The connection from Denmark to Belgium through the energy island is a project called Triton Link, which has also been postponed. As per the latest update, the North Sea hub is planned as a series of transformers and platforms for 2 GW OSW with 2 GW connections to Denmark and other countries. The various proposed projects have no firm commissioning dates yet.	NA	Under consideration

Project	Voltage (kV)	Line length (km)	Description	Completion date	Status
CB14: Upgrade Norway–Sweden power line	420	NA	Svenska kraftnät and Statnett are investigating the possibility of upgrading the existing 220 kV line between Nedre Røssåga (NO4) to Grundfors (SE2) to 420 kV.	NA	Under consideration
CB15: Hybrid connections	HVDC	NA	In line with the Norwegian Ministry of Energy's request, Statnett investigated possible grid solutions (including hybrid connections) for the development of OSW in the southern North Sea. The analyses show the possibility to connect 2.8 GW of OSW connections to southern Norway with the planned onshore grid reinforcements.	Late 2030s	Under consideration

Note: CB11 is the Viking Link, a 1.4 GW HVDC link between Denmark and the UK, which was commissioned in 2023.
OHL-Overhead line; AC - alternating current; HVDC – high voltage direct current; NA – Not available.
Source: Nordic Grid Development Perspective 2025

Figure 1: Map of grid development projects in the Nordics



Source: Nordic Grid Development Perspective 2025

Massive transmission investment

Large investments are expected across the region, driven by the ongoing electrification, which requires a substantial buildout of the Nordic transmission grid. Energinet plans to invest around DKK40 billion in the Danish transmission grid from 2025 to 2028, of which approximately 20 per cent is for reinvestments and the remaining 80 per cent for reinforcements.

Fingrid will build 6,100 km of new transmission lines during 2024-33 at an annual investment of approximately EUR400 million per year. Statnett plans to invest over NOK150 billion in the Norwegian transmission grid and digitalisation over the next decade, with many grid measures involving reinvestments to increase the transmission capacity by upgrading the existing 300 kV network to 420 kV.

Svenska kraftnät plans to build around 1,500 km of new transmission lines and renew another 2,500 km of existing transmission lines during 2024-33. The investments in the transmission grid are expected to reach SEK57 billion during 2026-28 and between SEK17 billion and SEK22 billion annually during 2029-33. Together, the Nordic TSOs will build about 15,000 km of lines and invest around EUR36 billion over the next decade.

The way forward

A strong and resilient transmission grid is the backbone of the energy transition and the Nordic TSOs remain committed to expanding grid capacity at the right pace and magnitude, while ensuring a safe and efficient system operation. This requires effective governance and a supportive regulatory framework, including a more efficient permitting process and a regime that enables anticipatory investments. Energy transition is a joint effort and all stakeholders need to work in tandem to achieve the region's carbon neutrality goals.◆

Nepal: Installed Capacity, Generation and Consumption

Nepal's electricity sector is dominated by the state-owned, vertically integrated power utility, Nepal Electricity Authority (NEA). About 70 per cent of the installed capacity in the country is owned by the NEA, while the remaining capacity is owned by independent power producers (IPPs).

In July 2015, the government established Rastriya Prasaran Grid Company Limited (RPGCL) as a separate transmission company to develop and operate transmission lines for transmitting and evacuating power from hydropower plants. Initially, it was run by an interim management team comprising representatives from the Department of Electricity Development, the Ministry of Finance, and the NEA, but as of 2025, the company has a full-time CEO, five board members, and a chairman from the government and the NEA.

To develop its hydropower potential, the government established Vidhyut Utpadan Company Limited (VUCL) in November 2016 to implement hydropower projects on a public-private partnership (PPP) basis. Separately, the NEA established a power trading company, Nepal Power Trading Company Limited (NPTCL), and an engineering and services company, NEA Engineering Company Limited (NEAEC).

The Ministry of Energy, Water Resources and Irrigation (MoEWRI) is responsible for developing the electricity sector. In 2019, an independent regulator, the Electricity Regulation Commission, was established to regulate the operations of the electricity sector. Its functions include tariff determination, encouraging competition, and protecting consumer interests.

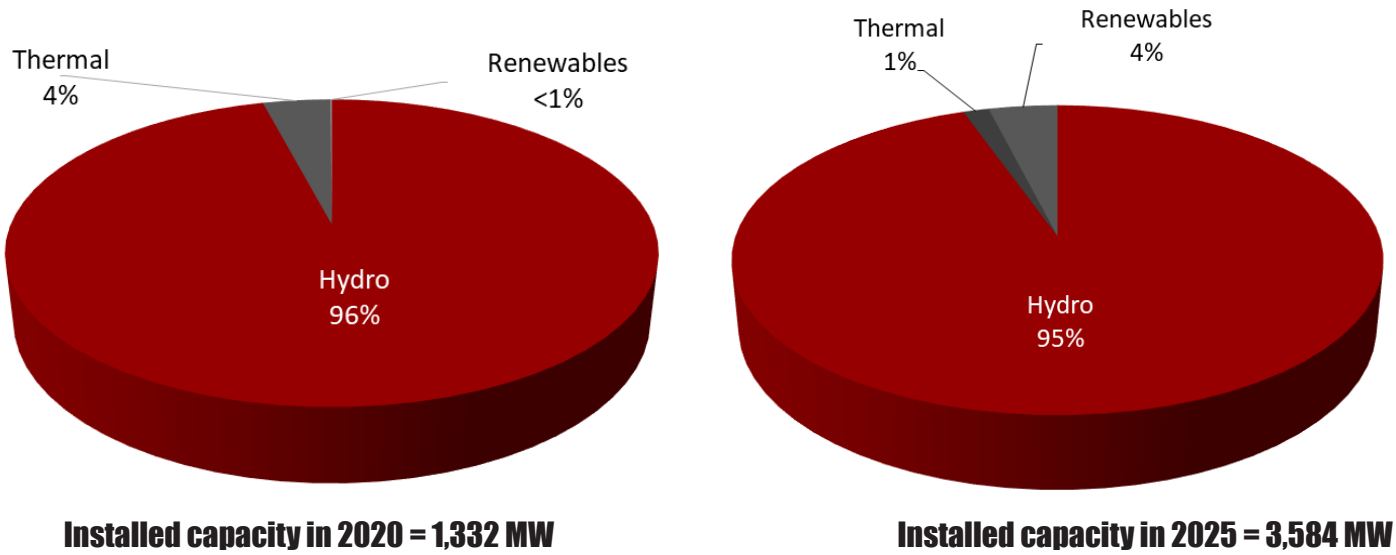
As of July 15, 2025, the country's installed power generation capacity stood at 3,584 MW, increasing at a compound annual growth rate (CAGR) of 21.9 per cent between 2020 and 2025. As of 2025, the majority of Nepal's installed capacity stood at 94.56 per cent. It was based on hydropower, followed by renewables at around 4 per cent while the remaining 1.47 per cent was contributed by thermal energy sources.

Table 1: Growth in Nepal's installed electricity capacity (MW)

	2020	2021	2022	2023	2024	2025
Hydro	1,278	1,397	2,082	2,538	2,991	3,389
Thermal	53	53	53	53	53	53
Renewables	1	1	54	93	113	142
Total	**1,332**	**1,451**	**2,189**	**2,685**	**3,157**	**3,584**
Annual growth rate (%)	-	8.9	50.9	22.6	17.6	13.5

Note: Data is for the fiscal year ending July 15 of the respective year
Sources: Nepal Electricity Authority; Ministry of Energy, Water Resources and Irrigation

Figure 1: Nepal's installed electricity capacity by source, 2020 and 2025 (%)



Installed capacity in 2020 = 1,332 MW

Installed capacity in 2025 = 3,584 MW

Note: Data is for the fiscal year ending July 15 of the respective year
Source: Nepal Electricity Authority

During the 2020-24 period, electricity generation and consumption recorded a CAGR of 19 per cent and 12.3 per cent, respectively, to reach 12,071 GWh and 10,219 GWh in 2024.

Table 2: Growth in Nepal's electricity generation and consumption (GWh)

	2020	2021	2022	2023	2024
Generation	**6,012**	**6,045**	**9,521**	**10,536**	**12,071**
Annual growth rate (%)	-	0.5	57.5	10.7	14.6
Consumption	**6,418**	**7,275**	**8,842**	**9,347**	**10,219**
Annual growth rate (%)	-	13.4	21.5	5.7	9.3

Note: Data is for the fiscal year ending July 15 of the respective year
Source: Nepal Electricity Authority

Nepal: Growth in Electricity Transmission Network

As of 2024, Nepal's transmission network comprised about 5,993 circuit km (ckt km) of line length. The majority of the network, at close to 70 per cent, consisted of 132 kV transmission lines.

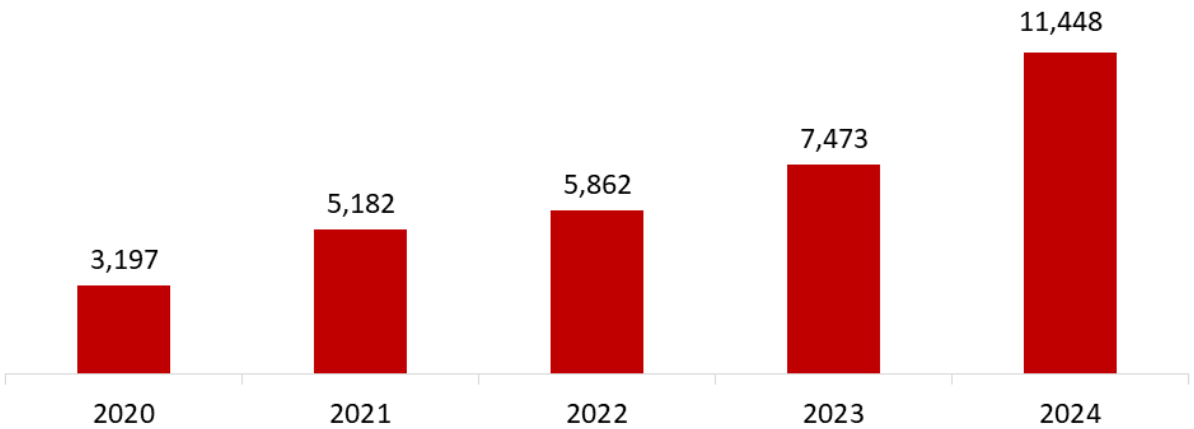
Table 3: Growth in Nepal's transmission line length (ckt km)

Voltage	2020	2021	2022	2023	2024
–132 kV AC	3,240	3,541	3,817	3,979	4,136
–220 kV AC	437	741	897	1,101	1,213
–400 kV AC	78	78	102	148	644
Total	**3,755**	**4,360**	**4,816**	**5,228**	**5,993**
Annual growth rate (%)	-	16.1	10.5	8.6	14.6

Note: Data is for the fiscal year ending July 15 of the respective year. Figures exclude the NEA's 514 ckt km of the 66 kV network
Source: Nepal Electricity Authority

As of 2024, Nepal's transmission network comprises about 11,448 MVA of transformer capacity at 132 kV, 220 kV and 400 kV AC voltage levels. The country added 220 kV and 400 kV voltages to its network only in 2017 to increase the transfer capacity of the existing grid network. The transformer capacity increased significantly at a CAGR of 29.06 per cent between 2020 and 2024.

Figure 2: Growth in Nepal's transformer capacity (MVA)



Note: Data is for the fiscal year ending July 15; Figures exclude 66 kV assets.
Source: Nepal Electricity Authority

Nepal: Planned Generation and Transmission Capacity

Nepal's recently released Energy Development Roadmap 2025 outlines plans to harness the country's significant hydroelectric power potential over the next decade, aiming to reach an installed capacity of 28,500 MW of hydropower by 2035. Of this. 15,000 MW will be intended for export, and the remaining 13,500 MW will be used for domestic consumption. The roadmap projects an increase in the domestic electricity demand to 40,710 GWh in 2035. It aims to increase the country's per capita consumption by nearly four times to 1,500 kWh, from the current 400 kWh. The government has also prepared an Energy Development Action Plan, outlining measures required to mobilise an estimated investment of NPR64 trillion by 2035.

By 2030, 7,805 MW of capacity is expected to be developed in the country, of which 3,906 MW is under construction. Some of the major projects include the 140 MW Tanahun project, the 216 MW Upper Trishuli - 1 project, the 226 MW Budhigandaki "Kha" project and the 106 MW Jagadulla project.

Nepal has been a significant exporter of electricity to India and became a net exporter for the first time in 2023-24. To further strengthen the trade, the two countries have signed a long-term agreement with India promising to purchase 10 GW of power over the next 10 years. Apart from its traditional partner, Nepal has set expectations to become an exporter of electricity to Bangladesh and China. As of June 2025, Nepal officially started exporting 40 MW of electricity to Bangladesh via India's 400 kV Muzaffarpur–Baharampur–Bheramara transmission line. In February 2025, Nepal and India signed a memorandum of understanding (MoU) to develop two 400 kV cross-border transmission lines, each spanning 125 km and 185 km, respectively. These lines are expected to facilitate the export of over 15 GW of electricity from Nepal to India and Bangladesh by 2035. Nepal has also signed a cooperation agreement with China to build cross-border transmission lines for power export to the latter by 2040 via the 80 km, 400 kV Chilime (Nepal)–Kerung/Jilong (China) line and another cross-border line via the Kimanthanka border point.

The NEA plans to strengthen its domestic transmission infrastructure by adding 8,631 ckt km of transmission lines and 18,321 MVA of transformer capacity by 2034. It is focusing on developing a 400/220 kV backbone network in the country with funding from the government and various multilateral finance institutions. It aims to build a transmission network capable of dealing with up to 20 GW of export by 2035.

For transmission grid expansion, the country has received support from various donor agencies such as the Norwegian Government, the Asian Development Bank (ADB), and the European Investment Bank (EIB). The Millennium Challenge Corporation (MCC), funded by the US government, is also supporting the development of 400 kV transmission lines in central Nepal.

Some key domestic projects are the 220 kV Lekhnath–Damauli line, the 132 kV New Khimti–Lamosanghu–Kathamandu line upgrade and an under-construction interconnector with India, the 400 kV Butwal–Gorakhpur project.

Table 4: Key electricity projects in Nepal

Project	Voltage (kV)	Line length (km)	Expected year of commissioning
Cross-border interconnectors with India			
Butwal (Nepal)–Gorakhpur (India) interconnector	400	94	2025/2026
Inaruwa (Nepal)–Purnia (India) interconnector	400	125	2027
Dodhara (Nepal)–Bareli (India) interconnector	400	185	2028
Domestic lines			
Hetauda–Dhalkebar–Inaruwa transmission line	400	288	2025
New Khimti–Lamosanghu–Kathmandu transmission line upgradation	132	45	2026
Lekhnath–Damauli transmission line	220	45	2026/27
Bafikot–Khungri transmission line	132	75	2027/28

Source: Nepal Electricity Authority; Global Transmission Report

North America

SPP secures funding for second phase of Markets+ development

Southwest Power Pool (SPP) has launched the second phase of development of the Markets+ initiative—an SPP regional, day-ahead energy market developed in collaboration with over 30 Western entities to enhance reliability, integrate renewable energy, and optimise transmission use by centralising day-ahead and real-time unit commitment and dispatch. This Western day-ahead and real-time market initiative remains on track for a 2027 launch, the grid operator said on June 30, 2025. This allows SPP to continue developing a more efficient, transparent and reliable energy market for its Western stakeholders and customers.

The second phase of the Markets+ initiative is backed by financing provided by Simmons Bank to cover the USD150 million needed for full market implementation. During this phase, stakeholders and staff will collaborate to develop the systems needed to operate the market, and conduct market trials and parallel operations.

SPP's funding agreement framework was approved in April 2025 by the Federal Energy Regulatory Commission (FERC). The agreement details how implementation costs will be recovered over the market's operational life, and so far eight utilities have signed on, including: Arizona Public Service, Bonneville Power Administration (BPA), Chelan County Public Utility District (PUD), Grant County PUD, Powerex, Salt River Project, Tacoma Power, and Tucson Electric Power. BPA joined SPP's Markets+ in March 2025, as opposed to a market being launched by the California Independent System Operator (CAISO). These utilities are located across the Desert Southwest, Pacific Northwest, and Mountain West regions of the Western Interconnection, and demonstrate regional commitment and collaboration.

Lydian Energy secures funding for 550 MW/1.1 GWh of Texas storage

Lydian Energy, a Washington, DC-based solar and battery storage developer backed by Excelsior Energy Capital, expects to bring online three two-hour battery energy storage system (BESS) projects totalling 550 MW in Texas in Q4 of 2025, as per an announcement by the company on July 9, 2025. These facilities, in the Electric Reliability Council of Texas (ERCOT) footprint, are under construction. Lydian has secured USD233 million in financing for these projects. ING served as the lender for the Pintail and Crane projects in San Patricio and Crane Counties, Texas, respectively. The 200 MW/400 MWh systems represent a combined investment of about USD139 million. KeyBank provided a USD94 million financing package for Headcamp, a 150 MW/300 MWh project in Pecos County, while KeyBanc Capital Markets structured the financing package. The projects were developed under Excelsior Energy Capital's Fund II, which closed at more than USD1 billion in April 2025. The tax credit bridge financings from ING and KeyBank are being complemented by co-investment capital from Excelsior's Fund II limited partners. Lydian confirmed it is pursuing additional financing for other projects that it expects to start building later in 2025. The company's development portfolio includes 20 solar and storage projects totalling 4.7 GW. The financial commitments by ING and KeyBank underscore growing institutional confidence in battery storage as a strategic asset class. Lydian's three Texas projects are part of a surge in energy storage development in the ERCOT market. ERCOT expects it will have 12,863 MW of storage on its system in September 2025, according to the grid operator's most recent Monthly Outlook for Resource Adequacy report.

There is an additional 998 MW of storage that ERCOT expects will be approved for grid synchronisation by the same month. In comparison, ERCOT had about 10,000 MW of storage capacity on its system by end-2024, up from about 4,650 MW in 2023.

Latin America

Brazil's ±800 kV Graça Aranha–Silvânia project achieves financial closure

Brazil's ±800 kV Graça Aranha–Silvânia high voltage direct current (HVDC) project achieved financial closure in July 2025. Brazil's Ministério de Minas e Energia (MME) or Ministry of Mines and Energy and energy agency Empresa de Pesquisa Energética (EPE) participated in the signing of a memorandum of understanding (MoU) for the project, on financial cooperation between State Grid Brazil Holding S.A. (SGBH), a Brazilian subsidiary of China's largest electricity transmission and distribution utility, State Grid Corporation of China (SGCC) and the New Development Bank (NDB), formerly referred to as the BRICS Bank, which is a multilateral development bank established in 2014 by the BRICS (Brazil, Russia, India, China and South Africa) nations. Graça Aranha Transmissora de Energia (GATE), SGBH's subsidiary, will develop and manage the HVDC transmission project. In another development, the MME minister virtually inaugurated the commencement of the construction of ±800 kV HVDC/500 kV alternating current (AC) Silvânia converter station, during an event in Goiás on June 30, 2025.

This converter station is a major component of the Graça Aranha–Silvânia HVDC project which aims to expand the exchange capacity between the north/northeast and southeast/centre-west regions of Brazil, and increase the reliability of the grid. It was proposed by EPE under its 'Estudo de expansão das interligações regionais – Parte II: Expansão da capacidade de exportação da região Norte/Nordeste', Relatório R1 (R1), or 'Study on the expansion of regional interconnections – Part II: Expansion of export capacity in the North/Northeast region', Report R1 (R1), study in January 2023. In December 2023, SGBH bagged the project after it emerged as the lowest bidder for the project, which was Lot 1 of Agencia Nacional de Energia Eletrica's (ANEEL) Transmission Auction No. 2/2023. This project entails the construction of two HVDC converter substations at Graça Aranha (in Maranhão) and Silvânia, a 1,468-km, ±800 kV HVDC transmission line connecting both substations, and passing through Tocantins, along with synchronous compensation systems of 3x(-300/+300) MVAr each at both substations. The work involves a total expected investment of BRL18.1 million. The transmission project is scheduled for energisation by 2029. The concession period for the transmission line is 30 years.

(BRL1=USD0.18)

Brazil's Potash secures funding to build transmission line in Amazonas

Brazil's mineral exploration and development company Brazil Potash Corporation, and Brazilian private equity firm, Fictor Energia, have entered a non-binding MoU worth USD200 million to fund the construction of transmission infrastructure for a potash mining project in Autazes, in the state of Amazonas. Under this agreement, Fictor Energia will handle the full scope of the transmission infrastructure development, including permitting, construction, and operation of the transmission system that will deliver 300 MW of electricity annually or approximately 80 per cent renewable-sourced grid electricity for the potash project. Fictor Energia will also manage this transmission infrastructure, which consists of a 102-mile (164-km) transmission line and associated substations, for 25 years, and then transfer their ownership to Brazil Potash. Fictor Energia has committed an equity investment of USD20 million in Brazil Potash. The first tranche of USD 2 million will be provided upon signing of the definitive agreement, with the remaining USD18 million to follow once the installation licence for the transmission line is secured. The transmission infrastructure is expected to be commissioned by July 2029.

Brazil's TAESA to issue non-convertible debentures to fund transmission projects

Brazil electric power transmission company, Transmissora Alianca de Energia Eletrica SA (TAESA), has announced its plan to issue non-convertible, unsecured debentures worth about BRL800 million, to raise funds for seven strategic transmission projects. TAESA plans to invest BRL90 million each – in the Saíra project to revitalise control systems at the Garabi I and II facilities, and the ATE-Reforços/2023 project to install the second 500/440 kV, 3×500 MVA autotransformer in Assis, respectively. It also plans to invest BRL350 million in the Ananaí project, which includes the construction of transmission lines; BRL49 million in the ATE III-HT301 project to reinforce the Itacaiúnas substation; and BRL170 million in the Juruá project for the construction of a substation and transmission lines. Finally, it will invest BRL60 million in its subsidiary, São Pedro Transmissora de Energia SA's transmission projects (REA 14.524-2023 and DSP 677-2024) for reinforcements in various substations. As per national securities regulator, Comissão de Valores Mobiliários (CVM) or Securities and Exchange Commission, the debentures will be issued on July 15, 2025. The offering is divided into two series, with a nominal unit value of BRL1,000 per debenture, which will be issued in registered and book-entry form. In addition, TAESA has selected an international credit rating agency, Fitch Ratings, to be the lead arranger for the process. The book-building procedure is scheduled for July 28, 2025, with financial settlement estimated for July 30, 2025.

(BRL1=USD0.18)

Asia Pacific

Indian Hartek Power and Bajel Projects secure grid contracts from POWERGRID

India-based Hartek Group's engineering arm, Hartek Power Private Limited (HPPL), and Bajel Projects Limited (BPL), an Indian electricity transmission and distribution (T&D) engineering, procurement, and construction (EPC) company, have secured EPC contracts from Power Grid Corporation of India Limited (POWERGRID), India's largest network developer, for projects aimed at integrating renewable energy into the national grid.

Hartek Power has won an INR1.38 billion turnkey contract for the development of a 400 kV air-insulated switchgear (AIS) substation, package SS-66T under the transmission scheme for the integration of renewable energy from the Davanagere, Chitradurga, and Ballari renewable energy zones (REZ) in Karnataka. Awarded to POWERGRID through the tariff-based competitive bidding (TBCB) route, the project includes complete design, procurement, construction, testing, and commissioning. This substation will be a critical node in evacuating renewable power from southern India's REZs. Bajel Projects has been awarded an EPC contract under POWERGRID's special purpose vehicle (SPV) POWERGRID Siwani Transmission for the construction of the 400 kV Siwani–Jind (POWERGRID) double circuit (D/C) quad transmission line, spanning approximately 99 km. Part of transmission line package TL04, this project falls under the REZ Phase-IV (Part 3: 6 GW) in the Bikaner Complex. The contract, also secured via the TBCB route, is expected to be completed within 18 months. The value of the order is between INR3-4 billion. Both projects are integral to India's broader renewable energy agenda, which targets 500 GW of non-fossil fuel-based capacity by 2030. By enhancing grid infrastructure in Karnataka and Rajasthan, Hartek Power and Bajel Projects are contributing to the nation's clean energy transition, and reinforcing the reliability and scalability of its transmission network.

(INR1=USD0.012)

Indian HGIEL secures Angul Sundargarh Transmission Limited from PFCCL

H.G. Infra Engineering Limited (HGIEL), an Indian infrastructure company specialising in EPC services for renewable energy sectors, has entered the inter-state transmission system (ISTS) sector with the acquisition of Angul Sundargarh Transmission Limited, marking its debut in the TBCB space. The SPV was transferred on July 28, 2025, by bid process coordinator PFC Consulting Limited (PFCCL), a wholly owned subsidiary of India's Power Finance Corporation (PFC), after HGIEL emerged as the L1 bidder, quoting a winning annual transmission charge of INR431.11 million, outbidding POWERGRID, India's largest power network company, and Tata Power. The project under the SPV is a part of the Eastern Region Generation Scheme-I (ERGS-I). It involves establishing a line-in line-out (LILO) of both circuits of the existing two 765 kV Angul–Sundargarh single-circuit (S/C) lines at the Talabira power plant switchyard of NLC India Limited, a government-owned fossil fuel miner and thermal power generator in Odisha. Notably, the project was re-tendered after the initial round, where only POWERGRID and Tata Power participated, which was annulled in January 2025. HGIEL was first reported to be the L1 bidder on June 12, 2025.

Estimated to cost INR4.13 billion, the project is targeted for completion by March 2028, and includes operation and maintenance responsibilities for a period of 35 years.

(INR1=USD0.012)

IFC and IndiGrid partner on Gujarat's largest utility-scale BESS project in India

International Finance Corporation (IFC), a member of the World Bank Group, has partnered with India Grid Trust (IndiGrid), India's first power sector infrastructure investment trust (InvIT), to develop a 180 MW/360 MWh standalone BESS project in Gujarat. This will be the largest utility-scale energy storage initiative in the state, aimed at supporting Gujarat's renewable energy ambitions by improving grid stability and ensuring dependable power during peak demand hours. As part of this partnership, IFC has committed INR4.6 billion in long-term financing to IndiGrid through listed non-convertible debentures. Of this, approximately USD38.5 million comes from IFC's own account, while USD16.5 million is sourced from the Clean Technology Fund (CTF), a multi-donor trust fund managed under the World Bank-hosted Climate Investment Funds framework. This investment builds on IFC's ongoing collaboration with IndiGrid. Since 2023, IFC has extended a total debt line of INR32.5 billion to the infrastructure trust.

The project marks a significant milestone in India's clean energy journey as the country targets 500 GW of clean energy capacity by 2030. The increasing integration of renewable energy sources such as solar and wind poses new challenges for grid reliability and peak load management. BESS projects like the one being deployed in Gujarat are viewed as key to addressing these challenges. With this initiative, Gujarat also moves closer to its target of 100 GW of renewable capacity by 2030, while setting a replicable model for other states to adopt scalable, next-generation, commercially viable energy storage solutions.

(INR1=USD0.012)

ACE secures NZD200,000 grant from New Zealand MFAT

The Association of Southeast Asian Nations (ASEAN) Centre for Energy (ACE) has received a NZD200,000 contribution from the New Zealand Ministry of Foreign Affairs and Trade (MFAT) to support regional efforts in advancing the energy transition. The funding will go toward the implementation of the ASEAN Plan of Action for Energy Cooperation (APAEC), ASEAN's key strategic framework for achieving energy security, accessibility, affordability, and sustainability across the region.

This grant marks a significant milestone in the 50th anniversary of ASEAN-New Zealand dialogue relations. The New Zealand Ambassador to ASEAN highlighted the importance of the partnership, noting that this first collaboration with ACE reinforces New Zealand's commitment to ASEAN's energy transition, particularly in areas such as the ASEAN Power Grid and renewable energy. APAEC serves as the region's blueprint for energy cooperation and comprises seven Programme Areas (PAs). Under the new grant, ACE will focus on three of these areas – ASEAN Power Grid (PA 1); Renewable Energy (PA 5) and Regional Energy and Policy Planning (PA 6).

The contribution from New Zealand underlines both parties' continued commitment to regional cooperation and sustainable energy development.

(NZD1=USD0.60)

Azerbaijan secures USD173.5 million World Bank loan for green energy grid upgrade

The Azerbaijan government has secured a USD173.5 million loan agreement with the World Bank under the 'Expansion of Renewable Energy Use in Azerbaijan' project to strengthen the country's electricity transmission infrastructure and support the integration of large-scale renewable energy into the national grid. The agreement, signed by AzerEnerji OJSC, Azerbaijan's vertically integrated energy company, and the International Bank for Reconstruction and Development (IBRD), includes a sovereign guarantee from the Azerbaijani government. The loan features a five-year grace period, a 15-year repayment term, and is set to be fully repaid by the end of 2039. Azerbaijan will also contribute USD31.2 million in co-financing to cover value added tax (VAT) and customs duties.

The four-year project will fund the construction of four new 500 kV and 330 kV transmission lines spanning 341 km, as well as the procurement of transformers and equipment for the new 500/330/10 kV Nəvahi substation. These upgrades are designed to modernise AzerEnerji's transmission network and enable the absorption of 1.8 GW of renewable energy over the next five years. The project is central to Azerbaijan's broader energy strategy, which aims to transform the country into a clean energy producer and exporter.

Europe

Swedish Export Credit Corporation to provide loan for UK's EGL2

The Swedish Export Credit Corporation (SEK) will be providing a EUR0.8 billion loan facility to the UK's National Grid Electricity Transmission (NGET) Plc to fund a portion of the Eastern Green Link (EGL) 2 connection. The approximately GBP5 billion EGL2 project is being developed by the UK's NGET and SSE Networks Transmission (SSEN Transmission) – the trading name for Scottish Hydro Electric Transmission (SHET), and the transmission business of SSE Plc (which owns 75 per cent of SSEN Transmission with Ontario Teachers' Pension Plan Board owning the remaining 25 per cent). This is the single largest-ever investment in electricity transmission infrastructure in the UK.

SEK is providing financing for Swedish and European exports to NGET's share of the project, including deliveries from Hitachi Energy. The loan to fund EGL2 construction has been classified as a green loan under international principles. EGL2 involves a HVDC submarine and underground cable (UGC) link of around 500-km route length between Peterhead in Aberdeenshire (Scotland) and Drax near Selby, North Yorkshire (England). With a power transmission capacity of 2 GW, the connection is expected to be one of the first cable systems in the UK to utilise 525 kV technology with extruded cross-linked polyethylene (XLPE) insulation. Following final approval from the UK's energy regulator, Office of Gas and Electricity Markets (Ofgem), in August 2024, construction for EGL2 is now underway with operations expected in 2029.

(EUR1=USD1.16; GBP1=USD1.33)

Iberdola completes capital increase of EUR5 billion for investments in US/UK grids

Spanish power utility, Iberdrola, has closed an accelerated capital increase of EUR5 billion, aimed at financing its investment plan in electricity grids in the US and the UK. The transaction was oversubscribed by 3.8 times, and is part of Iberdrola's growth strategy, focused on electricity grids in countries with high credit ratings and favourable regulatory policies. This expansion will allow Iberdrola to take advantage of investment opportunities in the network business, estimated at EUR55 billion between 2026 and 2031, representing an increase of 75 per cent compared to the previous period.

(EUR1=USD1.16)

Iberdola and Masdar to co-invest EUR5.2 billion in UK's East Anglia THREE

Spanish power utility Iberdrola and Abu Dhabi's leading energy company, Masdar, will co-invest EUR5.2 billion in the UK's East Anglia THREE offshore wind farm (OWF) – one of the largest offshore wind (OSW) transactions of the decade. All the conditions precedent have been achieved and the transaction is expected to close shortly. On July 9, 2025, the project financing for East Anglia Three was signed for approximately GBP3.5 billion with 24 international banks. Oversubscribed by 40 per cent, the facility is one of the largest ever such transactions. It will cover a substantial part of the total costs of the project, estimated at approximately EUR5.2 billion, without consolidating debt in any of the partners' financial statements. East Anglia THREE benefits from long-term revenue security through a 15-year consumer price index (CPI)-linked contract for difference (CfD) awarded in the UK government's Allocation Round 4 (AR4) and AR6 auctions, as well as a PPA with Amazon signed in 2024.

The 1.4 GW OWF, located in the Southern North Sea approximately 69 km from the Suffolk coast, will be the world's second-largest OWF, capable of powering over 1.3 million homes. The offshore grid development comprises one offshore converter station and up to four subsea export cables to transmit electricity from the offshore platforms to the shore. The onshore development works comprise of landfall at Bawdsey with onshore transition pits to join the offshore and onshore cables, two electrical, and up to three fibre-optic onshore UGCs, pulled through existing ducting laid by East Anglia ONE, running over 37 km from landfall to the connection point at Bramford; and an onshore converter station at Bramford to connect the wind farm to the existing Bramford substation of the UK's transmission system operator (TSO), National Grid. The onshore construction for the OWF began in 2022, and the entire OWF is expected to be completed in 2026.

(GBP1=USD1.33)

Dutch parliament grants institutional guarantee to TenneT Netherlands

TenneT Holding B.V has announced that the Dutch government has approved the state guarantee for TenneT Netherlands B.V., according to which the latter will receive an irrevocable and unconditional institutional guarantee from the State of the Netherlands extending to almost all the payment obligations of TenneT Netherlands. The state guarantee was approved by the House of Representatives of the Dutch Parliament on July 3, 2025 and by the Senate of the Dutch Parliament on July 8, 2025. The state guarantee is anticipated to be executed in the first half of September 2025. The transfer of all of TenneT Holding's senior debt instruments where the relevant financiers have accepted a transfer to TenneT Netherlands, including all its outstanding senior notes, is expected to take place in the second half of September 2025, which is within the envisaged timelines communicated as part of the consent solicitation conducted by TenneT for the senior notes.

Italy's Adriatic Link receives financing from EIB, SACE and Intesa Sanpaolo

Italy's TSO, Terna SpA, has signed financing agreements with European Investment Bank (EIB), Intesa Sanpaolo (IMI Corporate and Investment Banking Division), and Italian export credit agency SACE (formerly Servizi Assicurativi del Commercio Estero) for a total of EUR1.5 billion to back the development and construction of the 1 GW Adriatic Link.

The operation is financially structured into three tranches, all of which are covered by SACE's Archimede guarantee for an amount exceeding EUR1 billion:

- A EUR750 million loan granted by the EIB to Terna, with a duration of 22 years;
- A EUR500 million credit line provided by Intesa Sanpaolo to Terna, with a duration of seven years; and
- An additional EUR250 million loan from Intesa Sanpaolo, with funding made available by the EIB, for a duration of seven years.

The HVDC line will be 251 km in length, linking the Fano (Province of Pesaro and Urbino) and Cepagatti (Province of Pescara) electrical substations. 210 km will be submarine cable at a maximum depth of around 100 metres, and the rest will be underground, minimising the impact on the region.

(EUR1=USD1.16)

Terna issues first six-year European green bond worth EUR750 million

Italy's TSO Terna SpA, has launched the first fixed-rate, single-tranche, European green bond issue, with a total nominal amount of EUR750 million. The issue was oversubscribed by almost five times the offered amount with significant participation from specialised ESG funds. The European green bond was launched as part of Terna's new EUR4 billion Euro Medium Term Note Programme (EMTN) approved in June 2025 (and supplemented in July 2025) by the Commissione Nazionale per le Società e la Borsa (CONSOB) (the Italian Companies and Exchange Commission). The European green bond has a duration of six years and a maturity on July 22, 2031. It will pay an annual coupon of 3 per cent and will be issued at a price of 99.589 per cent, with a spread of 70 basis points over the mid-swap. An application will be made for the bond – at the time of the issue – to be listed on the Mercato telematico delle obbligazioni (MOT) managed by the Italian Stock Exchange (Borsa Italiana).

In accordance with European Union (EU) Regulation 2023/2631, it is expected that the net proceeds from the issue will be used to finance or refinance the company's eligible green projects, identified or to be identified based on Terna's green bond framework drawn up in July 2025, and aligned to the 'Green Bond Principles 2025' published by the International Capital Market Association (ICMA), and to the EU taxonomy aimed at facilitating sustainable investments. The transaction was supported by the following financial institutions, which acted as joint bookrunners: BNP Paribas, CaixaBank, Crédit Agricole CIB, IMI-Intesa Sanpaolo, J.P. Morgan, Santander, Sumitomo Mitsui Banking Corporation (SMBC), Société Générale, and UniCredit. The settlement date for the issue is scheduled for July 22, 2025.

(EUR1=USD1.16)

Middle East and Africa

South Africa secures AfDB and KfW concessional loans for Just Energy Transition

South Africa has obtained over ZAR19 billion in new concessional funding from the AfDB and Germany's KfW Development Bank, to support its JET strategy. The financing forms part of the government's third Development Policy Operation (DPO), which includes participation from the World Bank, KFW Development Bank, Japan International Cooperation Agency (JICA), and the Organisation of the Petroleum Exporting Countries Fund for International Development (OPEC Fund).

On July 24, 2025, the AfDB signed a USD474.6 million loan agreement to support infrastructure governance and the country's green growth programme. The loan carries a daily Secured Overnight Financing Rate (SOFR) plus 1.22 per cent, with a maturity of 15 years and a three-year grace period. Parallelly, KfW has approved a EUR500 million loan under equally favourable terms—a fixed interest rate of 4.31 per cent, a maturity of 13 years, and a three-year grace period. This loan agreement builds on the two policy loans concluded in 2022 and 2023, and forms part of Germany's pledge at COP26 to support South Africa's JET Partnership (JETP). Germany's three policy loans implemented by KFW, totalling EUR1.3 billion, form part of a larger package of JETP projects supported by the German government via loans, technical assistance, and grants. The latest two combined funding from AfDB and KfW aims to strengthen the operational and financial independence of the NTCSA, enable private investment in transmission infrastructure, and facilitate distributed generation-grid exports. Efforts will also focus on improving municipal distribution via smart metering and embedding up to 3,500 MW of renewable energy capacity by 2027.

This financing marks a major milestone in South Africa's energy transition agenda. South Africa's JETP, launched in 2021, has received substantial support from developed countries to aid the country's shift from fossil fuels to renewables. The strategy promotes inclusive economic growth by targeting decarbonisation, grid reform, institutional strengthening, reducing reliance on coal while improving energy security, and socio-economic stability with participation of disadvantaged communities. Together, the AfDB and KfW loans represent significant international confidence in the country's reform path and energy policy direction.

(ZAR1=USD0.056; EUR1=USD1.16)

South Africa's Red Sands BESS Project secures financial close

Globeleq, in partnership with African Rainbow Energy, has successfully achieved financial close for the 153 MW/612 MWh Red Sands BESS project in South Africa's Northern Cape. Marking a significant milestone under the country's Battery Energy Storage Independent Power Producer Procurement Programme (BESIPPPP), the Red Sands project is set to become the largest standalone BESS facility on the African continent. Located near Upington, the Red Sands BESS will span approximately five hectares and connect to the Eskom Garona substation. It will deliver essential grid services, including load shifting and stabilisation, helping reduce transmission bottlenecks. The project secured ZAR5.4 billion in debt financing from Absa and Standard Bank. It recently reached commercial close following agreements with the DEE and the NTCSA, which will serve as the power off-taker for a 15-year term.

Sungrow has been selected to supply its advanced PowerTitan 2.0 liquid-cooled energy storage system and will also provide 15 years of operations and maintenance (O&M) services to ensure reliable performance. China Energy Engineering Corporation will serve as the EPC contractor. Originally developed by African Green Ventures and acquired by Globeleq in 2023, the Red Sands project is expected to reach commissioning by 2027, and stands as a strategic initiative in South Africa's transition to a more resilient and renewable-powered grid.

(ZAR1=USD0.056)

IFC to extend development funding for Mozambique's Chimuara–Nacala project

The IFC, a member of the World Bank Group, will provide development funding to support Phases II and III of the Chimuara–Nacala transmission line in Mozambique. The 460-km transmission corridor is being developed by Gridworks, a subsidiary of the UK's development finance institution – British International Investment, in partnership with Electricidade de Moçambique (EDM), the national power utility. It is the country's first ITP, which is intended to connect the central and northern regions.

The USD400 million project's Phases II and III, which was first announced in June 2024, include the 272-km, 400 kV Alto Molócuè–Namialo line, 98-km, 220 kV Namialo–Nampula line, and 90-km, 220 kV Namialo–Nacala-à-Velha line, along with two new substations at Namialo and Nacala-à-Velha, and expansion of the Nampula substation. Construction of Phase I has already been completed by EDM. IFC's contribution for the remaining two phases includes partial funding of development costs and technical support to ensure adherence to IFC's Environmental and Social Performance Standards. It will also help mobilise broader project financing for the multi-phase, privately financed independent transmission initiative. The project is intended to strengthen grid reliability, promote industrial growth, and facilitate the integration of renewable energy sources in Mozambique's northern and central regions.◆

North America

Propel NY Energy Transmission Project, US

Developer: Partnership between the New York Power Authority (NYPA) and New York Transco (owned by affiliates of Con Edison, National Grid, Avangrid, Inc. and CH Energy Group)

Project details and status: The USD3.26 billion project, also known as the Propel Alternate Solution 5, has been proposed to transmit at least 3,000 MW of offshore wind (OSW) energy and provide operational flexibility under various conditions. It entails the installation of new underground and submarine cables to connect Long Island with the rest of New York, along with a 345 kV transmission backbone across the western and central parts of the island.

The Propel NY Energy project entails construction of 89.7 miles (144.4 km) of new underground and submarine transmission lines [approximately 78.5 miles (126.3 km) at 345 kV and 11.2 miles (18 km) at 138 kV], and direct interconnection with nine existing and/or new substations located within Suffolk, Nassau, Queens, Bronx, and Westchester counties.

The project has been divided into six segments – five at 345 kV, including the 8.6-mile (13.8 km) Barrett to Uniondale Hub underground cable (UGC), 23.5-mile (37.8 km) Uniondale Hub to Tremont (Consolidated Edison Company's existing substation) UGC; 10.4-mile (16.7 km) Uniondale Hub to Shore Road UGC; 17.8-mile (28.6 km) Ruland Road to Shore Road UGC, and 18.2-mile (29.3 km) Shore Road to Sprain Brook UGC as well as a 11.2-mile (18 km) 138 kV Syosset to Shore Road UGC segment.

It also includes four new 345 kV substations at Uniondale Hub in Uniondale, New York; one adjacent to the existing E.F. Barrett Generating Station in Oceanside, New York; the Shore Road substation at Oyester Bay and the Sprain Brook substation at New Rochelle.

Of the total new lines, two components are within New York State waters: an approximately 9.1-mile (14.6-km) crossing of the Long Island Sound between the Town of Oyster Bay and the City of New Rochelle, and an approximately 0.7-mile (1.1-km) crossing of the East River and an approximately 0.3-mile (0.5-km) crossing of the Westchester Creek in Bronx County.

In October 2021, New York Transco and NYPA submitted Propel NY Energy transmission solutions to the New York Independent System Operator (NYISO) through its competitive public policy transmission process, which was initiated to select the more efficient or cost-effective solution to address identified transmission needs by the Long Island OSW Export Public Policy Transmission Need (Long Island Need) study, which was initiated by the New York State Public Service Commission (NYPSC) in March 2021.

In April 2022, six Propel NY Energy solutions satisfied the identified needs to deliver OSW generation and were included in the NYISO's Viability and Sufficiency Assessment.

In June 2023, NYPA and New York Transco were selected through a competitive process by NYISO to bolster parts of the electric transmission network across sections of Long Island, New York City, and Westchester County.

In November 2023, New York Transco successfully obtained the required permits from NYSPSC for developing the transmission project. NYPSC approved USD1.4 billion in financing for the project.

In July 2024, the applicants filed an application for a Certificate of Environmental Compatibility and Public Need (CCPN) pursuant to Article VII of the Public Service Law. This comprehensive environmental and socio-economic evaluation involves multiple state agencies and is expected to carry on until mid-2026.

In July 2025, the NYPSC held in-person public statement hearings at Glen Cove and Mineola respectively, regarding the joint application of New York Transco LLC and NYPA to construct, operate, and maintain the transmission project.

The final approval of the CCPN, which is expected by July 2026, will authorise the applicants to construct, operate, and maintain the project.

The projectthe final approval is expected by July 2026.

The project is slated to undergo construction between 2026 and 2030 and is scheduled to become operational by May 2030.

345 kV Helix–Hiple Transmission Line Project, US

Developer: Michigan Electric Transmission Company (METC), a subsidiary of ITC Holding Corporation

Project details and status: The project is expected to improve the state's ability to import and export electricity, strengthen grid reliability, reduce grid congestion, and facilitate the integration of additional energy resources. It marks one of Michigan's first new interstate transmission lines in 50 years, and is part of the Midcontinent Independent System Operator's (MISO) Long-Range Transmission Plan (LRTP) Tranche 1 portfolio.

The transmission line project involves construction of new 345 kV, 55 miles (89 km) double-circuit (D/C) transmission line running between substations in Calhoun and Branch (near the Indiana border) counties, to the new Helix substation near Lansing.

In August 2023, following an extensive two-year review process, METC unveiled its primary and secondary route selections for the transmission line and Helix substation project. Within Branch County, after entering Michigan, the line angles northeast, reaching Steffey Road north of Southern Road. It proceeds northward through Bethel Township, west of Clearwater Road, and traverses between Batavia and Butcher roads near Lockwood Road. A substation is expected to be established near the Bethel Solar Farm. The line continues north, crossing US 12, before heading northeast towards Hodunk Road, where it proceeds north on the Batavia side of Hodunk into Union Township. It subsequently zigzags into Girard Township, located south of Sullivan Road. The route follows Hog Creek northeast, then turns east, just south of County Line Road, eventually crossing old US 27 and I-69. From there, the transmission lines continue northeast, east of Tekonsha. Within Calhoun County, the route turns north, east of the Clarendon Township line at T Drive S. It further extends north into Eckford Township, angling northeast near 19 Mile Road, before proceeding north into Marengo Township. The route continues north-northeast through Marengo Township, briefly crossing the southeast corner

of Lee Township before reaching Clarence Township. The journey concludes at the new Helix substation on V Drive N near 27 Mile Road.

Upon approval of the final route by the Michigan Public Service Commission (MPSC), ITC and METC will commence negotiations with landowners for the necessary right-of-way (ROW).

In October 2023, ITC held public meetings in several townships including Butler, Girard, Gilead, Bethel, Batavia, and Union to provide an informal opportunity for the project team to address questions and showcase detailed plans for the proposed transmission line.

In June 2025, a community meeting was held at the Girard Township Hall in Branch county to assist those against the project in submitting their objections to the MPSC.

In July 2025, the MPSC granted the certificate of public convenience and necessity (CPCN) for the project approving the primary route through Branch and Calhoun counties for construction of the line despite objections from numerous residents along the route. Clean Grid Alliance (CGA) and the Michigan Energy Innovation Business Council (Michigan EIBC) welcomed the approval.

The MPSC conditioned its approval based on a number of actions METC must take:

- METC must consider landowners' specific requests for minor modifications to the major transmission line route approved in its order. The PSC directed METC to file a memorandum in the case detailing how impacted landowners may submit minor route modification requests to the company and to file a monthly report documenting any minor modification requests.
- METC must provide landowners along the approved routes and adjacent landowners with contact information so that they can communicate concerns to METC about the projects. METC's monthly reports must detail all communication received from these landowners.
- METC must investigate every noise complaint received by landowners to ensure there is not a system issue that needs to be addressed.

Construction on Helix substation is scheduled to begin in Q4 2025 and be completed by Q3 2026. The line construction is expected to start by Q1 2029 and end in Q3 2030.

500 kV Timmins–Wawa Transmission Line Project, Canada

Developer: Hydro One, Ontario's largest transmission and distribution company

Project details and status: The project is set to meet surge in demand for clean electricity in the coming decades in northern Ontario, and the other provinces of the country.

The project entails construction of 500 kV, 260-km Timmins–Wawa single-circuit (S/C) transmission line, which is set to connect the Porcupine Transfer Station (TS) in the city's east end, through the Chapleau area, to the Wawa TS. It is currently in the class environmental assessment phase.

In 2023, the Independent Electricity System Operator (IESO), which is an independent and federally regulated entity that coordinates regional transmission to ensure non-discriminatory access to the electric grid conducted needs assessment to identify the growing demand for electricity needs in the region. IESO has been consulting this project since 2023.

In January 2025, Ontario's Ministry of Energy and Electrification directed the Ontario Energy Board (OEB) to amend Hydro One's transmission licence so that it can proceed with developing and constructing the project.

In July 2025, Hydro One organised an open house in South Porcupine, to gather public input on the Timmins portion of the route of the transmission line.

Hydro One aims to finalise the preferred route by the end of 2025. The company plans to organise another public comment for the draft environmental study report in the summer of 2026. After that, final submission of the environmental study will take place by the end of 2026, followed by permitting in 2027, and construction in 2028.

The project is expected to be completed and operational by late 2030.

North Coast Electrification Project, Canada

Developer: BC Hydro, Canada's electric utility, in the province of British Columbia (BC)

Project details and status: The project will help accommodate the increasing demand for electricity from industrial users in the North Coast of BC, which has been experiencing significant industrial growth. The phased 500 kV project will help strengthen the power supply in northern BC, support port activity and economic growth, as well as lead to emissions reduction.

The proposed project entails the construction of 445 km of 500 kV transmission lines and associated infrastructure – Prince George to Glenannan Transmission Project (PGGT) and Glenannan to Terrace Transmission Project (GTTT). PGGT, the first phase project, involves the 170-km Williston–Glenannan line with expansion of a capacitor station and the Williston substation. GTTT, the second phase project, involves the 130-km Glenannan–Telkwa and 145-km Telkwa–Skeena lines, besides the possibility of new capacitor stations and substation expansions.

Additional infrastructure for both phases includes fibre optic cable installed on new or existing transmission structures, capacitor station expansion, and substation upgrades or expansion. BC Hydro plans to upgrade the existing 500 kV transmission lines between the Williston and Skeena substations.

It also proposes to develop new transmission infrastructure from the Skeena substation near Terrace to the Bob Quinn substation via Aiyansh and Meziadin substations, to connect industrial customers that have advanced their request to interconnect to the electric utility's system. Depending on the customer demand and location, the company may expand the transmission system from Skeena southward to Kitimat and westward to Prince Rupert. A new transmission line is planned from the Rupert substation to the Port of Prince Rupert, along with potentially expanding the Rupert substation, and develop a new substation on or adjacent

to port lands. This new infrastructure will enable the utility to respond to requests for more electricity from customers located near the port.

To make the most effective use of the existing 500 kV infrastructure from Prince George to Terrace, and ensure the reliable delivery of electricity needed around the North Coast, BC Hydro is proposing to make upgrades along the lines, including thermal upgrades and installing anti-cascading towers.

The purpose of thermal upgrades is to increase the distance between the transmission lines and the ground to step up the amount of electricity that the lines can carry and, along with the new transmission lines, increase the amount of electricity available to serve customers in the North Coast region. The new anti-cascading towers will limit the potential for a "domino effect" in the unlikely event a tower fails. This will enable the utility to limit damage and more quickly restore power should there be an issue on the lines.

In February 2023, BC Hydro launched the expression of interest (EOI) process to help determine the need for the transmission infrastructure. The EOI also supported community and First Nations engagement. In order to explore potential co-ownership alternatives for transmission infrastructure, BC Hydro had also initiated discussions with the local First Nations. By taking new approaches to partnering with them, new infrastructure projects could facilitate economic development and positively contribute to indigenous communities. The EOI was open from February 15 to April 11, 2023.

In May 2023, BC Hydro hosted six open house consultations in various locations including Vanderhoof, Fraser Lake, Prince George, Terrace, Smithers and Burns Lake to discuss the project. It also organised two virtual open houses on May 23 and 31, 2023.

In December 2023, a coalition of indigenous leaders advocated expediting BC Hydro's plans for the project, aiming to enhance hydroelectric capacity on British Columbia's north coast. The initiative is backed by K'uul Power (a non-profit fostering collaboration between First Nations and BC Hydro).

In January 2025, the BC government announced significant regulatory changes to accelerate the North Coast Transmission Line project. The province appointed the BC Energy Regulator (BCER) as the one-window regulator for permits necessary to support the NCTL and other high-voltage electricity transmission projects, streamlining the approval process.

In June 2025, open houses for Phase I were organised at Prince George, Vanderhoof, and the Fraser Lake and that for Phase II were held in Terrace, Smithers, Houston, and at the Burns Lake. Further, two more online open houses were held. The utility is at the early stages of planning the route, including considering the option to generally follow the Northwest Transmission Line corridor, where possible. Environmental fieldwork, already underway, includes wildlife, waterway, vegetation, and archaeological studies. Preferred route selection is ongoing.

Further, BC Hydro continues to engage with existing and potential customers to understand their plans, including with potentially impacted First Nations to understand their interests and concerns. It will then review its existing infrastructure to understand what the existing infrastructure can handle and the type of new infrastructure that may be needed, including new transmission line and substation infrastructure.

BC Hydro has indicated a typical timeline of eight to ten years for regulatory processes and construction. RoW clearing and access work is expected to be completed in early 2026. This will enable construction to commence on Phase I of the project by the summer of 2026. Phases I and II of the project are expected to be energised by the end of 2030 and by mid-2032, respectively.

Latin America

500 kV AMBA Stage I project, Argentina

Developer: Yet to be decided

Project details and status: The project aims to expand the existing electricity supply capacity in the Área Metropolitana de Buenos Aires (AMBA) - the Metropolitan Area of Buenos Aires - to enable the supply of renewable energy to the region as well as strengthen the energy infrastructure of AMBA.

The goal is to ensure reliable operations and a safe electricity supply in one of the country's main consumer centres, where 40 per cent of national energy demand is concentrated. It will also help make Argentina's Sistema Argentino de Interconexión (SADI), the Argentine Interconnection System, more efficient.

Proyecto de mejoramiento de la Red Nacional 500 kV AMBA Etapa I or the Project to improve the 500 kV National Network in AMBA Stage I entails the construction of the 500/220/132 kV Plomer transformer station and more than 500 km of 500 kV, 220 kV and 132 kV lines. The investment required for this project is USD1.1 billion.

The project is part of the Framework Agreement for Cooperation in Economic and Investment Matters between the Government of the Argentine Republic and the Government of the People's Republic of China.

Recently, in January 2022, the Government of Argentina awarded a contract to China Electric Power Equipment and Technology (CET), a subsidiary of state-owned State Grid Corporation of China (SGCC), to engineer, design, supply and construct the project. The work provides for the updating of the SADI systems, both automatic response and cybersecurity, to prevent new challenges.

In December 2024, Argentina announced that the project, initially planned to be financed through an agreement with China, will now be undertaken by private companies. The investment will be pre-financed by the private sector, with costs recouped through fixed charges applied to user tariffs nationwide over the next two to three years.

In July 2025, Ministerio de Economía, the Ministry of Economy of Argentina, announced that the project will be tendered under a concession model to national and international private investors. The project is part of Plan Nacional de Ampliación del Transporte Eléctrico or national electric transmission expansion plan, through Resolution 311/2025. The Energy Secretariat will determine the timing and sequence of the tender invitations.

Kimal–Lo Aguirre HVDC Transmission Line Project, Chile

Developer: Conexión Kimal-Lo Aguirre, a unit of Conexión Energía comprising Chile's largest transmission firm Transelec, Colombia's Interconexión Eléctrica (ISA) and China Southern Power Grid International (CSG).

Project details and status: The project was proposed by Chile's national energy commission, Comisión Nacional de Energía (CNE), under its Annual Transmission Expansion Plan for the Sistema Eléctrico Nacional (SEN) or national electric system and zonal transmission system, for 2018.

The USD 1,480 million project entails the construction of a 1,346-km long, ±600 kV high voltage direct current (HVDC) line between the Kimal and Lo Aguirre converter substations, with the transmission capacity of each end being at least 3,000 MW. The use of HVDC technology is relatively new to Chile and is a distinctive feature of this project.

In September 2019, the Chilean government initiated the route study for the ±600 kV line. The project will be the first to be covered under the zone study system, devised by the government to reduce social conflicts linked to the construction of any infrastructure.

In September 2020, Chile's Ministry of Energy revoked its decision to conduct a field study to determine the route of the project. The COVID-19 pandemic played a role in this, as conducting a study would require on-site visits, which were difficult to carry out under the circumstances.

In October 2020, CEN published the tendering schedule for the HVDC project and launched its tender.

In November 2020, CEN gave interested parties access to the preliminary technical documents for the project. Around 60 parties showed interest in the project. The documents included the general technical specifications of the project, HVDC specifications, a series of addendums, forms and other technical documents.

In February 2021, CEN officially launched an international tender for awarding the rights of execution for the project.

In October 2021, two consortiums submitted bids to compete in the international tender for this transmission line. The first was Conexión Energía, comprising Chile's largest transmission firm Transelec, Colombia's ISA and CSG, while the second was the Meval consortium formed by Iberdrola Redes España, S.A.U and Celeo Redes Chile Limitada.

In December 2021, Conexión Energía, by submitting the lowest bid, was awarded the concession contract for the construction and operation of the project.

In March 2022, Chile's Fiscalía Nacional Económica (FNE) or National Economic Prosecutor's Office gave its approval to the Yallique consortium to build, operate and maintain this HVDC line in Chile.

Chile has set a goal of decommissioning all coal plants in the country before 2040. This HVDC project is therefore necessary as it will take advantage of the energy being produced by the upcoming renewable energy projects in northern Chile, which, due to the current congestion of transmission lines, are not being utilised at their full capacity.

In May 2022, Ministerio de Energía Chile or the Ministry of Energy announced that the project is scheduled to be operationalised in May 2029.

In November 2022, Conexión Energía officially launched the construction of the project.

In April 2023, Conexión Energía formally joined Transmisoras de Chile, an association that brings together the main electricity transmission companies in the country with a total high voltage (HV) transmission network of more than 16,000 km. Conexión was created by the shareholders for the construction of this project in Chile.

In October 2023, Conexión Energía submitted the environmental impact study (EIS) for the project to the Servicio de Evaluación (SEA) or Evaluation Service.

In February 2024, SEA published the first Informe Consolidado de Aclaraciones, Rectificaciones o Ampliaciones (ISCARA) or Consolidated Report of Clarifications, Rectifications or Extensions for the project. The ISCARA document contains over 1,600 comments from various stakeholders involved in the project, covering a wide range of topics. These comments must be addressed by the project developer by September 2024, through an Addendum.

In February 2025, SEA published the second ISCARA for the project.

In July 2025, Conexión Kimal-Lo Aguirre submitted a second addendum containing clarifications and corrections regarding the project, which is one of the final stages of the project's environmental approval process.

The project's construction phase is expected to last 51 months, with the assembly of the converter substations being the most time-consuming aspect. The project is scheduled for operation by the end of 2029.

Asia Pacific

±800 kV Shaanxi–Anhui UHVDC Project, China

Developer: SGCC and its subsidiaries, including the State Grid Anhui Electric Power Company Limited and State Grid Henan Electric Power Company

Project details and status: The ±800 kV ultra-high voltage direct current (UHVDC) project aims to be the country's most comprehensive energy base and hub for west-to-east power transmission. In Shaanxi, the project will be connected with 11 GW of new energy sources alongside 4 GW of supporting coal-fired plants. Once operational, the line will transmit over 36 TWh of electricity to Anhui annually, which will improve energy supply reliability in the region. Near its terminus in Anhui, the line will be connected to the 1.2 GW Yuexi pumped hydro station that uses reservoirs at different heights on mountains to store energy.

The 8 GW UHVDC project involves the construction of a 1,069-km line starting from the Baotashan converter station in Yan'an,

Shaanxi province, and ending at the Hezhou converter station in Hefei, Anhui province, also passing through the province of Henan. This includes the construction of 323-km lines across 672 new iron towers in Anhui, 490 km across 1,002 new towers in Henan (passing through 15 counties and districts in five cities, namely Sanmenxia, Luoyang, Pingdingshan, Zhumadian, and Nanyang), and the remaining line length in Shaanxi.

The line involves an investment of CNY20.5 billion. The Baotashan converter station will collect solar, wind power and energy-efficient thermal power from Shaanxi through a 750 kV alternating current (AC) system, while the receiving end connects to the load centre in Anhui.

The project's Anhui Section 1 passes through Linquan County, Yingzhou District and Funan County in Anhui Province, beginning at the intersection of Henan and Anhui and concluding at the intersection of Funan County and Yingshang County in Anhui Province. With 236 new towers, comprising 178 straight towers and 58 tension towers, this section is 111.930 km long.

In March 2024, SGCC commenced construction on the project.

In June 2024, Shanghai Power Transmission and Transformation Company, the contractor for Anhui Section 1, began work on the foundation of the section.

In October 2024, SGCC commenced civil construction of the ±800 kV Baotashan converter station. This is the civil engineering Package C of the works being undertaken by Jiangxi Hydropower, which includes crucial infrastructure such as foundations for 750 kV AC filter fields, lightning towers, a 750 kV step-down transformer relay room, station transformer, reactive power compensation device, and other related equipment.

In the same month, SGCC awarded a contract to Hitachi Energy to supply advanced HVDC converter valve equipment for the Hezhou converter station. Hitachi Energy will also provide AC filter capacitors for the station to achieve harmonic filtering and reactive power compensation in the HVDC transmission system, and improve the overall performance of the transmission line through high-quality and high-reliability capacitors.

In November 2024, State Grid Anhui Electric Power Company Limited advanced the construction of the Anhui section of the project by inducting it into the tower assembly and line-stringing phase (after completion of the tower foundations), with the construction personnel of its contractor, Anhui Electric Power Construction Company, assembling the first iron tower for the section.

In July 2025, installation of the ±800 kV gas-insulated switchgear (GIS) equipment began at the Baotashan converter station. The equipment was supplied and installed by the Chinese state-owned power and engineering company, China XD Group.

Later in the month, State Grid Henan Electric Power Company carried out on-site safety inspections at the construction site of a project intersecting a highway in Henan province. The panoramic monitoring system was leveraged to oversee critical operational activities, with the aim of enhancing safety management and oversight for UHV construction.

Progress on the Shaanxi–Anhui UHVDC line has advanced steadily, with 94 per cent of the foundation laid, 58 per cent of the tower assembly complete, and 30 per cent of the line stringing now finished.

The project is expected to be completed in 2025-26.

(CNY1=USD0.14)

500 kV China–Laos Interconnection Project

Developers: CSG – one of China's two major grid companies, and Electricite du Laos Transmission Company Limited (EDL-T), a joint venture between CSG and the state-run Electricite du Laos (EDL)

Project details and status: The project is part of the strategic initiative to foster a China–Laos community with a shared future. Upon completion, the project will contribute to the establishment of the Lancang-Mekong Regional Clean Energy Connectivity Centre, enhancing the region's clean energy infrastructure. The project will enable a two-way power mutual assistance capacity of 1.5 GW and facilitate the transmission of approximately 3 GWh of clean electricity.

It involves the construction of a 183.5 km, 500 kV transmission line connecting the new 500 kV substation in Oudomsenarou, Laos, to a substation in Xishuangbanna, Yunnan, China. Additionally, the project includes the development of two 230 kV lines to link the main power network in northern Laos. The Lao section will be developed by EDL-T, while CSG will be responsible for the Chinese section.

The Chinese segment will include a 145-km, 500 kV transmission line originating in the Dai autonomous prefecture of Xishuangbanna in Yunnan province and will extend to Laos, as well as the expansion of a 500 kV transformer substation in the prefecture, according to Yunnan Power Grid Company Limited, a subsidiary of the CSG, which is managing the project on the Chinese side.

This power interconnection project is part of a broader action plan to build a China–Laos community with a shared future. Once completed, it will support a two-way mutual assistance electricity capacity of 1.5 GW and facilitate the transmission of around 3 TWh of clean energy annually.

In February 2025, EDL-T and EDL held a launch ceremony in Vientiane, Laos, to mark the beginning of construction for the Lao section of the project.

In July 2025, CSG officially began construction on the Chinese section of the project.

The project is scheduled for completion in 2026.

Kudankulam ISTS Transmission Limited, India

Developer: Power Grid Corporation of India (POWERGRID), India's largest power network company

Project details and status: The project will implement the transmission system under interstate transmission system (ISTS) for evacuation of power from Kudankulam Unit-3 and Unit-4 (2×1,000 MW). The two units are being implemented by the Nuclear Power Corporation of India (NPCIL) at the Kudankulam Nuclear Power Plant (KNPP) in Tamil Nadu. The transmission infrastructure is designed to deliver clean nuclear energy to the southern states and Union Territories, including Tamil Nadu, Kerala, Karnataka, and

Puducherry, in response to the region's increasing power demand. This project will play a critical role in integrating nuclear power into the national grid, thereby enhancing grid reliability and contributing to long-term energy security.

The project involves establishing a 400 kV D/C (quad) transmission line to connect the Kudankulam Units 3 and 4 to the 400 kV Tuticorin-II GIS pooling station (PS); and the installation of GIS-based line-termination equipment at the Tuticorin-II PS. The line bays at the KNPP site will be implemented by NPCIL. The estimated cost of the project is INR5,480 billion.

PFC Consulting Limited (PFCCL), a wholly-owned subsidiary of Power Finance Corporation (PFC) Limited was nominated as the bid process coordinator (BPC) for tendering the ISTS scheme through the tariff-based competitive bidding (TBCB) process.

In June 2024, PFCCL incorporated the project-specific special purpose vehicle (SPV) – Kudankulam ISTS Transmission Limited – as its wholly-owned subsidiary to implement the ISTS scheme.

In December 2024, POWERGRID emerged as the lowest bidder and received the letter of intent (LoI) from PFCCL.

In July 2025, POWERGRID commenced construction of the project. The foundation stone was laid by the Indian prime minister during an official ceremony held in Tuticorin, Tamil Nadu.

The construction of the project is expected to be completed by December 2026.

(INR1=USD0.012)

500 kV Lao Cai–Vinh Yen Transmission Project, Vietnam

Developer: Vietnam Electricity National Power Transmission Corporation (EVNNPT), a subsidiary of state utility Vietnam Electricity (EVN)

Project details and status: The project aims to enhance electricity delivery from hydropower plants in the northwestern region, reduce power loss, enhance Vietnam's capability to import electricity from China, and also serve as a backup power source when required. Upon completion, the project will facilitate the release of 2,000 MW of capacity from hydropower plants in the northwest and surrounding regions. EVN has also been exploring the potential to import an additional 3,000 MW of electricity from China, which will primarily be transmitted through this proposed power line.

The project involves the construction of a 500 kV D/C transmission line with a total length of 228.92 km and consisting of 468 foundation positions for electricity poles. The line would connect the Lao Cai province to Yen Bai, Phu Tho, and Vinh Phuc provinces, starting from the 500 kV Lao Cai substation and ending at the 500 kV Vinh Yen substation. It also includes the expansion of two additional 500 kV bays at both substations.

In November 2024, EVNNPT received government approval through Decision No. 1274/QD-TTg to construct the transmission line with an investment of VND7,010.74 billion. EVN will finance 20 per cent of the project's cost upfront (VND1,299.11 billion) and will seek loans for the remainder (VND5,196.42 billion). The project cost includes about VND6,495.53 billion as pre-tax capital. The consortium of Power Engineering Consulting Joint Stock Company 1 (EVNPECC1) and Power Engineering Consulting Joint Stock Company 4 (EVNPECC4) were appointed as the survey and engineering consultants.

In January 2025, EVN announced a bidding process to select contractors for six packages related to steel pole supply and power line construction, with a combined value of over VND2.46 trillion.

Subsequently, Song Da Construction & Service-PC1-Dong Anh Consortium was selected for Package 1 (HH1) and Song Da 11 Joint Stock Company was selected for Package 4, which spans 51 positions in Yen Bai province. Other contractors were also selected to execute the project.

In March 2025, EVNNPT started construction on the project. Construction teams are optimising manpower and equipment to ensure the timely completion of this critical project by the target date of September 2, 2025.

In May 2025, contractors worked extended hours to complete foundation excavation and casting by May 2025, enabling tower erection and conductor stringing by June 2025. Using the PC (procurement-construction) model streamlined coordination between tower supply and construction. At difficult sites like Tower 166, Song Da 11 boosted equipment and extended shifts to 12 hours. As of May 14, PC1's Package 9HH completed 36 of 48 foundations. Tower materials are set for handover by June 2025.

In July 2025, EVNNPT completed the first conductor installation for the project on the VT9–VT16 section under package HH1 in Lao Cai province. Executed by Song Da Construction & Service-PC1-Dong Anh Consortium, this section was the first to finish foundation work. Package HH1 includes a total of 51 transmission towers, all located in Lao Cai province.

The project, anticipated to be energised on August 19, 2025, is expected to have a minimum operational lifespan of 40 years.

(VND1=USD0.000038)

500 kV Victoria to NSW Interconnector West (VNI West), Australia

Developers: Transgrid, Australia's transmission system operator (TSO) for New South Wales (NSW), and Transmission Company Victoria (TCV), a subsidiary of the Australian Energy Market Operator (AEMO)

Project details and status: VNI West proposes to connect Western Renewables Link (WRL) from a new terminal station north of Ballarat, Victoria, with the Project EnergyConnect (PEC) at a new Dinawan substation between Jerilderie and Coleambally, NSW. The project also involves enhancing the PEC's 160-km transmission lines between Dinawan and Wagga Wagga to operate at 500 kV rather than 330 kV. The project involves about 235 km of 500 kV lines in NSW.

The AEMO identified VNI West as an actionable project in the Integrated System Plan (ISP) for the National Electricity Market (NEM). In 2022, Transgrid and AEMO were progressing on a joint Regulatory Investment Test for Transmission (RIT-T) to assess the technical and economic viability of expanding the transmission interconnector capacity between Victoria and NSW.

In April 2022, Transgrid entered into an underwriting agreement with the Commonwealth government to develop the 500 kV VNI West, a major transmission infrastructure project proposed to secure electricity supply and boost sharing between the two states. Under this, Transgrid has received AUD75 million in funding for the project.

In July 2022, Transgrid and AEMO published the project assessment draft report (PADR) for the project as part of the RIT-T process. The PADR identifies that VNI West (via Kerang) is the preferred option for reinforcing the transmission network in the region to secure electricity supply and boost sharing among the states of South Australia, Victoria and NSW. It will provide the best outcome for energy consumers, with net market benefits of AUD687 million.

In September 2022, Transgrid expressed concerns regarding delays in the implementation of the project. In the same month, the Australian Energy Market Commission (AEMC) sought feedback on ways to simplify the regulatory framework for major transmission projects to ensure their timely completion. As per AEMO announcements, the USD 3.6 billion VNI West connection is one of the priority projects to connect new wind and solar plants and efficiently deliver power to consumers as coal plants shut down.

In November 2022, Transgrid announced its commitment to finish the project ahead of schedule, as it accelerates efforts to integrate renewable energy into NEM.

In February 2023, Victoria's Ministry for Energy and Resources decided to accelerate the development of the project allowing local communities to provide feedback beyond the opportunities already made as part of the RIT-T process and accelerate planning for early works on the project.

In March 2023, Transgrid announced plans to procure equipment, transformers, steel and cables for three projects – VNI West, HumeLink and EnergyConnect – with the AUD385 million in funding secured from the Commonwealth government as part of the Rewiring the Nation (RTN) programme. Transgrid already awarded first contracts with a combined value of around AUD150 million for use on the HumeLink and VNI West projects. This includes 25 single-phase 500 kV transformers (to arrive in late 2024/ early 2025) from Hyosung in South Korea, and 15 500 kV shunt reactors (to arrive in early 2025) from Hitachi Energy.

In April 2023, AEMO and Transgrid received more than 500 submissions in response to the VNI West Consultation Report, which will be used to determine the best route option. This includes the submission of the Victorian Energy Policy Centre (VEPC), which claims that the proposed renewable energy generated in the Gippsland region of Victoria could be transported using existing transmission lines, thereby offsetting the need for the VNI West project. AEMO officials have described VEPC's claims as contrary to both government policy and AEMO's independent economic analyses as well as to the views and analysis of transmission and generation companies that participated in the consultation. AEMO's response to all the written submissions to the consultation were to be published following the publication of the final regulatory report for the project in May 2023.

Meanwhile, some industry analysts have also suggested that the expansion of Latrobe Valley's transmission capacity along existing power line easements could be less disruptive than the VNI West project for bringing renewable energy into Melbourne. The Gippsland region of Victoria, which includes the inland Latrobe Valley, has been designated as the nation's first OSW zone.

In July 2023, AEMO and Transgrid published a draft corridor report, which evaluates various corridor possibilities and suggests an initial preferred option. The report was open for public access and feedback until August 4, 2023. Once the preferred corridor is confirmed considering the feedback, a specific route will be determined. Several potential route options will be assessed within the preferred corridor, and a thorough consultation process will involve affected landowners before the environmental assessment phase commences.

In October 2023, NSW announced the expansion of the preferred corridor for the VNI project that was supported by the community and landowner feedback collected during the consultation period for the draft corridor report released in July 2023. Based on the landowner feedback, Transgrid has amended the VNI West corridor in several locations. Public consultation on the recommended preferred route option will take place in the first half of 2024. Following this, Transgrid will confirm the preferred route option and commence the detailed environmental assessment and approvals phase.

During the same month, the Australian Energy Regulator (AER) rejected a legal challenge made by affected landowners and community members against the VNI West project.

The Regional Victoria Power Alliance, formerly Moorabool and Central Highlands Power Alliance, had challenged the project on 10 different grounds, calling for the design process to be redone. While AER dismissed the alliance's challenge, it stated that the group had a right to dispute the project as they had the potential to suffer any adverse impacts.

In January 2024, Transgrid published the draft route report for the project. The draft report was placed for public comments for around five weeks between January 29, 2024, and March 4, 2024. During this period, Transgrid's extensive consultation activities included three community meetings and a series of 'drop-in' sessions. Following this consultation, Transgrid would confirm the final preferred route (including any amendments made based on the feedback received) and begin work on the detailed environmental assessment and approvals phase.

In February 2024, Transgrid called on landowners, community members and other stakeholders to provide feedback on the Contingent Project Application (CPA Stage 1) for the project, which outlines the estimated costs for early works and delivery of the line, as well as the preliminary consumer savings. Transgrid's VNI West CPA Stage 1 report puts the first-stage (early works) capital expenditure at AUD1,096.33 million. This includes a direct capital expenditure of AUD 890.72 million, and labour and indirect capital expenditure of AUD205.61 million. Further, it estimates cost savings to consumers to be more than AUD845 million. It is stated that Transgrid is seeking to recover AUD213.36 million in revenue over the 2023-28 period to deliver the proposed early works for the VNI West project. It was open to stakeholder inputs until March 1, 2024.

In March 2024, Transgrid modified the preferred route for the VNI West project in response to feedback from the local community and landowners during recent consultations. The latest preferred route report outlines several changes, which include moving the proposed transmission line further away from Moulamein, extending the buffer for the township to nearly 6 km. The report also modifies a section of the line to the west of the Cobb Highway at Wanganella, shortening its length and moving it farther away from residential properties to the south of Wanganella-Moulamein Road; widens the preferred route by up to 3 km at the eastern end near Dinawan to allow flexibility to find a pathway for the transmission line through future renewable energy developments; and maintains a bubble up to 10 km wide at the southern end near the Murray River at Cobramunga to allow discussions to continue with TCV to determine a specific crossing point.

In Victoria, TCV aims to trim the planned route down over the next two years to a final 70- to 120-metre easement to locate the 500 kV line with towers about 80 metres high. It has bought a 360-hectare farm at Tragowel, near Kerang, for the electricity terminal station as part of the project.

In May 2024, AER approved Transgrid's VNI West CPA Stage 1, approving investment for early works for the project. The early works also include provision for PEC to construct over 160 km of 500 kV lines from Dinawan to Wagga Wagga, and substation expansion and interface work between the Wagga Wagga (Gregadoo) substation and the new Gugaa substation (planned as part of HumeLink).

In July 2024, the NSW government granted the Critical State Significant Infrastructure (CSSI) status to six renewable energy projects including the VNI West project. The CSSI designation signifies that a project is vital to NSW for economic, social and environmental reasons, with the Minister for Planning and Public Spaces acting as the consent authority. Despite the expedited process, a thorough all-of-government assessment will still be conducted, including public exhibition and submission opportunities.

In the same month, AEMO initiated the registration of interest (ROI) process to find a delivery partner to assist with early planning, and eventually build, own and operate the Victorian portion of the project. AEMO is seeking ROIs from interested parties for participating in a competitive procurement process to continue project delivery. This is an important first step in a multi-stage procurement process, ahead of the release of a tender to the Transmission Network Service Provider (TNSP) market, to identify Australian or global organisations with the capability to deliver the Victorian component of VNI West. The ROI will include an interactive information period for eligible parties and will be followed by an invitation to tender (ITT) in September 2024. TCV will continue developing VNI West through the early works phase, including community, landholder and Aboriginal Traditional Owner engagement and the environment effects statement (EES) process over the next 18 months. Before moving into construction, the plan is that TCV would be acquired by the selected partner. The last date to register for the ROI process was August 8, 2024.

In August 2024, Transgrid secured a funding commitment of AUD840 million to advance the project. Of this, Transgrid's shareholders committed almost AUD700 million to continue the early works on the NSW section of the project. Further, the Clean Energy Finance Corporation (CEFC) provided AUD140 million in concessional financing support through the Commonwealth government's AUD20 billion RTN programme. This financing commitment allows Transgrid to secure long lead equipment such as transformers, reactors, conductors and steel towers; prepare the detailed design of substations and transmission lines; coordinate market engagement to identify preferred contractors for construction and environmental impact assessment and submission; and build community and stakeholder engagement, including work to assess and progress negotiations to acquire substation and transmission line easements.

Transgrid has already achieved negotiated land access for 77 per cent of the 235-km route within NSW, to undertake environmental field studies and early site investigations.

In October 2024, TCV released the 70-metre-wide preferred easement along the 240-km Victorian section, which is subject to regulatory assessment under the EES. The latter will assess the project's potential environmental effects, including impacts on native vegetation, agriculture, land use and local communities. A key focus of the assessment is the comparative study of overhead versus underground transmission lines, with the possibility of partial underground construction.

In November 2024, TCV has invited local communities to provide feedback on Victoria's Department of Transport and Planning's (DTP) draft scoping requirements for the EES of the project.

In December 2024, DTP organised a webinar to outline the submission process and answer questions about the draft scoping consultation, which was open for public comment until December 18, 2024. The project must complete the EES process, and obtain relevant Victorian and Commonwealth approvals, before construction can commence. The Victorian section is expected to enter into the construction phase in 2026.

In February 2025, Transgrid proposed a hybrid bond issuance, with the Australian government's CEFC expected to be a major cornerstone investor. The proceeds from the hybrid issuance would help fund the VNI West and HumeLink projects, as well as Transgrid's base business. This CEFC funding is aligned with the Rewiring the Nation programme.

In March 2025, the Australian government announced the National Renewable Energy Priority List to provide coordinated support for regulatory planning and environmental approval process for the identified 56 priority projects comprising 24 transmission and 32 generation and storage projects. The list was developed by the Department of Climate Change, Energy, the Environment and Water (DCCEEW) in collaboration with federal, state, and territory governments. The priority list includes key transmission projects that support the integration of renewables into the grid including Victoria to NSW Interconnection.

In July 2025, TCV informed landholders that the completion date for the project had been extended from 2028 to late 2030. The mounting opposition from farmers and landowners over the proposed route, coupled with the need for stronger 'social licence', has contributed to the delay. The AEMO stated that revised

planning, design, and construction timelines were necessary to allow for extensive landholder engagement and detailed environmental, geotechnical, and cultural assessments. Alongside the revised timeline, TCV expanded its landholder engagement efforts beyond the original easement boundaries to provide more tailored support and project information.

Later in the month, Transgrid also announced a revised delivery schedule and updated cost estimate of AUD3.7 billion for the NSW section of the VNI West interconnector. The project has a staged delivery approach, with the first stage, involving the construction of a critical 500 kV link to support the South West REZ, scheduled for completion by early 2029, and the second stage, which will connect the Victorian border, expected to be completed by November 2030. The EIS for VNI West (NSW) remains on track for public exhibition for 28 days from August 2025 1 to 29, 2025.

In a separate development, in response to AEMO's procurement process initiated in July 2024 for selection of a development partner for the Victorian component of the VNI West project, five consortia submitted their proposals. The role of the selected partner encompasses finalising the transmission route and design, securing environmental approvals, appointing contractors, and entering into a long-term agreement to construct and operate the transmission infrastructure. Among the contenders are Spain's Acciona and Australian transmission operators AusNet and Transgrid, each submitting independent bids. Iberdrola, in partnership with Capella Capital, also submitted its proposal along with another consortium initially comprising EDF and the APA Group; however, the APA Group withdrew from the process on June 16, 2025, leaving EDF to continue independently. The appointment of the final development partner is anticipated in the third quarter of 2025.

As per AEMO, VNI West is scheduled to be energised by November 2030.

(AUD1=USD0.65)

Project EnergyConnect, Australia

Developers: NSW TSO Transgrid, and South Australian (SA) TSO ElectraNet

Project details and status: The project comprises a 900-km-long, 330 kV interconnection between SA (Robertstown) and Wagga Wagga in NSW. It also includes a short 220 kV branch line from Buronga in NSW to Red Cliffs in northwest Victoria. In SA, the project spans approximately 206 km from Robertstown to the SA/NSW border and includes the state's first 330 kV substation at Bundey. This is also referred to as Stage 1 of the project. In NSW, Stage 2 of the project includes new substations at Buronga and Dinawan, and upgrades at existing substations at Wagga Wagga and Buronga as well as around 700 km of 330 kV transmission line divided into eastern and western sections. The eastern section involves building a 375 km, 330 kV line between Buronga and the new Dinawan substation (Bundure), near Coleambally as well as just over 160 km of 500 kV transmission line infrastructure from Dinawan to Wagga Wagga. The western section includes the new 135-km, 330 kV Buronga–SA border line and upgrading about 22 km of an existing 220 kV transmission line between the Buronga substation and the NSW/Victoria border. The new Buronga substation, set to become one of the largest in the southern hemisphere, will feature five phase-shifting transformers, two synchronous condensers, and four shunt reactors to stabilise the grid and support renewable energy distribution. The project is designed to unlock renewable energy projects in SA, NSW and potentially Victoria. It was introduced as an actionable project under the AEMO's Integrated System Plan in 2020.

In October 2020, SecureEnergy, a 50-50 joint venture (JV) between Australia-based construction company Clough and the Spain-based infrastructure, energy and telecommunications company Elecnor, bagged an AUD1.5 billion contract for providing engineering, procurement and construction (EPC) services for Transgrid's portion of the project.

Since late 2020, there have been several hikes in the project construction budget, causing some energy consumer groups to worry about the impact on power bills. The transmission companies justified this cost increase based on the fact that new modelling estimations propose the delivery of even greater net market benefits, because it would unlock major new wind and solar projects, thus significantly reducing the need for gas-fired generation.

Transgrid faced delays in procuring investment for the construction process after it and ElectraNet failed in their initial push for an urgent change to market rules to help secure debt for their planned AUD2.4 billion transmission line.

After various discussions with the AER, in June 2021, Transgrid received approval for AUD1.8 billion in funding from the CEFC, which finally enabled the financial closure of the project. Earlier, in May 2021, ElectraNet gave the assurance that it would start construction on its portion of the project and had already committed AUD457 million to fund the SA section of the project.

In October 2021, two major contracts were awarded for the construction of the SA component of the project. Downer Utilities Australia Proprietary Limited won the transmission lines contract, while Consolidated Power Projects Australia Proprietary Limited won the substation contract.

The transmission line work includes the construction of an approximately 200 km, 330 kV transmission line between the SA-NSW border and the Bundey substation, and an approximately 10 km, 220 kV transmission line between the Robertstown and Bundey substations. The substation works include the construction of the new Bundey substation and augmentation works at the existing Robertstown and Tungkillo substations.

In January 2022, it was announced that the project was ready to begin construction, having received environmental approval from the project's SA component. Earlier, the SA government's Planning and Land Use Services department reviewed the project's EIS.

Also, in January 2022, the project progressed further with the submission of the EIS for the eastern section from Buronga to Wagga Wagga.

In February 2022, construction commenced on the SA section of the project.

In September 2022, the project received planning approval from the NSW government for the construction of a transmission line passing through Riverina in NSW.

In November 2022, Transgrid announced its commitment to finish the project ahead of schedule, as it accelerated efforts to integrate renewable energy into the national electricity market.

In December 2022, the project received environmental approval from the federal government for the construction of the 540-km Wagga Wagga–Buronga transmission line section.

As of March 2023, as part of the construction of the SA component of the project, the transmission line contractor, Downer Utilities, erected 330 kV transmission towers along Wentworth–Renmark Road and was expected to soon start work on stringing and connecting the wires and conductors. The tower foundation, assembly and erection activities also continued westward along the route to the Bundey substation, which is under construction by Consolidated Power Projects.

In the same month, Transgrid announced plans to bundle procurement of equipment, transformers, steel and cables for three projects – HumeLink, Victoria to NSW VNI West and PEC – into a single programme called Powering Tomorrow Together, which is expected to save up to AUD500 million. This procurement programme will be funded by the AUD385 million Transgrid has secured from the Commonwealth Government as part of the Rewiring the Nation programme.

In May 2023, Australian consulting firm ACIL Allen released the findings of an independent modelling analysis of the expected benefits of the project. It is expected to deliver annual savings of AUD127 for a typical residential power customer. Further, larger customers will save between AUD6,000 and AUD18,000 annually, depending on the customer size and electricity usage.

In the same month, it was reported that construction work on the project in SA was more than 50 per cent complete. The final foundation for the 384 new transmission towers on the line was laid, and it was anticipated that all the towers would be up by July 2023. Stringing of conductors on the new towers was also underway.

In July 2023, ElectraNet completed over 70 per cent of the project in SA. Downer Utilities is implementing the installation of the draw wire and conductor along the 330 kV transmission towers, spanning from the SA-NSW border to the new Bundey substation. It also began stringing wires between the Bundey and Robertstown substations.

As of August 2023, ElectraNet had completed almost 80 per cent of the SA segment of the project. All the 384 towers had been erected.

Consolidated Power Projects commenced the installation of three 275 kV/330 kV transformers provided by South Korean manufacturer, Hyosung Corporation. The high voltage control rooms and telecommunications buildings have been built in addition to all the 16 gantries, capacitor banks, and the largest transformers and reactors in SA's network.

In October 2023, Transgrid reported the arrival of key components of two synchronous condensers as part of the project, marking its steady progress.

In December 2023, ElectraNet completed the construction of the SA component of PEC, facilitating 150 MW of electricity transfer between Robertstown in SA, Buronga in NSW, and Red Cliffs in Victoria.

In May 2024, Transgrid, along with its construction partner Elecnor Australia, completed the construction of the western section, which is the 135-km, 330 kV Buronga–NSW-SA border D/C transmission line.

In August 2024, over 1,000 workers were working to advance the eastern section in NSW. New worker accommodation camps are being built in Bundure and Hay, in addition to existing ones. By the end of the month, progress on the line included drilling and pouring concrete foundations at 505 tower sites, assembling 185 towers, and erecting 90 towers on the two circuits between Wagga Wagga and Buronga. Further, the first 220 kV section of the new Buronga substation was connected to the existing Buronga substation, allowing power to flow across the new backbone of PEC. This is the first stage of the connection. The next stages of work will include energising the 330 kV equipment within the switchyard and testing the new lines to both SA and Victoria. Construction was also underway on the Dinawan substation at Bundure, with 225,000 tonnes of fill and gravel imported to the site and work progressing on synchronous condenser foundations.

In January 2025, Transgrid announced that it had negotiated a new fixed-price contract with Elecnor Australia for providing EPC services for Transgrid's portion of the project. With this, the latter's revised net project cost is AUD3.6 billion compared to the original forecast cost of AUD2.1 billion. The increase in costs reflects unforeseen factors such as Covid-related global supply chain impacts on key equipment and materials, critical labour shortages, record inflation, the impacts of the war in Ukraine, flooding, and the insolvency of Elecnor Australia's construction partner Clough.

Construction on the eastern section is under way, with over AUD200 million already being invested in the Riverina, Murray and Sunraysia regions as part of this section. Construction is scheduled for completion in September 2026, enabling AEMO to commence internetwork testing before the summer period.

In March 2025, the Australian government announced the National Renewable Energy Priority List to provide coordinated support for regulatory planning and environmental approval process for the identified 56 priority projects comprising 24 transmission and 32 generation and storage projects. The list was developed by the DCCEEW in collaboration with federal, state, and territory governments. The priority list includes key transmission projects that support the integration of renewables into the grid including Project EnergyConnect.

In April 2025, ElectraNet officially commenced operation of Stage 1 of the project, marking a significant milestone for SA and the broader national energy transition. The new transmission line enabled the direct transfer of electricity between SA, NSW, and Victoria for the first time. Stage 1 of the interconnector facilitated a 150 MW electricity transfer between the three states. The 540 km section from Buronga to Wagga Wagga in NSW is under construction and is expected to be completed by late 2027, at which point the full 800 MW energy transfer capacity would become available to the National Electricity Market.

In July 2025, Transgrid reported rapid progress on the NSW

section, with construction now more than 70 per cent complete on the eastern alignment of the project from Buronga to Wagga Wagga. The progress includes the following:

- All 1,150 tower foundations drilled and poured using over 53,000 m^3 of concrete
- 1,002 steel towers erected, including 330 kV and Australia's first 500 kV Danubio towers
- 278 km of high-voltage conductor cabling strung
- Major works completed at the Dinawan substation, including the delivery of two 200-tonne synchronous condensers from Europe
- Expansion of the Wagga Wagga 330 kV substation finished. This involved significant civil and electrical upgrades, and extensive system testing.

The entire project capacity is expected to become operational in 2027.

(AUD1=USD0.65)

Europe

Eastern HVDC Links EGL3 and EGL4, UK

Developers: SSE Networks Transmission (SSEN Transmission), UK's SP Energy and National Grid Electricity Transmission plc (NGET)

Project details and status: The Eastern Green Link 3 (EGL3) and Eastern Green Link 4 (EGL4) form part of the Great Grid Upgrade. The links would transport enough clean energy from Scotland to power up to four million homes in the Midlands and the South of England.

National Grid Electricity Transmission Plc – the electricity transmission network owners of the UK – is jointly developing EGL3 with SSEN Transmission – the trading name for Scottish Hydro Electric Transmission (SHET) and the transmission business of SSE Plc (which owns 75 per cent of SSEN Transmission). It is developing EGL4 with the UK's SP Energy Networks, which manages a portion of Scotland's transmission grid.

National Grid is developing EGL3 with SSEN Transmission and EGL4 with SP Energy Networks. Both projects will facilitate the transport of power between Scotland (EGL3 at Peterhead; EGL4 at Westfield, Fife) under the North Sea and England at Anderby Creek on the Lincolnshire coast. From there, underground cables would run approximately 100 km to converter stations in the Walpole area of King's Lynn and West Norfolk, before connecting to the existing transmission network via a new substation.

In July 2024, invitations to tender for cable and converter work packages were released for EGL3.

Following early engagement in April 2024, National Grid, in May 2025, again invited the Lincolnshire and Norfolk communities to comment on updated proposals for EGL3 and EGL4, which include:

- Confirming Anderby Creek as the landfall location for both projects, with Theddlethorpe removed from further consideration
- National grid no longer bringing forward proposals for a converter station and direct current switching station in the Bilsby area of East Lindsey
- Removing a previously proposed cable route north from Huttoft to Bilsby
- Routing EGL3 cables entirely outside the Holderness offshore marine conservation zone, with a minimal crossing by EGL4 cables.

The consultations were held between May 13 to June 23, 2025.

In July 2025, Siemens Energy was named the preferred bidder to deliver two converter stations for EGL4. EGL4 recently concluded its second stage of public consultation at both ends of the link and is utilising the feedback to inform about the project's development, which includes the planning application in Scotland, expected during late Summer 2025, and an application for development consent to the Planning Inspectorate in England during 2026.

Construction is expected to begin in 2029, with the link becoming operational in 2033.

Eastern HVDC Links, Scotland–England

Developers: SSEN Transmission, Scottish Power Transmission plc (SPT) and NGET

Project details and status: The EGL project will comprise two offshore green links from Scotland to England. The first 2 GW HVDC electricity "superhighway", named EGL 1, will be constructed between Torness (Scotland) and Hawthorn Pit (England), while EGL 2 will connect Peterhead (Scotland) and Drax (England) via 436 km of 525 kV HVDC subsea cables. EGL 1 will be jointly developed by SPT and NGET, while EGL 2 will be built by SSEN Transmission and NGET.

The proposal is part of NGET's ambition to reinforce its network along the east coast to support the significant growth in renewable and low-carbon generation.

In November 2021, the British energy regulator Office of Gas and Electricity Markets (Ofgem) stated that the EUR3.4 billion proposal would be critical to support the growth of renewables in the country. This was based on the assessment of the initial needs case (INC) submitted by the project developers to Ofgem in October 2020.

In December 2021, SSEN Transmission and NGET submitted the final needs case (FNC) to Ofgem for EGL 2.

In February 2022, SSEN commenced works on ground investigations for the GBP2.1 billion EGL2. The investigation works were to continue for six weeks. They were specific to the field north of the Peterhead substation development and along a route to the coastline.

In end-March 2022, Ofgem gave its provisional approval to the two HVDC links.

In May 2022, the Aberdeenshire Council granted EGL 2 in-principle planning permission for the HVDC converter station and a pylon compound joining the high voltage UGC to the overhead line (OHL).

In July 2022, Ofgem granted its final approval to EGL 2.

In August 2022, SSEN Transmission submitted the marine licence application to the Scottish government for EGL 2.

In May 2023, SSEN Transmission and NGET selected Italy's Prysmian Group as the preferred bidder for EGL 2. With a power transmission capacity of 2 GW, the connection is expected to be one of the first cable systems in the UK to utilise 525 kV technology with extruded cross-linked polyethylene (XLPE) insulation. The Prysmian Group would continue negotiations to conclude the contract in a timely manner.

In May 2023, the East Riding of Yorkshire Council granted full planning permission to EGL 2 for the majority of the project's onshore UGC.

In July 2023, two key developments took place for the project. First, NGET and SSEN Transmission signed a JV shareholders' agreement for developing the project. Second, Hitachi Energy and UK-based construction and civil engineering company BAM Nuttall Limited were selected as the preferred suppliers for HVDC converter stations for the project.

In August 2023, EGL 2 was officially granted planning consents for all onshore and offshore components, including new converter stations, and onshore and offshore cables. All necessary permissions have now been secured from local planning authorities as well as both marine organisations, Marine Management Organisation and Marine Scotland. These two organisations granted marine licences on July 28, 2023, and May 5, 2023, respectively, for the EGL 2 subsea cable. The North Yorkshire Council granted outline planning permission for the HVDC converter station, located adjacent to the Drax power station, and full planning permission for the section of onshore cable in North Yorkshire on August 11, 2023.

In September 2023, SPT and NGET selected the consortium of GE Vernova's Grid Solutions business and Greece's Mytilineos – an industrial company functioning in metallurgy, EPC, electric power and gas trading – as a preferred supplier for the two required voltage-sourced converter (VSC) HVDC converter stations for the EGL1.

In November 2023, SPT and NGET selected the Prysmian Group to supply a 525 kV HVDC XLPE submarine cable system for EGL1. Prysmian will design, manufacture, install, test and commission the required HVDC cable system, delivering nearly 400 km of power cable needed for the 194-km route between Scotland and England. The majority, or 176 km of the route will be installed offshore in the North Sea with onshore sections of around 8 km and 10 km in Scotland and England, respectively. Prysmian will provide high-voltage alternating current (HVAC) cable systems to connect the converter station at Torness with the grid substation near Branxton, requiring 30 km of 400 kV XLPE insulated cable, while the respective HVDC and HVAC cable systems will be completed with fibre optic cable and monitoring systems.

In December 2023, SPT and NGET awarded the contract for EGL 1's HVDC converter stations to the GE-Mytilineos consortium. GE Vernova's Grid Solutions business will provide HVDC valves, control systems and transformers from its UK facilities in Staffordshire. Construction for the converter stations project is scheduled to commence in 2024.

In February 2024, SSEN Transmission and NGET signed a contract with Prysmian Group, Hitachi Energy and UK-based construction and civil engineering company BAM Nuttall Limited for the EGL 2 connection. Prysmian will deliver a major HVDC cable system for EGL 2, including the supply of around 1,000 km of cable, while Hitachi Energy and BAM will be responsible for HVDC converter stations.

In March 2024, EGL 1 received a provisional GBP2 billion funding package under the Accelerated Strategic Transmission Investment (ASTI) framework. EGL1 is the first of the 26 critical projects to be fast-tracked under the new framework, which was launched by Ofgem in December 2022 to support the UK government's renewable energy goals, including the connection of up to 50 GW of OSW capacity by 2030. This accelerates the project funding process by up to two years, replacing the previous piecemeal, project-by-project approval framework.

Ofgem scrutinised the costs proposed by developers and identified GBP43 million that could be cut from indirect costs, thereby reducing costs for consumers without impacting project delivery or quality. EGL1 will also require planning permission in a process overseen by the Planning Inspectorate.

In August 2024, the EGL2 grid connection project completed a fast-track process to secure funding through Ofgem's ASTI framework with Ofgem awarding GBP3.4 billion to the project.

In September 2024, construction work commenced for the EGL 2 connection. The construction ceremony took place simultaneously at both ends of the subsea link in Peterhead in Scotland and Wren Hall in Drax, near Selby in North Yorkshire.

In December 2024, the Prysmian Group, awarded a contract to the British multi-national infrastructure company, Balfour Beatty, to supply cables for the EGL 2 connection. The latter will install 68 km of HVDC land cables from Fraisthorpe Sands to Drax in Yorkshire, England, as well as an additional 1 km of HVDC land cable at Peterhead in Scotland.

In February 2025, construction work commenced for EGL 1.

In June 2025, SSEN reported that a series of important marine surveys would be carried out over the coming months in Sandford Bay near Boddam, Peterhead, as part of the EGL 2 connection.

To inform the cable's route and design, the following marine survey activities will be carried out:

- Geophysical surveys (June 2025): Vessels will conduct daily sweeps of Sandford Bay to collect seabed and subsurface data;
- Geotechnical surveys (July-August 2025): A jack-up barge will collect seabed core samples at four offshore positions; and
- Unexploded ordnance (UXO) investigations (August-October 2025): Remote-operated vehicles will scan an 80-metre-wide seabed corridor along the cable route to detect and safely assess potential UXO targets.

In addition to the offshore work, onshore environmental and technical surveys will be carried out near Sandford Bay, starting in June 2025.

In July 2025, the Svensk Exportkredit (SEK), the Swedish Export Credit Corporation, announced that it will be providing a EUR0.8

billion loan facility to NGET Plc to fund a portion of the EGL2 connection. SEK is providing financing for Swedish and European exports to NGET's share of the project, including deliveries from Hitachi Energy. The loan to fund EGL2 construction has been classified as a green loan under international principles.

Construction for EGL2 is now underway with operations expected in 2029.

(EUR1=USD1.16; GBP1=USD1.33)

Sea Link, UK

Developer: UK's TSO, National Grid

Project details and status: Sea Link is a new 2 GW HVDC subsea electricity infrastructure project between the proposed Friston substation in Suffolk and Richborough in Kent. The proposed project includes a new, primarily offshore, 138-km cable connection from Pegwell Bay in Kent to a point on the Suffolk Coast between Aldeburgh and Thorpeness. The plan also includes the onshore infrastructure needed at either end, such as onshore cables, converter stations and substations, and OHL connections to the existing network, for onward transmission to homes and businesses around the country.

National Grid's proposals in Suffolk begin with a connection from the existing transmission network via the proposed Friston substation, including the substation itself. Approximately 1.9 km of HVAC UGCs would then run between the proposed Friston Substation and a proposed 2 GW converter station near Saxmundham. An HVDC UGC connection spanning 10 km would connect the proposed converter station to a landfall point between Aldeburgh and Thorpeness. Offshore, the proposals include a subsea HVDC cable route, approximately 122 km long, between the landfall in Suffolk and the landfall on the coast of Kent. In Kent, the offshore HVDC will come ashore at a landfall point at Pegwell Bay. An HVDC UGC spanning 2 km would connect the landfall to a proposed 2 GW converter station and substation site near Minster. Finally, a new 3.5 km stretch of AC OHL would connect the new substation into the existing network.

Sea Link is needed because the existing transmission network infrastructure in East Anglia and the south-east was built in the 1960s and was not designed to accommodate the large volumes of generation capacity planned to be connected there. The growth in offshore wind and the emergence of new interconnectors and nuclear power stations means that by the end of the decade, the existing network will not have the capacity to reliably transport all the energy to where it is needed around the electricity network. Connecting to the Sizewell area (at the proposed Friston substation), Sea Link would allow more power to flow out of East Anglia from the generators connecting into the network in the region. When renewable generation is low, power can flow into the region. By connecting into the Kent coast (close to Richborough), Sea Link will increase the amount of power that can be transported to and from the south-east, helping to meet domestic demand as well as imports and exports to Europe via interconnectors.

In July 2024, National Grid launched a public consultation, to be held between July 8 and August 11, 2024, for Sea Link. It had earlier launched an eight-week statutory consultation process held between October 24 and December 18, 2023, for the project. However, a number of changes have been made across different elements of the proposals since then.

In April 2025, the project witnessed two key achievements. Early in the month, National Grid selected Siemens Energy as the preferred bidder for the link. The preferred bidder selection represents a significant milestone for the project, following an extensive competitive procurement process. Following this, in the latter half of the month, the Planning Inspectorate accepted the development consent application for Sea Link. With this acceptance, the project has now entered the pre-examination phase. All stakeholders, including members of the public, will shortly be able to register with the Planning Inspectorate as interested parties, allowing them to take part in the examination process. A preliminary meeting will be held, after which the Planning Inspectorate will proceed with the examination, including a series of public hearings. Once the examination phase is closed, the Planning Inspectorate will make a recommendation to the Secretary of State for Energy Security and Net Zero, who will make the final decision on the application.

In July 2025, NGET named Japanese technology provider, Sumitomo Electric Industries, as the preferred bidder for the HVDC cable element of the Sea Link. Sumitomo Electric is now engaging with NGET to finalise the contract. The cable will be produced from the former's state-of-the-art submarine cable factory at Port of Nigg in Scotland.

Construction of Sea Link is expected to start in 2026 and be completed by 2031, with some reinstatement works continuing into 2032.

SuedOstLink, Germany

Developers: Germany's TSOs, 50Hertz Transmission GmbH and TenneT Transmission GmbH

Project details and status: The SuedOstLink (SOL) has been designed to integrate new wind generation projects in the control area of 50Hertz, especially in Mecklenburg-Vorpommern, Brandenburg and Sachsen-Anhalt, and transmit the energy to central/south Europe for consumption and storage. The project is designated as a European Union (EU) project of common interest (PCI).

The 2 GW HVDC project aims to facilitate the transmission of power from offshore wind farms in the northern region of Germany to consumption centres in the southern region. The SOL project comprises a 538-km, ±525 kV line from Wolmirstedt in Saxony-Anhalt to the Isar power plant site near Landshut in Bavaria. As part of the project, 50Hertz is responsible for the Klein Rogahn to Thuringia-Bavaria state border section, while TenneT will build the underground cable line from Münchenreuth in the Hof district to the Isar grid connection point in the Landshut district. The line in the 50Hertz area is divided into three sections: A1 [87-km Wolmirstedt–Könnern (Golbitz district)], A2 (94-km Könnern–Eisenberg) and B (84-km Eisenberg–Thuringia/Saxony border). Meanwhile, the line in the TenneT area is divided into six individual sections: C1 (55-km Münchenreuth–Marktredwitz), C2 (90-km Marktredwitz–Pfreimd), D1 (54-km Pfreimd–Nittenau), D2 (27-km Nittenau–Pfatter), D3a (45-km Pfatter–A92 at Isar) and D3b (2-km Isar converter area).

In 2017, 50 Hertz submitted the application documents for sections A and B to Bundesnetzagentur (BNetzA) or the Federal Network Agency for federal sectoral planning. In end-2017, BNetzA published a study framework for the sections.

In February 2018, the project received a EUR70 million grant from the EU under its Connecting Europe Facility (CEF).

In January 2019, BNetzA began the evaluation process for the project. The two developers had submitted the application for the project in March 2017, while BnetzA acknowledged all the documents in November 2018.

In March 2019, TenneT presented the supplementary and in-depth planning intended to be used for the federal sector planning for Section D of the project.

In October 2019, BNetzA completed the federal sector planning for Section B of the project. This 83-km-long corridor comprises the Naumburg/Eisenberg area and stretches to the state border between Thuringia and Bavaria. BnetzA had initiated the assessment process for this corridor in January 2019.

In December 2019, BNetzA defined the route corridor for Section C of the project. This approved 137-km-long section largely follows the route proposed by TenneT and starts at Hof, then runs east of Marktredwitz and Weiden before concluding at Pfreimd in Schwandorf.

In April 2020, BNetzA approved the route corridor for the northernmost section of the project. The approved 182-km-long section begins at Wolmirstedt, running west of Magdeburg along the A 14 motorway to the south. It will further bypass Halle (Saale) to the east and reach Eisenberg. The HVDC connection will mainly be implemented as an underground cable in this section. However, an overhead line type might be considered in the two areas between Wolmirstedt and Magdeburg, and near Förderstedt.

In May 2020, TenneT TSO GmbH and 50Hertz awarded two cable contracts for EUR500 million each for the project. The two contractors were the Danish supplier of power cable solutions, NKT, which received the contract from 50Hertz, and Italy's PowerLink Srl (a subsidiary of Prysmian SpA), selected by TenneT. The scope of the contracts entails the design, manufacture, delivery and laying of around 1,000 km of plastic-insulated UGCs. The two contractors will also support the detailed routing, install the connecting sleeves and terminations, and carry out the final HV testing of the cable system.

In December 2021, the Prysmian Group produced the first 20 km of UGC for the project. The company will supply approximately 550 km of UGC for around 270 km of the SOL, starting at the southern Germany connection point at Isar, close to Landshut in Bavaria. P-Laser cable technology was used for the cables, which is reportedly the first 100 per cent recyclable, environment-friendly, high-performance cable technology based on high performance thermoplastic elastomer (HPTE), allowing a 30 per cent CO2 emission reduction. The P-Laser cable system allows a transmittable power of 2 GW on a single system.

In May 2022, NKT signed subcontracts to support the logistics and cable installation for the project and awarded contracts to Hegmann Transit GmbH & Co, and ea.R Energieanlagen Ramonat GmbH for the project.

In February 2023, TenneT presented the proposal for the final route of the first section of the SOL project.

In March 2023, 50Hertz commenced construction on the first converter at the Wolmirstedt substation near Magdeburg after the TSO received approval for the converter within seven months. The converter will be completed by the contractor, Siemens Energy, in 2025.

In December 2023, TenneT began the construction of the converter site near Niederaichbach, Landshut district in Bavaria. The converter, which will be developed on a turnkey basis by Siemens Energy and handed over to TenneT, will convert DC into AC.

In January 2024, 50Hertz commenced selective construction works on Section B of the project connection affecting Thuringia and Saxony, after receiving approval for the same from BNetzA. Construction may only be carried out before the plan approval decision if the measures are delimitable and reversible, and if the method of execution is undisputed.

50Hertz is planning to begin work on the crossing under Autobahn 4 and later on a railway line crossing, both in the Kraftsdorf area. More railway crossings are to follow near Zeulenroda-Triebes, between Wunschendorf/Elster and Weida, and in the municipality of Rosenbach/Vogtland. All these crossings are required during pipe jacking. The TSO also intends to begin construction of the cable section station in Königshofen in the municipality of Heideland, and a smaller cable monitoring station in Altgernsdorf in the municipality of Langenwetzendorf.

In February 2024, 50Hertz announced that it was planning early construction work for the A1 and A2 sections of the SOL. The TSO submitted the application to BNetzA for approval and expects its decision in the coming months. The early works will take place in parallel with the planning approval process.

In April 2024, BNetZa issued the first planning approval decision for Section D3b (Isar converter area) of the SOL. Up till now, only the approval for an early start of the construction for selected measures was available. Now, with this approval in hand, further construction work in Section D3b can begin. The permanent building rights that have now been granted enable TenneT to build the converter and completely lay the UGCs in the section. The planning decisions specify how and where the DC line will be built exactly and regulate, among other things, measures that should be taken to reduce emissions or compensation measures for nature conservation.

In July 2024, TenneT awarded a contract to France's VINCI Construction GeoInfrastructure for civil engineering works, which will be carried out in two stages. Between end-August 2024 and December 2026, earthworks and undergrounding of the sleeves, spanning approximately 90 km, and construction of the worksite access roads will be carried out. In this stage, VINCI Construction will enlist the expertise of two of its subsidiaries, Spiecapag and HDI, which specialise in laying underground pipelines. In the second stage, from December 2026 to May 2028, underground access work to lay four 525 kV DC power lines in the sleeves will be undertaken.

In August 2024, 50Hertz awarded all the contracts for

construction work for the 84-km Eisenberg–Thuringia/Saxony border Section B line after it awarded the two lots, each with a route length of around 40 km, to construction companies, STRABAG SE and Max Bögl. The scope of contracts involves laying protective pipes using open trench construction. Earlier, civil engineering company Köster, steel construction specialist Hildebrand and electrical engineering services company Omexom Ebehako were commissioned for the electrical installation. The complex pipe jacking under motorways and railway lines is being carried out by Sonntag Baugesellschaft. Horizontal flush drilling is being executed by two joint ventures consisting of Max Bögl and Michels Trenchless, as well as Verbraeken Infra, Graf Rohrleitungs- und Tiefbau GmbH and Van Baarsen.

In October 2024, 50Hertz commenced open trench construction works for two sections of the SOL in Thuringia and Saxony. Work on the first section has commenced in the Saale-Holzland district in Thuringia. The approximately 4.5-km section stretches from Heideland to Rauda. Two pairs of protective pipes are to be laid on this stretch using open trench construction. The other section is in the Vogtland district. It is around 9 km long and runs between the Rosenbach district of Rodau and the Weischlitz district of Mißlareuth.

In December 2024, BNetzA granted two planning approvals at once for SOL. The decisions relate to the first planning permissions for 50Hertz's part of the project section, and the fourth of a total of six parts that fall under the other German TSO TenneT's control zone. The two sections that have been approved cover a total distance of 129 km – Section B in Thuringia and Saxony, and Section D3a.

In January 2025, 50Hertz reported that it has awarded all the civil engineering contracts for SOL. The orders, for the approximately 170 km section of the connection, amount to EUR650 million, with around EUR390 million going to companies with sites in eastern Germany. Contracts worth approximately EUR530 million were awarded for the open trench construction and smaller horizontal direction drilling (HDD) operations. These were awarded to PORR, located in Rangsdorf, near Berlin; Franz Kassecker; Max Bögl, with branches in Leipzig and Gera; and Wolff & Müller from Dresden.

In March 2025, BNetzA granted the third and final planning approval for the SOL to German TSO, 50Hertz Transmission GmbH. With the third and final planning approval decision, 50Hertz has now been granted the full building permit for the line. The recent approval of around 88 km through the districts of Börde and Salzlandkreis has finalised the building permit for the total section.

In July 2025, TenneT received the planning approval decision from BNetzA for the final section D1, spanning 55 km between Pfreimd and Nittenau in Schwandorf district of Bavaria. This approval completes the extensive multi-year planning and permitting process for the entire SuedOstLink connection, which extends around 540 km from Wolmirstedt in Saxony-Anhalt to the Isar River in Bavaria.

SOL is scheduled to be commissioned in 2027.

(EUR1=USD1.16)

SuedOstLink+, Germany

Developer: German TSO, 50Hertz Transmission GmbH

Project details and status: The proposed 525 kV HVDC is necessary for secure network operation and to make the increasing amounts of electricity generated in the north from renewable sources available safely and efficiently to all consumers in Germany.

The proposed 2 GW HVDC corridor runs from the Klein Rogahn search area west of Schwerin in a south-westerly direction, to cross the Elbe near Dannenberg in Lower Saxony. The corridor then bypasses the Altmark military training area in Colbitz-Letzlinger Heide to the west, and meets the SuedOstLink east of Niederndodeleben in the municipality of Hohe Börde. As an extension and expansion of the SuedOstLink, it flows into the already defined corridor in the Börde district. From there, both lines run together to the Isar near Landshut.

In September 2023, 50Hertz signed a multi-year framework agreement with Danish NKT for the Northern extension of the onshore HVDC corridor (approximately 440 km of core cables), which starts at Klein Rogahn.

In July 2024, 50Hertz Transmission GmbH presented a proposal for the 2 GW SuedOstLink+ corridor route to representatives of municipalities and associations. This route, between the Klein Rogahn search area and the Börde district, completes the application documents for federal sectoral planning, which 50Hertz will submit to Germany's energy regulator, BNetzA or Federal Network Agency, this month.

In June 2025, BNetzA approved the SuedOstLink+ corridor route. The binding 1,000-metre-wide corridor, approved by BNetzA, starts at the planned substation near Mühlenbeck in the municipality of Schossin and then runs east of Hagenow to Kuhstorf. From there, it runs south-west of Bresegard near Picher and turns west from Grebs-Niendorf to Amt Neuhaus in the Lüneburg district. Near Bohnenburg, the corridor crosses the Elbe River and runs between Dannenberg and Gusborn into the Wendland region.

In the area of the town of Arendsee, the corridor crosses the Lower Saxony/Saxony-Anhalt state border near Mechau. Northeast of Fleetmark, the corridor turns south and continues to the west of Kalbe (Milde). It bypasses Gardelegen at the airport to the west, before running east of Calvörde and north of Haldensleben. It crosses the Mittelland Canal at Groß Ammensleben, and then runs through Niedere and Hohe Börde to the combined cable section and transition station at Niederndodeleben.

In July 2025, BNetzA published the initial planning approval application for Section F of the connection. The submission, made by 50Hertz in June 2025, covers this section, running from Mechau in the town of Arendsee to Börde district.

Under Section 19 of the Network Expansion Acceleration Act, affected public interest groups, recognised environmental organisations, and members of the public are invited to submit comments, statements, or objections regarding the project.

Submissions can be made online, via email, or in writing, with the consultation period open until August 29, 2025.

HVDC Corridor B Grid Expansion Project

Developers: Amprion GmbH and TenneT GmbH

Project details and status: Amprion and TenneT are in the process of developing the HVDC Corridor B grid expansion project with a transmission capacity of 4,000 MW.

The grid project includes two ±525 kV HVDC lines, which will be developed as part of the confirmed list of projects under the federal requirements plan or Bundesbedarfsplangesetz (BBPlG). These are BBPIG Project no. 48, which runs 408 km from Heide town in Schleswig-Holstein to Polsum in the city of Marl, North Rhine-Westphalia (NRW); and BBPIG project no. 49, which runs 266 km from Wilhelmshaven (Lower Saxony) to Hamm (NRW). Between Lower Saxony and NRW, the project, together with project no. 48, is to be implemented in large parts as a parallel underground cable.

The corridor is intended to relieve the load on the AC network and ensure reliable network operation. It will entail an investment of EUR7 billion, of which more than EUR2 billion will be incurred at the planning and approval stage itself.

In August 2022, Amprion reported that it was close to entering the approval phase of the Corridor B project. The company specified the route for the project and planned to apply for federal sectoral planning to BNetzA or the Federal Network Agency in September 2022.

In March 2023, Amprion began the first aerial surveys for the planning of the route corridor for HVDC Corridor B. Amprion undertook these laser scan flights to obtain a precise database of all landscape features of the route corridors.

In September 2023, Amprion signed an agreement for the preferential delivery of four converter stations for the Corridor B project in Germany. The agreement entails a commitment to maintain the necessary production and installation capabilities until the project's completion. Amprion is gearing up to have these converters commissioned by October 2024, which are slated to be strategically located around the network connection points of Heide, Wilhelmshaven, Polsum and Hamm.

In March 2024, Amprion selected Danish power cable manufacturer NKT for a EUR1.2 billion contract. The awarded contract encompassed both the HVDC Corridor B project no.48 and a vital section of the Kruckel–Dauersberg line, which is project no. 19 of the Energy Line Expansion Act (EnLAG).

In August 2024, the TSO commissioned Max Streicher and Leonhard Weiss to carry out the southern section work of the project. The civil engineering work for the northern section of the project will be carried out jointly by Germany's Johann Bunte, Depenbrock Bau, Anton Meyer, Bernhard Heckmann, Knoll, Reinhard Rohrbau, Hölscher Wasserbau and Epping Rohrvortrieb.

Between September 17, 2024, and October 2, 2024, Amprion invited the public to numerous events for the southern Emsland and Polsum section.

In April 2025, to build a converter in Hamm, Amprion acquired land north of the Schmehausen power plant site from RWE – a leading global player in renewable energy. Amprion is expected to initiate the emission control approval process for the construction of the converter with the city of Hamm in early 2026. The city had already issued a preliminary emission control approval for the planned facility in 2024.

In May 2025, BNetzA confirmed the preferred route for the first two sections of the project. The 1,000-metre-wide planning corridor for Project 49 between the Steinfurt district and Hamm has now been definitively determined. BNetzA reviewed and approved the route corridor proposed by Amprion in the two approval phases, Project 49 South 1 and 2. Federal sectoral planning is thus complete in these two phases. Amprion is now tasked with submitting a proposal for the exact route of the approximately 40-metre-wide UGC route under construction. This proposal will also be reviewed by BNetzA with public participation in the pending planning approval process.

In July 2025, BNetzA confirmed the preferred route for the project. The said section is between Rheine in Steinfurt district and the Polsum grid connection point in Recklinghausen district, and corresponds to Project No. 48 under the Federal Requirements Plan Act or BBPlG.

The approved corridor spans approximately 1,000 metres in width. Amprion will next submit a detailed proposal for the precise route of the approximately 40-metre wide UGC system. This will be subject to review and public consultation during the forthcoming planning approval procedure overseen by BNetzA.

Construction work on the project is expected to start in 2027 and be completed by 2031.

(EUR1=USD1.16)

BalWin1 and BalWin2 Offshore Grid Links, Germany

Developer: Germany's TSO, Amprion GmbH

Project details and status: BalWin1 and BalWin2 HVDC grid connection systems will connect offshore wind farms (OWFs) in the German North Sea to the onshore transmission grid in Lower Saxony and North Rhine-Westphalia respectively. Each project can transmit an output of 2,000 MW.

The two offshore grid links will be installed parallel to one another for the most part on land with a section at sea too. From the North Sea OWFs, the cables initially run 165 km at sea. The route passes under the island of Norderney and reaches the coast in the Hilgenriedersiel area. Approximately 205 km and 215 km of UGC will be laid on the land side of BalWin1 and BalWin2 to get to their respective connection points in Wehrendorf and Westerkappeln.

In January 2023, Amprion GmbH awarded the contract for building the HVDC converter stations for the two grid links to the consortium of Siemens Energy and Dragados Offshore. The consortium will build two offshore and two onshore converters in the 2 GW power class. The contract is worth over EUR4 billion, including maintenance for 10 years.

In January 2023, Amprion renamed the LanWin1 and LanWin3 grid links to BalWin1 and BalWin2 to indicate a change in the wind farm areas to be connected in the North Sea from 11-1 and 12-1 (LanWin cluster) to 9-1 and 10-1 (BalWin cluster), as per the latest Flächenentwicklungsplan (FEP) or Area Development Plan by the Federal Maritime and Hydrographic Agency.

In July 2023, Amprion announced plans to take over the

former RWE Generation AG's power plant site at Ibbenbüren to set up a converter station for the BalWin2 grid connection project. Germany's Hagedorn group of companies, which owns the chosen site, has agreed to sell it to Amprion. The Ibbenburen coal power plant was decommissioned in 2021. This planned converter station near the Westerkappeln substation will convert DC to AC. In the same month, Amprion submitted the spatial planning process documents to the Office for Regional Development Weser-Ems (ArL).

In August 2023, Amprion commenced the spatial planning procedures for both BalWin1 and BalWin 2 projects. For BalWin1, state planning authorities examined the route corridors for the DC UGCs as well as the possible converter locations in the vicinity of the grid connection point and the associated AC connections in Lower Saxony and North Rhine-Westphalia. For BalWin2, the discussions will pertain to the route corridors for the DC UGCs and the Ibbenbüren converter site. After due consideration, the authorities will determine the most spatially compatible planning variant, which will then form the basis for the subsequent plan approval procedure.

During the same month, Amprion selected Italian cable manufacturing company Prysmian Group as the preferred bidder for the two projects. Prysmian was responsible for concluding the contracts, valued at EUR4.5 billion, by January 15, 2024.

In February 2024, Amprion finalised contracts with the Prysmian Group for BalWin1 and BalWin2. The contracts include approximately 4,400 km of ±525 kV HVDC cables and dedicated metallic return (DMR) cables, of which around 3,400 km are land cables and 1,000 km are submarine cables.

In March 2024, the spatial planning process for the Lower Saxony part of BalWin1 and BalWin2 was completed, and ArL will now publish its state planning findings. It has been confirmed that the priority road corridor complies with the changes proposed in the procedure. In addition, the possible converter locations – Am Wehsand-Ost and In der Strothe – and their respective AC connections have been classified as spatially and environmentally compatible.

During the spatial planning process, Amprion proposed using the eastern variant of the 650-metre-wide route corridor between Bösel and Garrel, instead of the originally proposed western variant. ArL follows this assessment with its decision. The corridor runs west past Garrel, Falkenberg and Varrelbusch, to the Vahren (Cloppenburg) area.

Here too Amprion originally suggested an eastern variant, but in the course of the process preferred the western variant. From the Vahren area, the route corridor takes the originally proposed route east of Kneheim, across the western area of the municipality of Cappeln as well as Bevern, Dinklage and Grönloh. It runs between Gehrde and Neuenkirchen (Oldenburg) and between Rieste and Alfsee. In the Hesepe area, BalWin1 and BalWin2 separate. From there, BalWin2 runs northwest past Ueffeln and Neuenkirchen (Osnabrück) to North Rhine-Westphalia, while BalWin1 runs east to Hunteburg and turns southeast to Bohmte.

In April 2024, Amprion awarded multiple civil engineering contracts for offshore grid connection system projects. Works are expected to begin in 2026.

The works have been awarded under three lots:

Lot 1: Awarded to Apen-based De Romein GmbH for the construction from the coast to Bösel with a route of around 106 km.

Lot 2: Awarded to Northwest Working Group for the construction from Bösel to Bramsche-Hesepe, with a distance of around 74 km. The Northwest Working Group consists of Johann Bunte Bauunternehmung SE & Co. KG, Depenbrock Bau GmbH & Co. KG, Anton Meyer GmbH & Co. KG, Bernhard Heckmann GmbH & Co. KG, Knoll GmbH & Co. KG, Reinhard Rohrbau GmbH, Hölscher Wasserbau GmbH, and Epping Rohrvortrieb GmbH & Co. KG.

Lot 3: Awarded to Köster GmbH from Osnabrück for construction in the area from Bramsche-Hesepe, west to Ibbenbüren and east to Bohmte, with a route length of around 62 km.

The companies commissioned will build the cable protection pipe system into which the underground cables will later be pulled.

In May 2024, Amprion finalised Am Wehsand as the location for constructing a converter station for the BalWin1 offshore grid connection system project. Of the six potential areas originally identified in 2021, two were excluded at the end of 2022 for species protection reasons. Of the remaining four areas, two areas – In der Strothe and Am Wehsand – were classified as spatially and environmentally compatible in the recently completed spatial planning process. The TSO has now finalised Am Wehsand as the final location and will apply for approval in accordance with the Federal Immission Control Act in mid-2025.

In June 2024, Amprion reported that it had postponed the commissioning dates for BalWin1 and BalWin2. Amprion now expects to put both grid projects into operation in 2030 and 2031 respectively, from the earlier schedule of 2029 and 2030.

In February 2025, Dragados Offshore awarded a contract to Aker Solutions to deliver the steel substructure for the 2 GW HVDC converter station for the BalWin1 connection system, with an option for the steel substructure for the 2 GW BalWin2 grid connection system. The scope of work involves procurement, method engineering and construction of the offshore HVDC converter platform substructures. Preparation for procurement and method engineering will commence immediately, while construction is scheduled to begin in early 2026, with deliveries in 2028 and 2029. Fabrication of the HVDC substructures will be executed at Aker Solutions' yard in Verdal, Norway.

In March 2025, Amprion reported that the planning approval process for BalWin1 in the North Sea's Exclusive Economic Zone (EEZ), has commenced. The OWFs are located in the EEZ, and therefore fall under the jurisdiction of the German Federal Maritime and Hydrographic Agency (BSH or Bundesamtes für Seeschifffahrt und Hydrographie). The TSO has sought approval for the BalWin alpha converter platform and the approximately 121-km-long BalWin1 submarine cable system north of the 12 nautical-mile limit. The compatibility of the project with shipping and air traffic safety, as well as the protection of marine environment, will be considered. Participation of the public, authorities and other public interest groups has been ongoing since March 17, 2025. The goal is to obtain planning approval by mid-2026.

In May 2025, Dragados Offshore awarded a contract to Aker Solutions to deliver the steel substructure for the HVDC converter station for the BalWin2 grid connection system. The scope of work involves the procurement, fabrication engineering, and construction of the offshore HVDC converter platform substructure. Preparation is scheduled to commence in early 2026, with construction set to begin in early 2027 and delivery expected in 2029. The fabrication of the HVDC substructures will be executed by Aker Solutions' yard in Verdal, Norway.

In June 2025, Amprion received planning approval for the approximately 34-km-long section in the coastal waters of Lower Saxony. In addition to the horizontal drilling under the island and the mainland dike, the planning approval decisions also include the cable installation between the coast and the 12 nautical-mile limit.

Drilling will be carried out using the HDD method. This involves inserting cable protection pipes into the boreholes, into which the direct current cables are then pulled. Amprion is using an officially specified construction window from July to September 2025 for the construction work. Drilling from the centre of the island to the beach in the north is scheduled for 2026. Drilling under the mainland dike on the coast will follow in 2027. Installation of the power cables is planned for 2028 and 2029.

In July 2025, Amprion commenced construction work for submarine cable-laying of the two grid connections in the coastal waters of Lower Saxony, and the onshore area between the coast and the Osnabrück area.

The BalWin1 and BalWin2 offshore grid connection systems have a capacity of 2,000 MW each, which correspond to the combined needs of approximately 4 million people. The projects are scheduled to go into operation in 2030 and 2031 respectively.

(EUR1=USD1.16)

Adriatic Link, Abruzzo and Le Marche

Developers: Italy's power TSO Terna

Project details and status: The 1 GW Adriatic Link will connect Abruzzo and Le Marche in Italy. The new 250-km link will comprise two undersea cables (USC) with a length of 210 km, two UGC of approximately 40 km, and two converter substations located near the existing Cepagatti (Abruzzo) and Fano (Le Marche) electrical substations. The undersea cable will be laid at a maximum depth of 250 metres, while a controlled horizontal drilling (CHD) technique will be used for the landing points, allowing the pipeline to be installed without any impact on the coastline. Cables will be laid between 4 and 8 metres deep at the shoreline.

For the most part, the land route will follow the existing roadways, with two cables laid inside small trenches 80 cm wide and 1.6 metres deep. The CHD technique will be used at crossings to reduce the amount of excavation as well as the construction sites' interference with the roadways.

The EUR 1.3 billion project will facilitate the development and integration of renewable energy, helping to decarbonise Italy's electricity system, in line with the targets outlined by the National Integrated Energy and Climate Plan for Italy. Additionally, it will help improve the electricity exchange capacity between the various regions of the country, especially between the centre-south and the centre-north, thanks to the increase in power of approximately 1,000 MW, which will improve the transmission grid's efficiency, reliability and resilience.

In February 2021, Terna started the participatory design of the Adriatic Link.

In February 2023, Italy's Ministry of Environment and Energy Security launched the authorisation procedure for the creation of the Adriatic Link.

In September 2023, Terna awarded Italian cable manufacturing company Prysmian Group a EUR 630 million cable contract for the supply and laying of USC and UGCs for the project. The USCs will be laid at a maximum depth of 100 metres. HDD will be used for landing points, allowing for the installation of conduits while minimising environmental and social impacts on the coastline, and ensuring the preservation of the electrical connection in the event of coastal erosion. Similarly, existing road infrastructure will be primarily used for the UGCs.

All USCs with XLPE insulation will be produced at Prysmian's facility in Arco Felice, Italy, while the UGCs with P-laser insulation will be manufactured at its facility in Gron, France.

In February 2024, Terna received authorisation for the project from the Ministry of Environment and Energy Security.

In July 2025, Terna signed financing agreements with Intesa Sanpaolo (IMI Corporate and Investment Banking Division), Italian export credit agency SACE (formerly Servizi Assicurativi del Commercio Estero), and the European Investment Bank (EIB) for a total of EUR1.5 billion to back the development and construction of the Adriatic Link.

The operation is financially structured into three tranches, all of which are covered by SACE's Archimede guarantee for an amount exceeding EUR1 billion:

- A EUR750 million loan granted by the EIB to Terna, with a duration of 22 years;
- A EUR500 million credit line provided by Intesa Sanpaolo to Terna, with a duration of seven years; and
- An additional EUR250 million loan from Intesa Sanpaolo, with funding made available by the EIB, for a duration of seven years.

The project is scheduled to be commissioned by 2028.

(EUR1=USD 1.16)

Fourth Estonian–Latvian Interconnection

Developers: Estonian TSO Elering and Latvia's TSO, Augstsprieguma tikls (AST)

Project status and details: The fourth Estonia–Latvia electricity interconnection is planned to be built in hybrid mode, that is, in addition to connecting the electricity systems of the two countries, it will also be possible to connect offshore and onshore production capacities to it. The project will increase system security and stability, along with increasing the renewable energy capacity for both countries.

In October 2023, Elering and AST signed a memorandum of understanding (MoU) to jointly develop the fourth interconnection between the two countries. The TSOs have agreed to cooperate on preparatory activities, including several studies, which are a prerequisite to selecting an environment-friendly and technically economically preferable scenario for making future investment decisions regarding the interconnection.

In February 2024, Estonia's Ministry of Regional Affairs and Agriculture initiated the special state planning and strategic assessment of the environmental impact of the connection. The purpose of the planning is to find out the feasibility of building the Estonian part of the connection starting from Paide through Saaremaa to the Sõrve peninsula. The connection on land is mainly planned as 330 kV OHLs. New 330 kV lines are planned from Paide via Lihula to Virtsu, and from there connections to the west coast of Saaremaa, where the sea cable to Latvia would start. In places where it is not possible to plan an OHL, an UGC is planned. A submarine cable will be laid in the sea area. The locations of possible new power lines and the need for land will be determined during the process of the state's special planning.

The size of the planning area is approximately 6,314 km², covering Saaremaa and Muhu parishes in Saare county, Lääne-Nigula parish in Lääne county, Lääneranna and Põhja Pärnumaa parishes in Pärnu county, Märjamaa, Kehtna and Rapla parishes in Rapla county, and Türi parish in Järva county and Paide city. In the sea area, the planning area covers the Small Strait and part of the Great Strait. The planning area was chosen with a sufficient scope so as not to pre-select the location of electrical connections before the planning process, and to enable the location of alternatives for connections and for additional alternatives, if necessary, during the preparation of the plan and the assessment.

In April 2025, the Estonian Ministry of Economic Affairs and Communications presented a proposal to Elering to assess whether the connection could be built as one OHL between Saaremaa and the new substations in Lihula and on the mainland, instead of the previously planned two 330 kV OHLs. Elering considered the proposal and offered a potential solution. In the coming weeks, the ministry will decide on the number of OHLs to be constructed.

If it is decided to proceed with one OHL, Elering will further specify the route corridors outlined between Lihula and the west coast of Saaremaa in order to change the current approach and analyse one OHL instead of two. The initial task of the plan will also be specified. In order to select the best route alternative from all the location options, studies must be conducted, alternatives compared, and impacts assessed. Such a change will slightly affect the current schedule of completion by 2026, shifting the date by a couple of months.

In July 2025, Elering submitted an environmental impact assessment (EIA) plan to Estonia's Tarbijakaitse ja Tehnilise Järelevalve Amet (TTJA), the country's Consumer Protection and Technical Regulatory Authority (CPTRA), for the planned maritime section of the fourth Estonia-Latvia electricity interconnection.

The maritime section would start in southwestern Saaremaa and run from there to Latvia. The submarine cable consists of up to three 330 kV AC power cables and one fibre-optic communication cable with an operating capacity of up to 1,000 MW.

The EIA plan was prepared by Skepast&Puhkim OÜ, while the transboundary EIA procedure is managed by the Ministry of Climate.

The plan was available for public comment on the TTJA website from July 7, 2025 to July 28, 2025, post which a public discussion was held on August 7, 2025 in Saaremaa to introduce the plan and discuss the proposals.

After the EIA plan is approved, separate public procurements will be organised to conduct studies and prepare an EIA report by 2027.

Middle East and Africa

400 kV Chimuara–Nacala Transmission Project Phase II and III, Mozambique

Developer: Gridworks, a subsidiary of the UK's development finance institution, British International Investment

Project details and status: This is Mozambique's first independent transmission project (ITP) to connect the central and northern regions. The project will significantly improve the quality of power supply and electricity, especially in the provinces of Zambezia and Nampula, which have the lowest electricity access rates in the country (25 per cent and 18 per cent respectively). By increasing the reliability of the grid, the project will also enable industrial growth. The project will therefore enable industrial growth of the central and northern provinces, especially the Nacala Special Economic Zone, and help stimulate additional demand.

Gridworks will be responsible for Phases II and III of the three-phase project. Phase I of the project is being implemented by state-owned Electricidade de Mozambique (EDM) and involves the construction of the 367-km-long, 400 kV single-circuit line (three conductors per phase) from the Chimuara substation to the Alto Molocué substation, along with re-routing of existing lines. It also involves the construction of the new 400/220 kV Chimuara and Alto Molocué substations.

The estimated cost of the project is USD400 million.

In June 2024, EDM signed an agreement with Gridworks to develop Phases II and III of the project. It entails the development of the 272-km, 400 kV Alto Molócuè–Namialo line; the 98-km, 220 kV Namialo–Nampula line; and the 90-km, 220 kV Namialo–Nacala-à-Velha line, along with two new substations at Namialo and Nacala-à-Velha, and expansion of the Nampula substation. The project is expected to create a precedent for other projects that the government plans to finance with private participation.

In July 2025, Gridworks secured development funding from the International Finance Corporation (IFC), a member of the World Bank Group, to support Phases II and III. EDM completed the construction of Phase-I of the project. The contribution for the remaining two phases includes partial funding of development costs and technical support to ensure adherence to the IFC's Environmental and Social Performance Standards. It will also help mobilise broader project financing for ITP.◆

North America

GE Vernova to acquire French AI company Alteia to boost grid visualisation capabilities

GE Vernova Inc. has announced an agreement to acquire Alteia SAS, a France-based software firm known for its experience in artificial intelligence (AI), computer vision, and machine learning. The move aims to enhance GE Vernova's visual data and AI capabilities, particularly in support of utility grid operations and situational awareness.

Alteia's software is already in use as part of GE Vernova's GridOS Visual Intelligence offering, which integrates visual data and AI-enabled workflows to help utilities monitor and maintain electrical infrastructure. The tools allow grid operators to assess storm damage, identify vegetation management needs, and inspect assets spanning thousands of miles of transmission and distribution lines.

With the acquisition, GE Vernova plans to deepen the integration of visual intelligence into its broader GridOS software portfolio. By linking visual data with operational systems like Advanced Distribution Management Software (ADMS), the company says utilities will be better equipped to anticipate and respond to disruptions—such as extreme weather events—while improving grid resilience and reducing downtime. As per Alteia, the alignment between the two companies' missions perfectly places it to deliver smarter, more efficient infrastructure solutions at a time when grid resilience is more important than ever.

The financial terms of the deal were not disclosed. The transaction is expected to close on August 1, 2025.

OATI launches generative AI platform pilot for grid operations with CAISO

Open Access Technology International (OATI)—a global leading innovator of solutions for the energy industry and the power grid, headquartered in Minnesota, US—announced the launch of the world's first generative and agentic AI platform purpose-built for the energy industry, OATI Genie™, through a pilot programme with the California Independent System Operator (CAISO).

CAISO—the balancing authority for 80 per cent of the state of California and parts of Nevada, and operator of the Western Energy Imbalance Market – a real-time wholesale energy trading market that enables participants anywhere in the West to buy and sell energy when needed—and OATI are collaborating to, understand the CAISO's outage management system use cases, design the solution architecture, evaluate and select AI models, and deploy OATI Genie™ in an operations pilot. CAISO will evaluate the OATI Genie tool's ability to analyse diverse datasets and operating procedures, and streamline outage management procedures.

OATI Genie™ was developed as a result of OATI's legacy of robust research and development, designed to provide immediate impact for utilities, grid operators, power producers, and energy traders. CAISO's pilot will determine the extent to which its outage management system, which includes structured tables, unstructured text, and long review times for system operators, can be made nimbler and efficient, using generative AI.

CAISO confirmed that this initiative fits in perfectly with its ongoing control centre modernisation programme, which is designed to make sure its operators have the best tools available to them for maintaining system reliability. Improving situational awareness and freeing up time for other important tasks can make a real difference for the operators, who will have an opportunity to test this product later in 2025.

OATI Genie™ serves as a layer of intelligence to elevate and expand both existing and future OATI applications, including OATI webSmartEnergy® DERMS; GridMind® microgrid controller; webTrader™ energy trading; webTrans® transmission planning and scheduling, and more, enabling more efficient and reliable decision making by power grid system planners and operators. OATI Genie™ AI/ML models are hosted on OATI private data centres that voluntarily adhere to North American Electric Reliability Corporation Critical Infrastructure Protection (NERC CIP) standards and audits, providing utilities and grid operators with an added layer of security over public clouds.

OATI Genie™ brings the power of AI to the energy industry without mortgaging its tenants' safety and security. Because public AI models and cloud infrastructure pose potential risks for utilities, OATI Genie™ models live exclusively on OATI's data centre servers. After first analysing an organisation's data, OATI Genie™ identifies procedures and patterns in order to streamline daily operations— by automating user-identified tasks, and providing recommendations and insights into system conditions

Asia Pacific

Indian KEC International secures orders in multiple business segments

KEC International Limited, India's infrastructure engineering, procurement, and construction (EPC) major owned by the RPG Group, has announced that it has secured new orders amounting to INR15.09 billion across its various business verticals.

The company's transmission and distribution (T&D) segment bagged projects, including 400 kV quad transmission lines in India, 500/400/220 kV overhead transmission lines (OHL) in international markets, and the supply of towers, hardware, and poles in the Americas and the Middle East. The cables and conductors business also secured both domestic and international orders.

(INR1=USD0.012)

MN Holdings secures TNB substation expansion contract in Malaysia

MN Power Transmission Sendirian Sdn Bhd, a wholly owned subsidiary of MN Holdings Bhd, secured a MYR29.3 million contract from Tenaga Nasional Bhd (TNB), Malaysia's state-owned power utility, for the expansion of a substation in Johor. The company announced in a filing with Bursa Malaysia, the stock exchange of Malaysia, that it received a letter of award from TNB for the extension of two new 132 kV transformer bays

at the existing 132/33 kV main intake substation located in the Tanjung Langsat Industrial Estate. The project involves supplying, installing and commissioning the high voltage transformer units using air-insulated switchgear (AIS) technology, together with all associated civil works and secondary electrical systems. The contract, excluding sales and service tax (SST), is scheduled for completion within 540 days from the commencement date. MN Power is also required to furnish a performance security of MYR1.5 million or 5 per cent of the total contract value, within 56 days of the contract award.

MN Power Transmission has previously undertaken various power infrastructure projects across Malaysia, including transmission line works, substation construction, and maintenance services for utility providers such as TNB and Sabah Electricity Sdn Bhd. The latest contract adds to the company's growing portfolio in supporting Malaysia's energy infrastructure development, particularly in key industrial zones. The award further underscores MN Holdings' strong working relationship with TNB, and aligns with the utility giant's ongoing efforts to enhance grid reliability and capacity in high-demand industrial areas.

(MYR1=USD0.24)

Western Australia awards Clean Energy Link North project contracts

The Western Australian (WA) government has awarded AUD342 million in contracts to three companies, GenusPlus, UGL Engineering, and Acciona, as part of the AUD584 million Clean Energy Link North project, aimed at unlocking over 1 GW of new renewable energy capacity and enabling the integration of 400 MW of existing wind generation. The contracts represent the state's largest investment in electricity transmission infrastructure in over a decade, and form a cornerstone of WA's transition away from coal-fired power.

Under the broader Clean Energy Link North programme, funded through the State Budget and delivered by Western Power, Australia's state-owned power utility, the scope includes high-capacity transmission lines, substations, transformers, and terminal upgrades. Key infrastructure works feature the construction of a 26.5-km, 132 kV overhead transmission line (OHTL) from Wangara to Neerabup, new 132 kV and 330 kV terminals and line conversions, as well as enhancements at the Northern, Neerabup, and Eneabba terminals. A new terminal will be built at Three Springs, with additional bays and connections at Regans Ford to support the increased renewable load. This project is crucial for transporting renewable energy generated in the Midwest to the broader South West Interconnected System (SWIS), which services areas from Geraldton to Albany, and east to Kalgoorlie.

Clean Energy Link North marks Western Power's largest ever transmission project, reflecting its strategic importance to the state's decarbonisation goals. The government aims to double the share of renewables on the grid by 2030, while recognising that gas will continue to play a limited transitional role. However, concerns have been raised about the risks of advancing major projects before the updated Whole of System Plan, which is a long-term plan that outlines how the electricity network will operate in the future, is finalised, including potential inefficiencies and reduced investment certainty. Efforts are underway to work closely with industry stakeholders, with a comprehensive plan for the SWIS expected later this year. Projects developed outside designated renewable energy zones may be required to cover their grid connection costs, an issue that has previously discouraged investment and could contribute to higher electricity prices for consumers.

The upgrades, set for completion by 2027, will reinforce the northern section of SWIS, spanning from Malaga to Three Springs, approximately 300 km north of Perth.

(AUD1=USD0.65)

Uzbekistan's NEGU signs GIS substation contract with China's SDEE

Uzbekistan's grid developer, JSC National Electric Grid of Uzbekistan (NEGU), has signed an EPC contract with Chinese firm, Shandong Electrical Engineering and Equipment Group Company Limited (SDEE), a large state-owned enterprise in China specialising in the energy and power industry, for the development of two 220 kV GIS substations at Zafar and Faiziobod in Tashkent. The project will involve the design, supply, and installation of advanced GIS systems, using SF6 as the insulating medium, to enhance operational efficiency.

The initiative is designed to deliver multiple operational benefits, including minimisation of human error, reduced vulnerability to adverse climatic conditions, improved safety for technical personnel, and increased reliability of substation operations. It will also contribute to environmental impact reduction, support the aesthetic modernisation of facilities, and enable the use of advanced, state-of-the-art equipment to optimise operational workflows. This development comes amid strengthening economic ties between Uzbekistan and China, with bilateral trade exceeding USD13 billion in the previous fiscal year. Both governments have expressed strong confidence in reaching their USD20 billion trade target, reinforcing cooperation across infrastructure, energy, and technology sectors. Currently, around 3,700 Chinese-backed enterprises operate in Uzbekistan.

Europe

Siemens Energy named preferred bidder for UK's EGL4

Siemens Energy has been named as the preferred bidder to deliver two converter stations for the new subsea high voltage direct current (HVDC) link between Scotland and England – Eastern Green Link 4 (EGL4). National Grid Electricity Transmission Plc – the electricity transmission network owner of the UK, is jointly developing EGL4 with the UK's SP Energy Networks, which manages a portion of Scotland's transmission grid. EGL4 is one of five proposed subsea links between Scotland and England being delivered through joint ventures with Scottish transmission owners. Together, the five links will be capable of powering up to 10 million homes.

EGL4 recently concluded its second stage of public consultation at both ends of the link and is utilising the feedback to inform the project's development, which includes the planning application in

Scotland, expected during late Summer 2025, and an application for development consent to the Planning Inspectorate in England during 2026. Construction is currently expected to begin in 2029, with the link becoming operational in 2033.

Sumitomo Electric named preferred bidder for UK's proposed Sea Link

The UK's National Grid Electricity Transmission (NGET) has named Japanese technology provider, Sumitomo Electric Industries, as the preferred bidder for the HVDC cable element of the proposed 2 GW HVDC Sea Link. The latter project includes new converter stations at Suffolk and Kent, linked by a 138-km, 525 kV undersea cable (USC), routed through the southern North Sea and across the Thames Estuary. The project is currently under consideration by the Planning Inspectorate. It is a part of National Grid's The Great Grid Upgrade, the largest overhaul of the grid in generations.

Sumitomo Electric is now engaging with NGET to finalise the contract. The cable will be produced from the former's state-of-the-art submarine cable factory at Port of Nigg in Scotland.

GE secures contract from German TransnetBW to modernise Kühmoos grid node

German transmission system operator (TSO), TransnetBW GmbH, has awarded a contract to GE Vernova Inc to modernise the Kühmoos grid node, which is an important electrical substation in southern Germany that plays a vital role in cross-border power flows and regional grid stability. Once complete, the upgraded site is expected to enhance frequency regulation, voltage stability, and power exchange between Germany, France, and Switzerland. Located near the Swiss border, Kühmoos serves as a critical transmission hub and connection point for two major pumped-storage hydropower plants. As part of Germany's broader effort to strengthen grid infrastructure, the modernisation of Kühmoos aims to increase the capacity and reliability of the substation to support the integration of renewable energy and rising power flows across interconnected European networks.

The scope of work includes turnkey delivery of a new 380 kV GIS, replacing the existing AIS, doubling capacity within a significantly smaller footprint while maintaining live operations throughout construction. The project includes 15 bays of compact GIS technology and a main busbar system, allowing for more flexible, secure, and space-efficient power distribution. The project also integrates a mechanical switched capacitor with damping network (MSCDN) – a technology that helps regulate voltage and reduce losses, especially as more power flows through the grid.

Fluence Energy to construct large-scale BESS in Germany

Austria's leading energy company VERBUND has selected Fluence Energy GmbH – a subsidiary of US-based Fluence Energy Inc., to build large-scale battery-based storage systems (BESS) in Germany that will achieve a total output of over 92 MW and a storage capacity of 186 MWh. The first project, a large BESS in Weißenthurm-Kettig, Rhineland-Palatinate, will be implemented with a capacity of 50 MW and a storage capacity of 100 MWh. Another system with a capacity of 42.9 MW/86.5 MWh is planned in Elsterberg-Coschütz, Saxony. Both projects benefit from a modular system approach, which is intended to help ensure improved performance and scalability.

Prysmian secures EUR382.5 million framework from Italy's Terna

Italy's TSO, Terna SpA, has awarded a three-year framework agreement to Italian cable manufacturing company, Prysmian S.p.A, for the supply of high voltage alternating current (HVAC) cables and maintenance services for the cable infrastructure. The contract, with an optional extension of one additional year, has a potential total value of EUR382.5 million. Under the agreement, Terna has committed to purchasing a minimum of 50 km of high voltage cables annually, with the volume subject to increase based on system requirements. Prysmian will manufacture the cables at its expanded facility in Pignataro Maggiore, Campania. The site recently received over EUR20 million in investments aimed at boosting production capacity, particularly for high voltage cable manufacturing.

(EUR1=USD1.16)

Croatia's Koncar secures contract for 400 kV substation

Solarna Elektrana d.o.o., a subsidiary of the Spanish company Acciona Energía, has awarded a contract worth EUR15.3 million to Croatia's KONČAR Inc, for the construction and turnkey delivery of the new 400 kV Promina substation. The substation will be integrated into the national grid through 400 kV OHLs connecting it with the Konjsko and Velebit substations. It will serve as a key node for transmitting electricity from the Promina solar power plant to around 69,000 households. The solar plant will have an installed capacity of 150 MW, making it the largest such facility of its kind in Croatia and the broader region. This milestone marks the first new 400 kV substation project in Croatia in over two decades.

(EUR1=USD1.16)

Middle East and Africa

Saudi Electricity Company awards 380 kV contracts to local EPC companies

The state-owned Saudi Electricity Company (SEC) has awarded 380 kV contracts to local EPC companies – Civil & Electrical Projects Contracting Company (CEPCO), AI Gihaz Contracting Company, and Al Babtain Contracting Company.

The first contract to CEPCO involves the installation of 380 kV underground cables (UGC) and OHTL for the 380 kV Hajer 2 independent power producer (IPP) bulk supply point (BSP) project located in the eastern region of Saudi Arabia. The project scope includes the design, engineering, material procurement, construction, installation/replacement, testing, and commissioning of the UGC and OHTL.

SEC also awarded contracts worth SAR2.13 billion for the

construction of two 380 kV BSP substations in Afif City, situated in the central Najd region, along with three associated OHTL projects. Of these, AI Gihaz Contracting Company secured a SAR960 million deal for the Afif photovoltaic (PV) 1 BSP project, while Al Babtain Contracting Company clinched the SAR1.17 billion contract for Afif 2 PV BSP. Earlier in April 2025, these two companies had emerged as the lowest bidders for the projects.

Final contract awards have taken place after the successful technical and commercial evaluation of their proposals. The two substations will serve as key transmission nodes supporting the integration of large-scale solar PV generation into the national grid, supported by the National Renewable Energy Programme (NREP) overseen by the Ministry of Energy. In a related development, the Saudi Power Procurement Company (SPPC) issued a RfP for the sixth round of renewable energy projects aggregating 4.5 GW under the NREP.

(SAR1=USD0.27)

PA COST International secures contract for Al Nahdah substation from Saudi Arabia's SEC

Saudi Arabia's EPC company, PA COST International, has announced the signing of a new contract with the SEC for the construction of the 115/13.8 kV Al Nahdah substation in Dammam.

The project is a key component of Saudi Arabia's Network Reinforcement Program for Big Cities, aimed at bolstering grid reliability and meeting rising electricity demand in major urban centres. Once completed, the substation will enhance power supply stability in Dammam and support continued infrastructure growth across the region, reinforcing the Kingdom's broader power development goals. The scope of work includes complete design and engineering of the substation, along with the procurement, supply, and delivery of all required equipment and materials to the site. The contract also covers the construction, installation, testing, and commissioning of the substation.◆

North America

Design and installation of substation

Country: US
Organisation: City of Seward
Description/Scope of work: International competitive bids are invited for the design and installation of a substation at Spring Creek. The scope of project includes the reuse and relocation of existing transformers, installation of new circuit switches, reconfiguration of the distribution rack, replacement of the control building, and full civil and electrical site upgrades to support the city's transition from 69 kV to 115 kV transmission.
Closing date: September 16, 2025
Contact: 410 Adams Street, P.O. 167 Seward, Alaska 99664, US
Website: www.cityofseward.us

Supply of 230/69 kV power transformer

Country: US
Organisation: Lakeland Electric (substation operations department)
Description/Scope of work: International competitive bids are invited for the supply of a high voltage 230/69 kV power transformer with load tap changer.
Closing date: September 18, 2025
Contact: 1140 East Parker Street, Lakeland, Florida 33801, US
Phone: +863 834 8787
Email: linda.alspaugh@lakelandgov.net
Website: www.lakelandgov.net

Latin America

Construction of 220 kV line and substation

Country: Paraguay
Organisation: Administracion Nacional de Electricidad (ANDE)
Description/Scope of work: International competitive bids are invited for the construction project of the 220 kV Villa Hayes–Villa Real–Pozo Colorado–Loma Plata transmission line, and 220 kV Pozo Colorado substation, in the Western Region.
Closing date: August 16, 2024
Contact: C.P. Liliana Rocío Ortiz Benítez, Director of Public Procurement, ANDE, Father Egidio Cardozo 1268, Asuncion, Paraguay
Phone: +595 2172947/ 2172118; Email: dadli@ande.gov.py
Website: www.ande.gov.py

Asia Pacific

Construction of 400 kV substations and transmission infrastructure

Country: India
Organisation: Rajasthan Rajya Vidyut Prasaran Nigam Limited (RVPN)
Description/Scope of work: Competitive bids are re-invited for the construction of substations and associated transmission infrastructure at Amber (Jaipur-North) and Kumher. The details of the work are as detailed below:

- 400/220 kV substation at Kumher (with shunt reactors): Development of a 2x500 MVA, 400/220 kV substation at Kumher, Bharatpur district, along with a 400 kV, 1x125 MVAr bus-type shunt reactor and four 50 MVAr line-type shunt reactors, including associated bays. The scope covers the supply of all equipment and materials, erection (including civil works), testing, and commissioning on a turnkey basis. The work is expected to be completed in 720 days at an estimated cost of Rs 2,454.1 million.
- Transmission lines for Kumher substation: Construction of transmission infrastructure for the proposed 400 kV GSS Kumher, Bharatpur district, comprising two 400 kV transmission lines (approximately 49.5 km) and two 220 kV transmission lines (approximately 15 km). The project will be executed on a turnkey basis. The work is expected to be completed in 540 days at an estimated cost of Rs 1,302 million.
- 400/220 kV substation at Amber: Construction of a 2x500 MVA, 400/220 kV substation at Amber, Jaipur district. The scope includes the supply of all equipment and materials, erection (including civil works), testing, and commissioning on a turnkey basis. The work is expected to be completed in 540 days at an estimated cost of INR2,020.67 million.
- Transmission lines for Amber substation: Construction of transmission lines (approximately 3.5 km of 400 kV and 3 km of 220 kV) for the proposed Amber substation, including installation of optical ground wire (OPGW) on existing lines. Scope includes survey, supply, erection (with civil works), testing, and commissioning on a turnkey basis. The work is expected to be completed in 450 days at an estimated cost of INR184.6 million.

Bids for the same were earlier invited in May and June 2025, respectively.
Closing date: August 20, 2025
Contact: Superintending Engineer (Contracts I), RVPN, Regd. Office, Vidyut Bhawan, Janpath, Jyoti Nagar, Jaipur-302005
E-mail: se.contractl@rvpn co.in
Website: www.energy.rajasthan.gov.in/rvpnl

Replacement of ACSR Zebra conductors with HTLS conductors on 220 kV line

Country: India
Organisation: West Bengal State Electricity Transmission Company Limited (WBSETCL)
Description/Scope of Work: Competitive bids are invited for the replacement of the existing aluminium conductor steel reinforced (ACSR) Zebra conductor along with various transmission lines on a turnkey basis. The scope of work includes, replacement of existing ACSR Zebra conductor by high temperature low sag (HTLS) conductor (1,200 A) in respect of:

- 220 kV, Gokarna–Rejinagar D/C transmission lines (70.2 ckt km)
- 220 kV, Jeerat–Dharampur D/C transmission lines (33.34 ckt km)

- 220 kV, KLC Bantala–Subhasgram POWERGRID single-circuit (S/C) transmission line (19 ckt km)
- 220 kV, KLC Bantala–New Town AA-III S/C transmission line (13 ckt km)

The work is expected to be completed in 270 days at an estimated cost of INR1,049.36 million.
Closing Date: August 20, 2025
Contact: Chief Engineer (O&M) – I, WBSETCL, Vidyut Bhavan, 10th Floor, 'D' Block, Salt Lake City, Kolkata – 700 091
Phone: +91 33 2359 1901
Fax: +91 33 2359 1901
Email: cetr1955@gmail.com
Website: www.wbsetcl.in

Construction of 220/132/33 kV and 132/33 kV substations

Country: India
Organisation: Chhattisgarh State Power Transmission Company Limited (CSPTCL)
Description/Scope of work: National competitive bids are invited for two turnkey packages involving the construction of substations:
Package 1: Construction of a 220/132/33 kV substation at Bacheli (Patarras village), Dantewada district. The scope includes installation of two 160 MVA, 220/132/33 kV power transformers and two 40 MVA, 132/33 kV power transformers, along with six 220 kV bays, eleven 132 kV bays, and nine 33 kV bays.
Package 2: Construction of a 132/33 kV substation at Raigarh Medical College, Raigarh district. The scope includes installation of two 40 MVA, 132/33 kV power transformers, five 132 kV bays, and nine 33 kV bays.
Closing date: August 21, 2025 (Package 1) and August 28, 2025 (Package 2)
Contact: Office of the Executive Director (Project), Third floor, SLDC Building, Danganiya Raipur-492013, India
Phone: +91 771 257 4209/14/41
Fax: +91 771 2574246
Email: cepnp.csptel@cspc.co.in
Website: www.cspc.co.in

Procurement of substation package SS-06

Country: India
Organisation: Power Grid Corporation of India Limited (POWERGRID)
Description/Scope of work: Competitive bids are invited for the construction of a 220 kV line bay at the 400/220 kV Fatehgarh-III pooling station (PS) (Section-1) for the interconnection of the battery energy storage system (BESS) of JSW Renew Energy Five Limited. The project will be implemented by POWERGRID Ramgarh Transmission Limited.
Closing Date: August 21, 2025 (soft copy)
Contact: Rameshwar, Manager, POWERGRID, Rajasthan Projects Office ,4th Floor, REIL House,
Shipra Path, Mansarovar, Jaipur-302020
Phone: +91 7211185888/9149469200/9001890233
Email: 68rk93@powergrid.in; vijayprakashjarwal@powergrid.in; saurabh.agrawal@powergrid.in
Website: www.powergridindia.com

Supply of 400/220 kV AIS substation and 220 kV LILO transmission line

Country: India
Organisation: Odisha Power Transmission Corporation Limited (OPTCL)
Description/Scope of Work: Competitive bids are invited for the engineering, supply, testing, and commissioning of two 500 MVA and two 100 MVA, 400/220 kV GIS and 33 kV air-insulated substation (AIS) with a substation automation system (SAS) at Gopalpur, Odisha. The scope also includes the engineering, supply, and commissioning of a 220 kV D/C LILO transmission line, approximately 13 km in length, from the existing 220 kV Therubali–Atri D/C line to the proposed 400/220/33 kV GIS substation at Gopalpur.
The work is expected to be completed in 24 months at an estimated cost of INR2,417.33 million combined for all work.
Closing Date: August 29, 2025
Contact: Chief General Engineer (C.P.C) – I, OPTCL, Regd. Office, Janpath, Bhubaneswar-751007.
Phone: +91 674 2540051
Website: www.optcl.co.in

220 kV conductor replacement and substation works

Country: India
Organisation: Maharashtra State Electricity Transmission Company Limited (MSETCL)
Description/Scope of work: Domestic competitive bids are invited for the replacement of the existing 0.4 ACSR Deer conductor with an equivalent high performance conductor (HPC) on the 220 kV GCR (Eklahare)–Babhaleshwar Circuits I & II lines (83.57 km each), including the supply and installation of suitable hardware, accessories, porcelain long rod insulators, and associated equipment. The scope of work also covers associated end bay modifications at the 220 kV GCR substation and the 400 kV Babhaleswar substation and includes testing, commissioning and handing over of the upgraded lines under the jurisdiction of the extra high voltage (EHV) operation and maintenance (O&M) circle, Nashik.
The work is estimated to cost INR2,000.17 million.
Closing Date: August 29, 2024
Contact: Executive Engineer (TKC-1), MSETCL, 8th Floor, MSETCL, "Prakashganga", BKC, Bandra (E), Mumbai
Phone: +91 9167374535 and +91 22 69852717
Email: cecpa@mahatransco.in; secpa@mahatransco.in; eepc@mahatransco.in; eetkc1cpa@mahatransco.in
Website: www.mahatransco.in

Constructions of 150 kV transmission line

Country: Indonesia
Organisation: PT Perusahaan Listrik Negara (PT PLN) (Persero)
Description/Scope of work: International competitive bids are

invited for the construction of section 1 of the 150 kV Tanah Grogot–Sei Durian line.
Closing date: August 26, 2025
Contact: PT PLN (Persero), Jl. Trunojoyo Block, M-I No. 135, Kebayoran Baru, South Jakarta City, Special Capital Region of Jakarta-12160, Indonesia
Email: servicedesk@pln.co.id
Website: www.eproc.pln.co.id

Construction of 500 kV line

Country: Indonesia
Organisation: PT PLN (Persero)
Description/Scope of work: International competitive bids are invited for the construction of 500 kV Rawalo–Kesugihan (Pltu Adipala-Pltu Cilacap) transmission line.
Closing date: August 27, 2025
Contact: PT PLN (Persero), Jl. Trunojoyo Blk. MI No. 135, Melawai, Kby. Baru, South Jakarta City, Special Capital Region of Jakarta 12160, Indonesia
Email: servicedesk@pln.co.id
Website: www.eproc.pln.co.id

Construction of 500 kV lines and EHV substation extension

Country: Indonesia
Organisation: PT PLN (Persero)
Description/Scope of work: International competitive bids are invited for the construction of 500 kV Ungaran–Ampel and Ampel–Pedan transmission lines, along with extension of 500 kV Ungaran and 500 kV Pedan gardu induk tegangan ekstra tinggi (GITET) or EHV substations.
Closing date: August 27, 2025
Contact: Jl. Trunojoyo Blk. MI No.135, Melawai, Kby. Baru, South Jakarta City, Special Capital Region of Jakarta 12160
Email: servicedesk@pln.co.id
Website: www.eproc.pln.co.id

Construction of 150 kV Pakning–Siak line

Country: Indonesia
Organisation: PT PLN (Persero)
Description/Scope of work: International competitive bids are invited for the construction of 150 kV Pakning–Siak sections 1 and 2 transmission line.
Closing date: August 28, 2025
Contact: PT PLN (Persero), Jl. Trunojoyo Block, M-I No. 135, Kebayoran Baru, South Jakarta City, Special Capital Region of Jakarta-12160, Indonesia
Email: servicedesk@pln.co.id
Website: www.eproc.pln.co.id

Constructions of 150 kV transmission line

Country: Indonesia
Organisation: PT PLN (Persero)
Description/Scope of work: International competitive bids are invited for the construction of section 2 of the 150 kV Sei Durian–Tarjun line. Bidders are required to provide bid security in the amount of IDR4 million.
Closing date: August 28, 2025
Contact: PT PLN (Persero), Jl. Trunojoyo Block, M-I No. 135, Kebayoran Baru, South Jakarta City, Special Capital Region of Jakarta-12160, Indonesia
Email: servicedesk@pln.co.id
Website: www.eproc.pln.co.id

Europe

Delivery of five 123 kV shunt reactors

Country: Bulgaria
Organisation: Elektroenergien Sistemen Operator EAD (ESO)
Description/Scope of work: International competitive bids are invited for the supply of five adjustable 80 MVAr, 123 kV shunt reactors. The estimated tender value is BGN127.5 million.
Closing date: August 27, 2025
Contact: Radoslava Vaseva, ESO EAD, Tsar Boris III Boulevard No. 201, Sofiya 1618, Bulgaria
Phone: +359 29696854
Email: r.vaseva@eso.bg
Website: www.eso.bg

Replacement and modernisation of 110 kV secondary systems

Country: Croatia
Organisation: Hrvatski Operator Prijenosnog Sustava d.o.o. (HOPS)
Description/Scope of work: International competitive bids are invited for replacement and modernisation of the control system, supervision, the relay sewing and measurements of 110 kV Rovinj substation. The procurement is covered by the government procurement agreement (GPA)
Closing date: August 22, 2025
Contact: Purchasing Department, Kupska Street 4, city of Zagreb, 10000 Croatia
Phone: +385 51408222
Email: 25@hops.hr
Website: www.hops.hr

Procurement and installation of transformers

Country: Croatia
Organisation: HOPS d.o.o.
Description/Scope of work: International competitive bids are invited for procurement and installation of transformers with the possibility of angular regulation (phase shifting transformer – PST) in the existing Gračac transformer station. The procurement is covered by the GPA.
Closing date: August 25, 2025
Contact: Purchasing Department, Kupska Street 4, city of Zagreb, 10000 Croatia
Phone: +385 14545301
Email: 3000-V-21/25@hops.hr
Website: www.hops.hr

Installation of 150 kV UGC

Country: Greece
Organisation: Anexartitos Diacheiristis Metaforis llektrikis Energiasis (ADMIE)
Description/Scope of work: International competitive bids are invited for study, supply and installation of 150 kV XLPE UGCs for the implementation of a 150 kV double cable line for the connection of the new Chania II substation with the Chania substation.
Closing date: September 8, 2025
Contact: 89 Dirrachiou, Athens, 10443
Phone: +30 210 519 2329
Email: p.nika@admie.gr
Website: www.admie.gr

Installation of 150 kV cables

Country: Greece
Organisation: ADMIE
Description/Scope of work: International competitive bids are invited for the supply of materials and complete construction of the 150 kV Sfikias–Tap Aegini overhead line (OHL), installation of OPGW type protection conduit in the 150 kV Polyphytos–Sfikias OHL and alternative 150 kV Sfikias–System (Thessaloniki II–Ptolemaida) OHL and an underground section near Sfikias substation. The procurement is covered by the GPA.
Closing date: September 9, 2025
Contact: Nika Panagiota, 89 Dirrachiou, Athens, 104-43
Phone: +30 210 519 2329
Email: p.nika@admie.gr
Website: www.marketsite.gr

Delivery of 330 kV and 110 kV transformers

Country: Latvia
Organisation: Augstsprieguma tīkls AS (AST)
Description/Scope of work: International competitive bids are invited for the delivery of 330 kV and 110 kV combined transformers to the Valmiera substation.
Closing date: August 22, 2025
Contact: Valmiera substation No. 70, Raunas Street 4, Latvia
Email: valerijs.pols@ast.lv
Website: www.eis.gov.lv

Supply of 110-400 kV disconnectors

Country: Lithuania
Organisation: Litgrid AB
Description/Scope of work: International competitive bids are invited for the supply of 110- 400 kV disconnectors for electrical apparatus to switch or protect electrical circuits. The procurement is covered by the GPA.
Closing date: September 8, 2025
Contact: Karlo Gustavo Emilio Manerheimo g. 8, Vilnius, 05131
Phone: +370 65611391
Email: arunas.jurgelaitis@litgrid.eu
Website: www.litgrid.eu

Pre-construction activities for 400 kV line

Country: Poland
Organisation: Polskie Sieci Elektroenergetyczne SA (PSE)
Description/Scope of work: International competitive bids are invited for preparation of environmental documentation and construction designs, as well as obtaining final and binding administrative decisions for the construction of the 400 kV Grudziądz–Płock line. The procurement is covered by the GPA.
Closing date: August 19, 2025
Contact: ul. Warszawska 165, Konstancin – Jeziorna, 05520
Phone: +48 223213101
Email: robert.sledzik@pse.pl
Website: www.pse.pl

High voltage installation work

Country: Poland
Organisation: PGE Dystrybucja S.A.
Description/Scope of work: International competitive bids are invited for high voltage installation work and construction of the Kielce Dyminy main power station. The procurement is covered by the GPA.
Closing date: August 19, 2025
Contact: ODDZIAŁ SKARŻYSKO-KAMIENNA 20-340,
Lublin 20-340
Phone: +48 412526115
Email: sekretariat.os@pgedystrybucja.pl
Website: pgedystrybucja.pl

Expansion of 400/110 kV Gdansk Blonia station

Country: Poland
Organisation: PSE SA
Description/Scope of work: Competitive bids are invited for the expansion of the 400 kV Gdańsk Błonia station with the installation of passive power compensation devices.
Closing date: August 19, 2025
Contact: ul. 165 Warszawska Street, Konstancin-Jezorna 05-520, Poland
Phone: +48 223213101
Email: magdalena.kurzynoga@pse.pl
Website: www.pse.pl

Reconstruction of single-circuit 110 kV OHL

Country: Poland
Organisation: Tauron Dystrybucja S.A.
Description/Scope of work: International competitive bids are invited for the reconstruction of the single-circuit 110 kV OHL between Groszowice (Opole city) and Ozimek substations. The procurement is covered by the GPA.
Closing date: August 25, 2025
Contact: Purchasing Department, ul. Waryńskiego 1,
Opole, 45-047
Phone: +48 571 665 97
Email: agnieszka.patola-kowalska@tauron-dystrybucja.pl
Website: www.tauron-dystrybucja.pl

Reconstruction of single-circuit 110 kV OHL

Country: Poland
Organisation: Tauron Dystrybucja SA
Description/Scope of work: International competitive bids are invited for the reconstruction of the single-circuit 110 kV OHL between Pokój and Namysłów substations. The procurement is covered by the GPA.
Closing date: August 26, 2025
Contact: Purchasing Department, ul. Waryńskiego 1,
Opole, 45-047
Phone: +48 571 665 978
Email: agnieszka.patola-kowalska@tauron-dystrybucja.pl
Website: www.tauron-dystrybucja.pl

Construction of 400/110 kV Jaroalaw Systemowa station

Country: Poland
Organisation: PSE SA
Description/Scope of work: International competitive bids are invited for the construction of the 400/110 kV Jarosław Systemowa station with the introduction of the Rzeszów–Chmielnicka line switched to 400 kV voltage. The procurement is covered by the GPA.
Closing date: August 30, 2025
Contact: ul. Warszawska 165, Konstancin- Jeziorna, 05-520
Phone: +48 223213101
Email: piotr.gardzielik@pse.pl
Website: www.pse.pl

Reconstruction of 110 kV power line

Country: Poland
Organisation: PGW Dystrybucja S.A.
Description/Scope of work: International competitive bids are invited for the reconstruction of 110 kV power line with a fiber optic line on the route GPZ1 Białystok–Czarna Białostocka–Polanka within the area of operations of PGE Dystrybucja SA Białystok branch Poland. The procurement is covered by the GPA.
Closing date: September 1, 2025
Contact: PAGE Department, ul. Garbarska 21a, Lublin, 20-340, Poland
Phone: +48 857405239
Email: michal.weclewicz@pgedystrybucja.pl
Website: www.pgedystrybucja.pl

Modernisation of 220 kV Ostroleka–Elk line

Country: Poland
Organisation: PSE SA
Description/Scope of work: International competitive bids are invited for the modernisation of the 220 kV Ostrołęka–Ełk line. The procurement is covered by the GPA.
Closing date: September 8, 2025
Contact: ul. Warszawska 165, Konstancin – Jeziorna, 05520
Phone: +48 223213101 Email: jedrzej.bakowski@pse.pl Website: www.pse.pl

Construction of 110/15 kV power station

Country: Poland
Organisation: Tauron Dystrybucja SA
Description/Scope of work: International competitive bids are invited for the construction of the 110/15 kV GPZ Skorki power station in Częstochowa, including the construction of line connections to the 110 kV network. The procurement is covered by the GPA.
Closing date: September 8, 2025
Contact: al. Armii Krajowej 5, Częstochowa, 42-202
Phone: +48 572889326
Email: lukasz.kiedrzyn@tauron-dystrybucja.pl
Website: www.tauron-dystrybucja.pl

Production, testing and delivery of cables for 230 kV substation

Country: Switzerland
Organisation: Swissgrid AG
Description/Scope of work: International competitive bids are invited for the production, testing and delivery of conductor cables with multicon carbon core and the associated fittings for the 230 kV Muehleberg–St. Triphon line.
Closing date: September 5, 2025
Contact: Bleichemattstrasse 31, Postfach, Aarau, 5001, Switzerland
Phone: +41 585803435
Email: ausschreibungen-electricalequipment@swissgrid.ch
Website: www.swissgrid.ch/de/home/about-us/procurement.html

Technical planning for 380 kV substation

Country: Switzerland
Organisation: Swissgrid AG
Description/Scope of work: International competitive bids are invited for the design, construction, engineering and inspection services and planning mandate SIA 32-53 for the 380 kV Laufenburg substation. The procurement is covered by the GPA.
Closing date: September 19, 2025
Contact: Bleichemattstrasse 31, Aarau, 5001
Phone: + 41 585802111
Email: ausschreibungen-engineering@swissgrid.ch
Website: www.swissgrid.ch/

Replacement work for 220 kV line

Country: Switzerland
Organisation: Swissgrid AG
Description/Scope of work: International competitive bids are invited for the refurbishment of 54 km of 220 kV Bickigen–Mettlen line, including dismantling of existing wires and cables, mounting adapter plates on the boom tops, and installation of new conductors.
Closing date: September 26, 2025
Contact: Bleichemattstrasse 31, Aarau, 5001, Switzerland
Phone: +41 585802111
Email: ausschreibungen-bau@swissgrid.ch
Website: www.swissgrid.ch/de/home/about-us/procurement.html

Middle East and Africa

Construction of 500 kV OHL

Country: Egypt
Organisation: Egyptian Electricity Transmission Company (EETC)
Description/Scope of work: International competitive bids are invited for the construction of a 200 km, 500 kV OHL to evacuate 2.1 GW of renewable energy from the Gulf of Suez region. The contract is being financed by the European Bank for Reconstruction and Development (EBRD).
Closing date: August 26, 2025
Contact: Ms. Zeinab Kamar, Cairo, Floor 3, 11517, EETC, Egypt
Phone: +20 220541869
Email: zainab.qamar@eetc.gov.eg
Website: www.eehc.gov.eg

Design and supply of 230/132/33 kV New Mille substation

Country: Ethiopia
Organisation: African Development Bank (AfDB)
Description/Scope of work: International competitive bids are invited for the design, supply, and installation of a 230/132/33 kV New Mille substation and the extension of the 230 kV Semera substation**.**
Closing date: August 28, 2025
Contact: Abdul Kamara, Deputy Director General for East Africa and Country Manager, Get-House Building, 7th and 8th Floor, Kirkos Sub-City, Kebele 20/21, House N˚ 056, P.O. Box 25543 – 1000, Addis Ababa, Ethiopia
Phone: +251 115 546 336
Email: tsion.birhanu@eep.com.et, tsion.naod@gmail.com
Website: www.eep.com.et

Design, supply, and installation of substations

Country: Ethiopia
Organisation: Ethiopian Electric Power (EEP)
Description/Scope of work: International competitive bids are invited for the design, supply, installation, test and commissioning of several substations and transformers. The tender includes the following projects:

- Design, supply, installation, test and commissioning of Addis Centre, Black Lion, Gofa & Kaliti-I substations. The estimated cost of the contract is USD45.50 million.
- Design, supply, installation, test and commissioning of Cotobie, Gurara, Kaliti North and Weregeun substations. The estimated cost of the contract is USD48.27 million.
- Design, supply, installation, test and commissioning of the 132 kV Kaliti I–Gofa–Addis Center–Black Lion line; 132 kV Cotobie–Weregeun line; 230 kV and 132 kV Gurara Lines LILO and 132 kV Kaliti North LILO. The estimated cost of the contract is USD45.11 million.
- Procurement of eight auto power transformers and associated bay equipment for Gelan, Legateto, Sebeta-I and Sululta substations. The estimated cost of the contract is USD34.14 million.
- Procurement of power transformers and associated bay equipment for Addis West, Gefersa, Cotobie, Kaliti II, Mekanisa, and Torhayiloch substations. The estimated cost of the contract is USD26.67 million.
- Plant design, supply, installation, test and commissioning of Injibara, Kamashi and Debark substations. The estimated cost of the contract is USD29.1 million.
- Design, supply, installation, test and commissioning of transmission line associated with substations at Injibara, Kamashi and Debark involving an estimated cost of USD30.4 million.
- Plant design, supply, installation, test and commissioning of Fiche, Mehal Meda and Wereilu substations. The estimated cost of the contract is USD25.7 million.
- Design, supply, installation, test and commissioning of a transmission line associated with substations at Fiche, Mehal Meda and Wereilu. The estimated cost of the contract is USD32.6 million.

Closing date: November 22, 2025
Contact: Mr. Andualem Siae, Yeka sub city, Worda 09, First floor, 15881, Ethiopia
Phone: +251 115580597
Email: prime.mktengage@eep.com.et
Website: www.eep.com.et

Upgradation of 132/66 kV substation

Country: South Africa
Organisation: George Municipality, Republic of South Africa
Description/Scope of work: International competitive bids are invited for upgrading the 132/66 kV Schaapkop substation in George.
Closing date: August 22,2025
Contact: 9 George Road, Blanco, South Africa
Phone: +44 801 9111
Email: gmun@george.gov.za
Website: www.george.gov.za

Design and installation of 132 kV substations

Country: United Arab Emirates
Organisation: Dubai Electricity and Water Authority (DEWA)
Description/Scope of work: International competitive bids are invited for the construction, supply, installation, testing and commissioning of 132/11 kV Abrjsatw, Esknkwnj, Mdntawir, Mdntltf Mrkzmali, Orchidst, Danaroad and Horizon substations.
Closing date: August 26, 2025
Contact: Dubai Electricity and Water Authority P.O. Box 564, Dubai, U.A.E
Phone: +971 4 5151404
Fax: +971 4 601 9995
Email: customercare@dewa.gov.ae
Website: www.dewa.gov.ae◆

Global Transmission Report

Information and analysis on the global electricity transmission industry

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Global Transmission will keep you informed on all the key developments, trends and issues. It will track major projects, contracts and investments. It will profile leading transmission system operators. It will report on regulatory initiatives and examine their implementation. It will provide the latest data and statistics. It will also feature the views and perspectives of top industry experts and players.

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