



Interconnectors poised to reduce gas-burn in Singapore

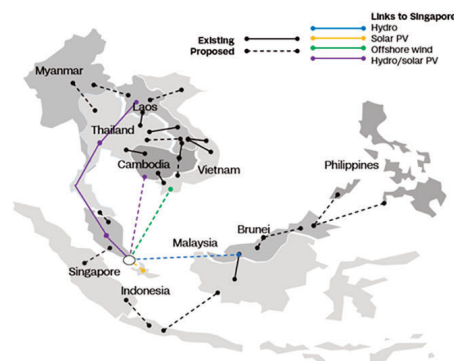
Singapore is at the heart of an evolving regional power grid which is poised to lower the share of LNG-fuelled power generation. If all proposed interconnections gets built, they could unlock up to 25 GW of renewable and energy storage capacity worth over \$40 billion, Rystad Energy reckons.

Today, over 96% of Singapore's electricity is generated by burning natural gas which needs to be imported as LNG. Yet, Rystad analysis finds that importing electricity through the regional grid is cost-effective for the city state and could help reduce CO2 emissions by 13 million tons per year.

Higher load factor helps reduce electricity cost

Though combined-cycle power plants are flexible and reliable in terms of operation, comparing the levelized cost of electricity (LCOE) reveals that electricity imports via ASEAN interconnectors may offer a more cost-effective alternative to building new domes-

Regional interconnectors and projects linking to Singapore



Source: Rystad Energy's Renewables & Power Solution, June 2025



tic CCGT capacity. Singapore's Electricity Market Authority (EMA) current regulatory framework requires projects to reach an annual load factor of at least 60% within five years of commercial operation. For project developers there is a strong economic incentive to exceed this target.

Raising the load factor target from 60% to 100% could lower the overall LCOE, as this helps spread transmission costs more equally. This impact is significant in countries such as Malaysia (Sarawak),

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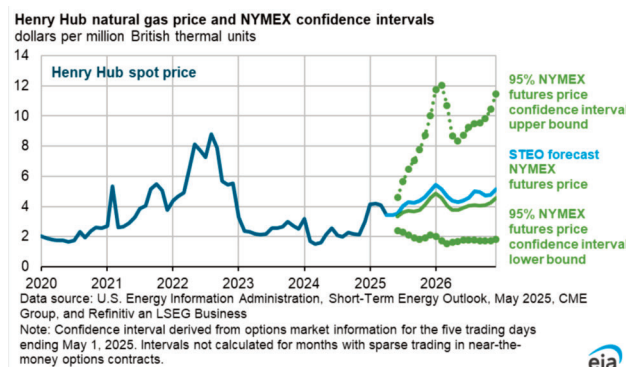
Henry Hub spot price forecast to top \$4.20 in Q3-2025

Natural gas prices in the US are forecast to rise in the coming months as more LNG gets exported and gas-burn in the electric power sector increases seasonally. EIA analysts see Henry Hub spot price average nearly \$4.20/MMBtu in the third quarter of 2025 – almost double the price from a year earlier.

This bullish market sentiment contributes to analysts' expectations that less gas will be used for power generation this year, compared to 2025. In fact, the US domestic gas market is getting increasingly tight which translates into higher electricity prices. Retail electricity prices, in particular, have been rising faster than the rate of inflation – soaring 13% between 2022 and this year.

Utilities pass on capital costs

"Though nominal prices oil-linked products declined over the past few years, electricity prices continued their steady increase as electric utilities



seek to pass on capital investment costs for upgrading ageing generation or grid infrastructure," analysts at the US Energy Information Administration (EIA) noted.

Annual spending by major US utilities to pro-

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Cambodia and Vietnam, where long transmission distances amplify cost optimization benefits particularly for hydropower projects.

Solar-plus-storage hybrid systems, with optimized direct current/alternating current (DC/AC) configurations and appropriately sized battery energy storage systems

(BESS), can already achieve load factors above 90%. By integrating solar and BESS technologies with the necessary backups, these systems can reach the level of reliability required by Singapore's EMA and could be comparable to other dispatchable energy sources.

"Hybrid systems could deliver lower LCOEs than many in the industry currently anticipate. Singapore, strategically positioned at the heart of this evolving energy system, stands to gain significantly," said Rystad's renewables analysts Nevi Cahya Winofa. ■

First Gen sells lion's share in gas business to Prime Infra

First Gen, the Lopez-led energy incumbent in the Philippines, is selling 60% of its gas business to Prime Infrastructure in a deal worth 500 billion Pesos, equivalent to US\$890 million. The transaction covers controlling interest in the 1 GW Santa Rita, 500 MW San Sorenzo, 97 MW Avion and the proposed 1.2 GW Santa Maria power plant along with the BW Batangas FSRU.

Santa Maria, a 1,200 MW combined-cycle power plant, will be fuelled via an interim offshore LNG terminal which is also part of the divested assets. Tokyo Gas had been contracted to supply an LNG cargo to First Gen in July 2024 which had been unloaded at the BW Batangas floating storage and regas unit (FSRU).

First Gen confirmed at the time it closed a tender for a cargo by awarding a contract to Tokyo Gas. Similar contracts were signed earlier with Shell Eastern LNG, Trafigura, TotalEnergies Gas and Power Asia and CNOOC Gas and Power Trading. The regasified LNG is designated for the First Gen Clean Energy Complex, comprising the Santa Rita, Avion and San Gabriel power plants.

The 1 GW Santa Maria CCGT used to supply baseload and mid-merit power to the Luzon grid. The Sta. Maria CCGT was

initially meant to enter operations by the end of this year or early 2025, but the timeline slipped and First Gen now decided to divest its gas power assets altogether.

Following the sale, Prime Infra will hold the lion's share of 60% in the Batangas-based gas power plants, with First Gen retaining the remaining 40%. The same equity split will apply to the LNG terminal, while Tokyo Gas of Japan will continue to hold a 20% stake. Prime Infra already owns Prime Energy, the operator of the vast but depleting Malampaya gas field, which used to be a critical source of fuel for Luzon's



Bird's eye view of BW Batangas FSRU

power generation.

As the largest renewable energy producer of the Philippines, First Gen covers about 18% of the country's electricity supply. Both First Gen and the media company ABS-CBN belong to the Lopez group of companies. ■

Continued from page 1

duce and deliver electricity soared 12% from \$287 billion in 2003 to \$320 billion in

2023, according to financial reports to the Federal Energy Regulatory Commission (FERC).

Need to upgrade ageing assets

Capital investment in electric infrastructure mostly drove the increase, more than doubling over the period as utilities had to replace or upgraded ageing generation, installed new gas peaking plants as well as wind and solar power combined with battery storage and/or built new

The generation-related part of US retail power prices, tends to lag changes in wholesale spot prices for fuels such as natural gas and coal. This time lag hinges on the utilities' contractual agreements for purchasing fuel from their respective suppliers, US government analyst pointed out.

US consumers spent an average of about \$1,760 on electricity expenditures last year

and in 2023. Among fuel-related expenditures, electricity expenditures are surpassed only by gasoline, which averaged nearly \$2,450 in 2023, according to the most recent data available from the US Bureau of Labour Statistics' Consumer Expenditure Survey. Annual fluctuations in electricity expenditures are normally more moderate than gasoline prices, which follow changes in global crude oil prices.

Stark regional price differences

Regional differences in electricity prices are stark: in the Pacific, Middle Atlantic, and New England census divisions, American households and industrial consumers already pay much more per kilowatt-hour (kWh) for electricity. But analyst warn retail electricity prices here could increase more than the national average, putting additional strain on customers. ■

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Australia: East Coast gas market faces structural shortfall

Shortfalls in Australia's East Coast gas markets force regulators to make tough choices. Price caps, while offering short-term consumer relief, risk to undermine project economics and deter investment in future supply, Wood Mackenzie warns.

“Recent exemptions have effectively set a floor price, as market participants anchor prices to the cap, making the market less responsive to supply-demand signals,” said Daniel Toleman, Wood Mackenzie’s research director of global LNG.

Export diversion is another option to help boost domestic supply but risks damaging Australia’s reputation as a reliable LNG supplier.

“Queensland LNG projects were approved without domestic obligations and rely on long-term contracts,” Toleman said, explaining: “Diverting exports would also require

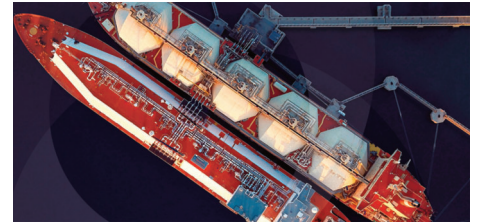
major infrastructure upgrades, as southern markets face the brunt of the shortfall.”

Importing LNG through floating storage and regasification units (FSRUs) is “technically feasible but commercially challenging,” analysts warn. Global demand for FSRUs has surged since the Russia-Ukraine conflict, making units scarce and costly. The government may need to underwrite the commercial risk of such infrastructure.

Moreover, importing LNG would expose Australia to volatile global prices. Domestic gas prices would align with international LNG costs plus regasification and transport charges — potentially far exceeding current

netback pricing.

Analysts pledge investors to come forward. Unlocking new domestic gas supply is the most effective way to reduce emissions and lower energy prices in Australia, Wood Mackenzie argues. But this would require a shift in government policy and a willingness to make politically difficult decisions. ■



Solar, wind could power 30% of data centers in ASEAN by 2030

Six major economies in ASEAN – Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam – are emerging as global data centre hotspots, with 2.9 GW of new capacity currently in the pipeline. Energy think tank Ember finds that wind and solar power could potentially cover 30% of the regions’ electricity demand – without relying on battery storage.

The slow pace of decarbonisation in Southeast Asia’s power sector is, however, threatening progress of powering the information, communication and technology industry with green energy sources, analysts warn.

Malaysia is projected to see the fastest growth in data centre electricity use, with demand expected to rise from 9 Terrawatt-hours (TWh) in 2024 to 68 TWh in 2030. This would account for 30% of national power consumption, and resulting emissions could increase sevenfold, reaching 40 million tons of CO₂e by 2030, the highest in the region. The Philippines, meanwhile, is projected to see a rise of up to 14 times in emissions, while Indonesia’s could quadruple.

Batteries no precondition for green energy transition

Electricity demand from data centers is rampant, but analysts at Ember are convinced

that around a third of data centre electricity demand in 2030 could be met with solar and wind, without the need for battery storage.

“Prioritising solar and wind power, as well as energy efficiency, supported by strong policies, a national framework for data centres and collaboration, would help ensure data centres drive sustainable digital growth rather than deepen reliance on fossil fuels,” Shabrina Nadhila, energy analyst at Ember commented.

Large tech companies rely on Power Purchase Agreements (PPAs) to secure clean electricity, while smaller operators need better access to flexible options like virtual PPAs and green tariffs. The latter can also support storage, Nadhila conceded, suggesting this would “help manage the variability of renewables.”

Energy efficiency – if embedded from the design phase of data center projects – could

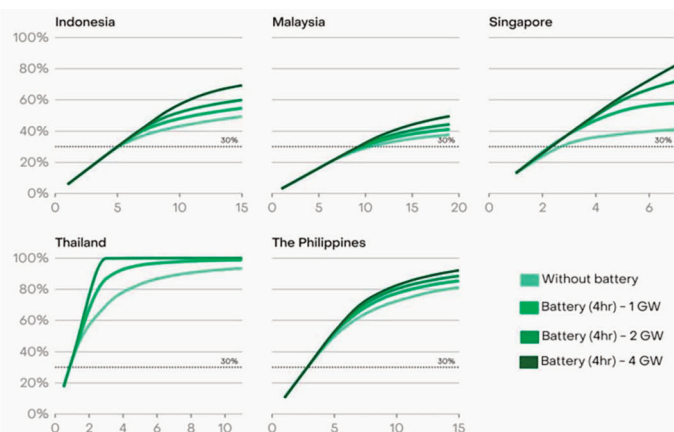
also help lower electricity use and ease pressure on the grid. ■

Low-carbon sources gain strength

Thermal power is losing ground in Europe as wind and solar surpassed the combined share of coal and gas for the first time. Low-carbon sources also transform the energy systems in the US and China – driven by \$2.1 trillion global investment in 2024, said Aliaksei Patonia of the Oxford Institute for Energy Studies.

According to the International Energy Agency (IEA), renewables accounted for 31.7% of global electricity generation last year, overtaking coal at 34.5%, while natural gas contributed 21.8%. The EU is a global leader in terms of wind and solar build-out, and bloc can cover nearly half of its electricity needs with renewable energy (48.7%), followed by nuclear at 20.9% and gas at 16.2%.

In contrast, gas remains the dominant energy source in the United States with 37.0% – largely due to the country’s abundant low-cost unconventional resources. In China, thermal coal still dominates the power gen mix but the share of the dirty fuel fell to 53%, while renewables increased to 44%. ■



Source: Ember's analysis based on solar and wind profiles from Renewable Ninja and data centre power demand projection. Solar capacity only for Peninsular Malaysia and Singapore

EMBER

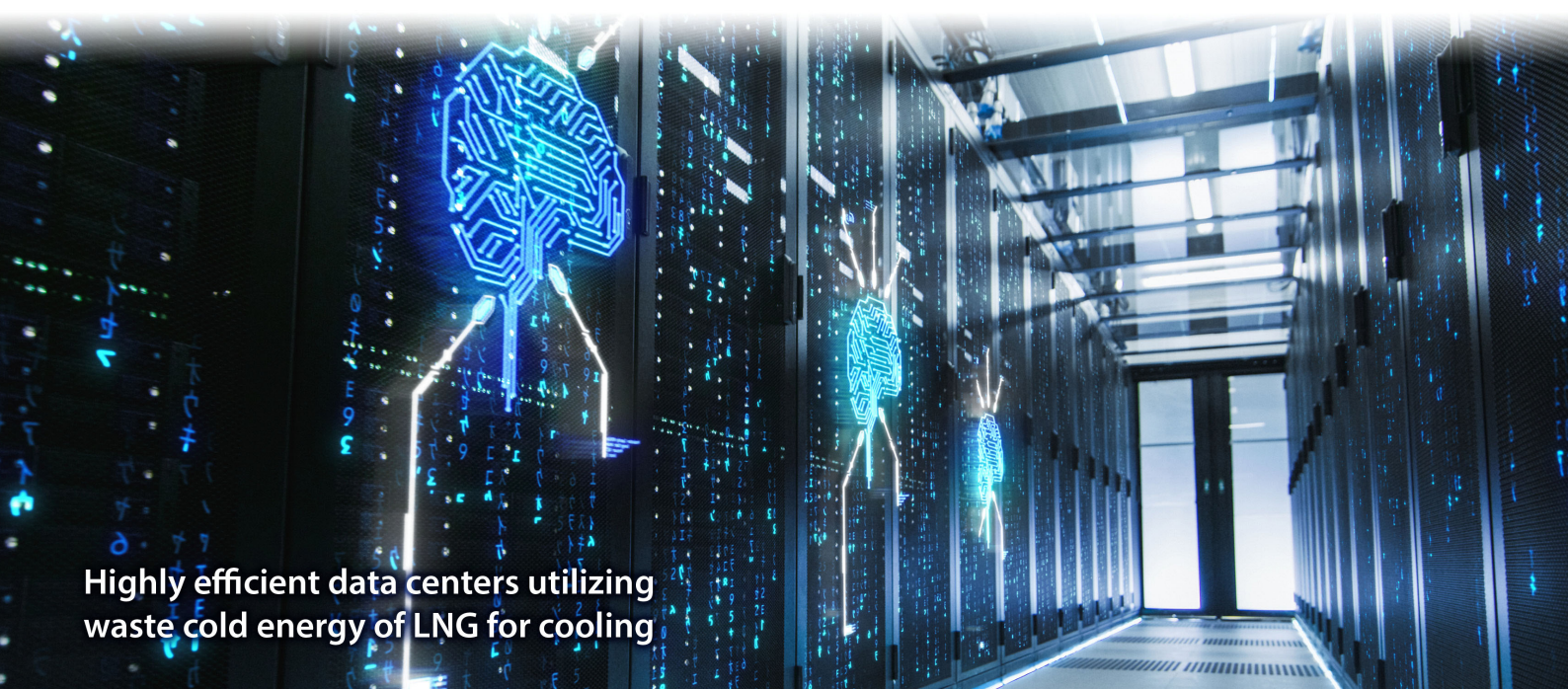


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US gov' slashes funding for CCS project worth \$3.7 billion

US energy secretary Chris Wright has terminated 24 awards of funding – worth US\$3.7 billion combined – for carbon capture and storage (CCS) projects. Affected projects include \$331 million for Exxon Mobil's hydrogen project at its Baytown refinery in Texas and \$270 million for Calpine's carbon capture projects in Texas and California.

Further projects delayed, if not derailed, by the cancellation of funding include \$170 million allocated to Kraft Heinz for several clean energy developments; \$500 million to Heidelberg Materials for a low-carbon cement project; \$375 million to Eastman Chemical for its molecular recycling facility in Longview, Texas.

The decision to cancel funding follows a sweeping review by Department of Energy (DOE) of projects approved in the final months of the Biden administration. Of the 24 cancelled awards, 16 were signed between Election Day and January 20, Bloomberg reports.

Now, the Trump-led DOE slashed financial support for projects focussed on CCS and other decarbonisation technologies, claiming these projects were "not economically viable," and would "not deliver a posi-

tive return on investment for taxpayers."

The energy secretary openly accused Biden's DOE team of negligence: "While the previous administration failed to conduct a thorough financial review before signing away billions of taxpayer dollars, the Trump administration is doing our due diligence to ensure we are utilizing taxpayer dollars to strengthen our national security, bolster affordable, reliable energy sources, and advance projects that generate the highest possible return on investment," said Secretary Wright.

"Today, we are acting in the best interest of the American people by cancelling these 24 awards," he claimed.



Exxon's Baytown refinery

Tightening purse strings, the DOE earlier this month set out a new framework for evaluating federal financial support on a case-by-case basis. When these more stringent guidelines were applied to the 24 awards, none met the necessary economic, national security, or energy security benchmarks to justify continued federal investment. ■

Ansaldo's dual-track strategy includes gas and new nuclear

Ansaldo Energia has announced two contracts that reinforce its strategic positioning in both the conventional and nuclear energy sectors. Together Uzatom, the Atomic Energy Agency of Uzbekistan, Ansaldo will work on the development small modular reactors while Ansaldo Green Tech is advancing hydrogen-ready combined-cycle gas combustion technology

As for new nuclear, the MoU with Uzatom covers key areas including the design and construction of new nuclear power plants, nuclear waste management solutions, and the development of specialized training programs to build technical capacity within Uzbekistan's nuclear workforce.

The focus on SMRs reflects growing global interest in modular, scalable, and low-carbon energy solutions. These reactors offer enhanced safety, reduced capital costs, and flexibility for integration with renewable energy systems — making them a critical

component of decarbonization strategies.

On the other hand, conventional power generation can be made more sustainable through hydrogen cofiring. To that end, Ansaldo and Duferco Energy sealed a strategic agreement this April to supply and commission a 1 MW electrolyser as part of the Hydrogen Valley project in Giammoro, in the Sicilian province of Messina. The electrolyser will be capable of producing over 500 kg of green H₂ per day, with a purity level of 99.9%.

The Giammoro Hydrogen Valley project includes a 4 MW photovoltaic system to power the electrolyser with a view to produce around 100 tons hydrogen per year. This green fuel will be primarily used to decarbonize the steel industry as well as the logistics and transport sector.

Investment in the project amounts to €10 million, supported by the Italy's National Recovery and Resilience Plan (PNRR) through the Sicilian region.

The Ansaldo-built electrolyser employs AEM (Anion Exchange Membrane) technology, which has been developed within the framework of the IPCEI project and

funded by the European Union's "NextGenerationEU" programme. The system will be assembled on a new production line currently under construction in Genova Campi. ■



Handshake after the MoU signing

NEWS NUDGES

Ethanol-fuelled plant to be tested in Brazil

Wärtsilä is partnering with a power plant in the Brazilian city of Recife with a view to running a 4 MW engine on ethanol for 4,000 hours during a two-year pilot starting in April 2026. The Finnish engine maker claims the tests will be 'world-first trial' in generating electricity with an ethanol-powered engine, though Petrobras and Vale ended a similar trial over high costs and low uptake.

PROPWR secures inaugural contract

ProPetro Holding's PROPWR division has secured its inaugural contract to commit 80 MW of power generation capacity for a Permian-focussed E&P operator starting from the third quarter of this year through 2026. Electricity will be supplied to a distributed microgrid installation, utilizing in-field gas.



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Baker Hughes to supply 16 gas turbines to data center

US technology firm Baker Hughes has been contracted by Frontier Infrastructure Holdings to supply 16 NovalT gas turbines to deliver up to 270 MW of electricity. Prometheus, PureWest and Frontier partner on a 1.2 GW data center campus in Wyoming.

Under the contract, Baker Hughes will deliver NovalT gas turbines which can quick-start and run on various blends of natural gas and hydrogen, as well as 100% hydrogen. Delivery also includes Brush Power four-pole generators, designated to energise Frontier's behind-the-meter power gen sites.

The order builds on an agreement,

sealed in March, to accelerate carbon capture and storage (CCS) and power solutions at the Sweetwater Carbon Storage Hub in Wyoming.

With reliable solutions for decentralised power, including hydrogen-ready turbines, geothermal, and cogeneration, Baker Hughes provides market-ready solutions for data center hyperscalers, project developers, packagers and end users.

"Leveraging our comprehensive range of integrated power solutions for Frontier's U.S. data center projects demonstrates innovative, scalable and lower-carbon technologies helping to meet the growing demand for power," commented Ganesh Ramaswamy, Baker Hughes vice president of Industrial & Energy Technology.



Render of Prometheus Hyperscale data centre in Wyoming

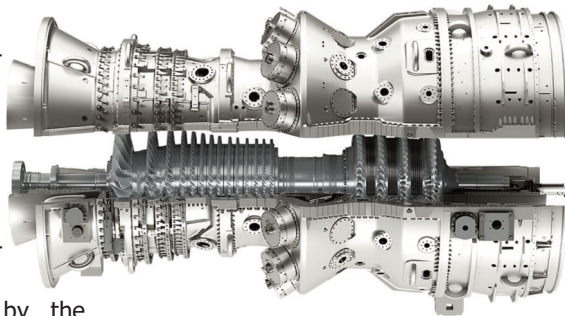
H-class turbines to expand Qurayyah power plant in Saudi Arabia

Three GE Vernova 7HA.03 and two 7HA.02 gas turbines will be installed at Qurayyah Independent Power Plant (QIPP) in Saudi Arabia under an order secured from Técnicas Reunidas and Orascom Construction. The expansion will add a 3 GW combined-cycle gas power plant with readiness for post-combustion carbon capture.

Técnicas Reunidas and Orascom Construction, under a 50-50 joint venture, will carry out the Engineering, Procurement and Construction (EPC) for the project. The flexible combined-cycle unit will help balance rising intermittent wind and solar power.

All electricity to generated by the Qurayyah IPP expansion project has been sold by Hajr Two Electricity Co. to the Saudi Power Procurement Company (SPPC). The deal, signed in February 2025, is between Hajr – owned by ACWA Power, the Saudi Electricity Company (SEC) and Haji Abdullah Alireza & Co – and SPPC as the principal buyer of electricity in Saudi Arabia.

"QIPP project is evidence of Saudi Arabia's strong belief in the future of gas as it emits less CO2 and other pollutants than oil-fuelled power plants" said Joseph Anis, CEO of GE Vernova's Gas Power business in Europe, Middle East & Africa. The Saudi government plans to generate half of the country's electricity from gas by 2030 and half from



Render of GE 7HA.03 gas turbine

renewables, paving the way to net-zero greenhouse gas (GHG) emissions by 2060.

GE Vernova has supported the evolution of the Kingdom's energy infrastructure for almost 90 years. The American company currently employs some 850 people in Saudi Arabia, e.g. in the Khobar Integration Facility (KIF) for grid solutions, as well as the GE Manufacturing and Technology Center (GEMTEC) campus in Dammam, the GE Saudi Advanced Turbines (GESAT) facility for the manufacturing of gas turbines, components and accessory modules as well as in a Diagnostics Center for the remote monitoring of power gen assets.

PG&E and Smart Wires to enhance grid capacity in California

Pacific Gas and Electric Company (PG&E) and Smart Wires will deploy advanced power flow control technology make the grid more reliable in meeting electricity supply commitments for data centers connecting in San Jose. The APFC technology mitigate thermal overloads, redirect power flow, and increase available capacity at its Los Esteros substation by 100 MW.

The California Independent System Operator (CAISO) forecasts a load increase of up to 500 MW in the San Jose area due to data center growth. While a new transmission line is planned for 2032, a quick solution was needed to ensure reliable power delivery starting in 2025.

Both reconductoring and energy storage proved too costly and slow, hence CAISO identified APFC as the most effective, reliable, and timely approach.

The substation at Los Esteros is located near new data centers under development in the Alviso community of San Jose. The installation of Smart Wires' SmartValve APFC devices is expected for completion in late 2025.

Joanna Lohkamp, CEO of Smart Wires explained their work with PG&E demonstrates the impact of our SmartValve technology, dynamically redirecting power from overloaded to underutilized lines. "This approach addresses current capacity constraints," she said, adding it "optimizes existing infrastructure while offering a scalable solution for future grid enhancements."



PG&E smart wires substation

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