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U.S. T&D Developers Line Up $6 Billion in First-Quarter Buildouts

Major utilities across the U.S. increased their annual spending on transmission and distribution (T&D) projects 12% from 2003 to 2023, from $287 billion to $320 billion, according to financial reports to the Federal Energy Regulatory Commission (FERC). That trend is set to continue next year with developments in regions facing higher demand for energy access. Industrial Info is tracking more than $6 billion worth of T&D projects across the U.S. that could begin construction in the first quarter, including more than $1 billion worth with a high likelihood (81% or more) of kicking off as planned.

Among the projects well-positioned to move forward is FirstEnergy Corporation's (NYSE:FE) (Akron, Ohio) **$36 million line from Bowling Green to Delta, Ohio**, which is designed to run nine miles and connect an existing, 345-kilovolt (kV) line to the **$80 million Melbourne Substation in Delta**, also set to begin construction. It will cover Fulton County's townships of Delta Village, Fulton, Pike, Swan Creek and York.

American Transmission Systems Incorporated, a FirstEnergy subsidiary, says the new line is needed "to enhance electric service reliability for existing customers, add redundancy to the network and allow for future growth." Subscribers to Industrial Info's Global Market Intelligence (GMI) Power Project Database can learn more from detailed reports on the power line and new substation.

Other FirstEnergy projects nearing kickoff in Ohio include a **$10.8 million transmission loop from Galion to Marion**, running about 20 miles from the existing Galion Substation to Shell plc's (NYSE:SHEL) (London, England) **$140 million Marion County Solar Plant**, which is set to begin construction before the end of 2024. Subscribers can read detailed reports on the transmission loop and solar plant.

AEP Texas, a regional subsidiary of American Electric Power (NASDAQ:AEP) (AEP) (Columbus, Ohio), is developing two T&D projects along the Texas-Mexico border: the **$24 million Lion Substation in San Juan**, just east of McAllen, which will include a three-mile transmission line, and a **$14 million line rebuild within Laredo**, which will relocate two miles of line connecting a pair of existing substations.

AEP says it is upgrading equipment "to meet current AEP standards" and reduce the likelihood of "wide, community-sustained power outages." Subscribers can read detailed reports on the San Juan and Laredo projects.

Other T&D developers in Texas include publicly owned utility Austin Energy, a department of the City of Austin, which is preparing for a **$34 million rebuild of the Brackenridge Substation**. The more than 40-year-old substation will be overhauled to meet downtown Austin's growing energy needs, according to the utility, which says upgraded electrical equipment and increased capacity are needed to support a reliable power supply. Subscribers can learn more from a detailed project report.

Kentucky Power Company, another regional subsidiary of AEP, aims to improve the transmission grid in southwestern Kentucky's Leslie County through its **Wooton-Stinnett Rebuild Project**, several phases of which are set to wrap up before the end of 2024. Early next year, Kentucky Power expects to begin work on a **$13.5 million rebuild of a line from Hyden to Hoskinston**, which will run about six miles, and a **$7.5 million upgrade of the Stinnett Substation in Hoskinston**, where one end of the line terminates.

"Crews plan to replace the wooden poles from the 1940s with steel H-frames and lattice tower structures and install new wires along the power line route," Kentucky Power said on AEP's website. "These upgrades ensure more reliable electric service to the community and reduce longer, community-sustained outages." Subscribers can read detailed reports on the line rebuild and substation upgrade.

Subscribers to Industrial Info's GMI Project and Plant databases can click here for a full list of detailed reports for projects mentioned in this article, and click here for a full list of related plant profiles.

Subscribers can click here for a full list of reports for T&D projects across the U.S. that could begin construction in the first quarter.

Canada Home to Billions' Worth of Power Projects Under Construction

While hydropower is the largest source of electricity in Canada, the country is developing other forms of power generation. Industrial Info is tracking billions' worth of Power Industry projects under construction in Canada, including a major hydro project and two projects aimed at boosting nuclear generation.

The most recent data from Statistics Canada, the Canada government's statistics arm, show hydropower accounted for 52% of the country's total electricity in September; nuclear generation accounted for about 16% of the mix, while wind accounted for about 7%. Solar power accounted for a little more than 1%.

The highest-valued Power Industry project under construction being tracked by Industrial Info is BC Hydro's (Vancouver, British Columbia) **US$6.3 billion Site C Dam Project in Fort St. John, British Columbia** (B.C). The six-unit, 1.1-gigawatt (GW) hydroelectric power station, on the Peace River in northeast B.C., is designed to provide about 5,100 gigawatt-hours of energy each year to the province's electricity grid. The first two generating units began operating in late October and December, and testing and commissioning work on the third unit is underway.

"With two generating units up and running, this increases BC Hydro's ability to produce more reliable electricity for customers heading into winter when the demand for power is at its highest," Adrian Dix, minister of energy and climate solutions, said in December while announcing the startup of the second unit. "By this time next year, we expect to have all six generating units at Site C providing electricity to British Columbians." Subscribers to Industrial Info's Global Market Intelligence (GMI) Power Project Database can click here to read a detailed project report.

The next two highest-valued projects are attributed to the buildout of nuclear power. Ontario Power Generation (OPG), which is wholly owned by the Ontario government, is at work **refurbishing Unit 4 at the Darlington Nuclear Generating Station in Bowmanville, Ontario**. The first of four units entered operation in 1990. The US$4.2 billion project entails refurbishing the 881-megawatt (MW) unit's reactor and steam generators, among other work. In a December update, OPG said the project was 51% complete and progressing on schedule, with the unit expected to return to service by the end of 2026. Click here to read the project report.

OPG has submitted an application to the Canadian Nuclear Safety Commission (CNSC) to renew the plant's operating license, which expires on November 30, 2025, for a 30-year term. A public hearing will take place next year.

Meanwhile, Bruce Power is **modernizing Unit 3** at the eight-unit, Bruce Nuclear Generating Station in Tiverton, Ontario. In an August update, Bruce Power said the reactor removal wrapped up ahead of schedule, after which replacement work on feeder tubes, fuel channels and calandria tubes would begin. The US$2.5 billion project is expected to be completed in 2026. Click here to read more information.

The project is part of the company's larger effort--the Major Component Replacement (MCR) project--aimed at modernizing several units (3, 4, 5, 6, 7 and 8) in order to extend the Bruce Power site's operational life to 2064.

Bruce Power in August said it was in the "final stages of preparation" for the Unit 4 project, which is scheduled to begin in 2025, while units 5, 7 and 8 are also slated for refurbishment over the next 10 years. Work on Unit 6 wrapped up in early January. Click here for a full list of related projects.

Canada is building out other sources of power generation, including renewable technologies such as wind power. The country's largest onshore windfarm--Copenhagen Infrastructure Partners' (Copenhagen, Denmark) nearly US$1 billion **Buffalo Plains Windfarm in Alberta**--began delivering power in August. Full commercial operations at the 495-megawatt (MW) windfarm are expected by the end of the year. Click here to read the detailed project report.

Most of the wind projects being tracked by Industrial Info that are under construction in Canada are either in their late stages of construction or the final commissioning phase. For more information on wind-generation projects across the country, see November 1, 2024, article - Canada Home to $37 Billion Worth of Wind-Generation Projects.

The Canadian government has set a goal of renewable and non-emitting energy sources accounting for 90% of the country's power generation. In October, Jonathan Wilkinson, the federal energy minister, announced the government put an additional C$500 million (US$361.1 million) in its Smart Renewables and Electrification Pathways program (SREP) to finance renewable energy and grid modernization technologies.

Canada recapitalized the program with C$2.9 billion (US$2 billion) worth of financing in its 2023 budget. Total investment in the funding stream since its inception now totals C$4.5 billion (US$3.1 billion).

Magnet Projects Bring Big Spending to U.S.

In addition to holding items on our refrigerators, magnets have a variety of purposes in the industrial sector and are used in high-tech equipment like wind turbines, electric vehicles, power transformers, health care, and aerospace and defense. Compared to conventional magnets, rare earth magnets are known for their exceptional strength and durability, making them essential in a wide range of applications, but these magnets come with downsides such as a scarcity of rare earth elements. Industrial Info is tracking more than $1.5 billion worth of projects involving magnets, including both those that employ rare earth elements and those that don't as well as a plant for recycling magnets.

One of the largest of these U.S. magnet projects comes from Germany's VACUUMSCHMELZE GmbH & Co. KG (Hanau) in Sumter, South Carolina, about 100 miles north of Charleston. Operating under its U.S. monicker Vac Magnetics LLC, the company is building a grassroot plant that will manufacture rare earth magnets for the automobile sector. The plant will produce high volumes of rare earth magnets, supplying a range of vehicles from General Motors Company (NYSE:GM) (Detroit, Michigan), including the Chevrolet Silverado, Cadillac Lyriq and the Hummer. Design-build firm Evans General Contractors Incorporated (Atlanta, Georgia) is expected to wrap up construction toward the end of next year. Subscribers to Industrial Info's Global Market Intelligence (GMI) Project Database can learn more by viewing the project report.

Some companies are taking a top-down approach to magnet production, mining the rare earths used in them in addition to manufacturing the magnets. Texas Mineral Resources Corporation (Sierra Blanca, Texas) and USA Rare Earth LLC (New York, New York) completed construction of a pilot-scale rare earth mine and separation facility in Hudspeth County, Texas, in 2022. Having demonstrated the project's technical and economic feasibility, the companies are ready to bring the project to full-scale operations, with an aim of supplying a magnet-production facility in Stillwater, Oklahoma.

The Oklahoma plant will have a pre-used magnet production line transferred from North Carolina to produce 1,200 tons per year of rare earth magnets. Subscribers can learn more by viewing the project reports on the expansion of the mine and separation facility in Sierra Blanca, Texas, and the magnet-production plant in Oklahoma.

When rare earth magnets operate at high temperatures for extended periods or are exposed to other magnetic fields, they can sometimes lose their magnetism, making magnet recycling an up-and-coming field. Enter Noveon Magnetics Incorporated (San Marcos, Texas), which completed an expansion of its neodymium magnet-recycling facility in San Marcos in 2024. Upon reaching the 2,000 tons per year of recycling capacity that the expansion provides, Noveon will continue ramping up the plant by 2,000 tons per year each year until reaching a capacity of 10,000 tons per year. The ramping project could begin this year, taking up to five years with breaks between capacity additions. Subscribers can click here to learn more about the project.

With the rarity of rare earths production in the U.S., some companies are working to develop powerful magnets that don't employ these elements. One contender is iron-nitrogen magnets, which benefit from abundant and relatively inexpensive materials, capabilities of working at high temperatures without magnetic loss and magnetic potential that could exceed rare earth magnets. Niron Magnetics Incorporated (Minneapolis, Minnesota) is developing iron-nitrogen magnets and is scaling up a previously completed pilot plant in Minneapolis to 100,000 kilograms per year of magnets. The aim is to further the technology to construct a commercial-scale plant of up to 10 million kilograms per year eventually, although this remains some years in the future. Subscribers can learn more by viewing the reports on the pilot plant's scale-up and commercial-scale plant.

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Join Industrial Info for Our In-Person 2025 North American Market Outlook

There are questions that are lingering on the minds of those in the industrial marketplace as to what the new year holds. Key decisions are still to be made regarding legislation that could have a pivotal impact on industrial sectors including the CHIPS Act, the Infrastructure Investment and Jobs Act, and the Inflation Reduction Act. We could see significant changes in total investment values for projects revolving around semiconductors, hydrogen, carbon emissions, renewable energy and more. Furthermore, the rise of artificial intelligence (AI) is being seen more and more in the industrial landscape, which is also causing a shift in investments.

The key question is this: Now that the election is over, what does the future hold? Join Industrial Info in Sugar Land, Texas, on Wednesday, January 29th, 2025, at 4:00 p.m. for our 2025 North America Industrial Market Outlook. This two-hour presentation will feature experts from several industries that will cover spending drivers and constraints for the new year.

Presentations will include:

- A global market outlook
- Chemical Processing
- Petroleum Refining & Alternative Fuels
- Midstream gas processing and liquefied natural gas markets
- Electric Power
- a North American spending forecast

A networking session will be held after the presentations, featuring an open bar and gourmet hors d'oeuvres, allowing you to mingle with your industry peers and ask questions of our experts.

In addition, for those wishing to broaden their knowledge of Industrial Info's products, interactive training workshops will begin at 1 p.m., including sessions on the latest PECWeb enhancements, our Analytics Solutions and how to maximize your Labor Analytics experience.

We hope you are able to join us for this popular event. Spaces will go quickly, so make sure to mark your calendars and RSVP today!