Enbridge’s Energy Infrastructure Projects

Last Updated: Jan. 27, 2022
# Table of Contents

- Crude Oil and Liquids Pipelines ................................................................. 3
- Natural Gas Transmission Pipelines .......................................................... 4
- Natural Gas Distribution ........................................................................... 9
- Offshore Projects ................................................................................... 12
- Power Generation ................................................................................... 14
- Power Transmission ................................................................................ 15
- Wind Energy .......................................................................................... 16
- Solar Energy .......................................................................................... 16
Crude Oil and Liquids Pipelines

Line 3 Replacement Program

Construction of the $5.3-billion Canadian portion of the Line 3 Replacement Program is complete and began commercial service in December 2019.

The $4-billion U.S. portion of the Line 3 Replacement Program, known as the Line 3 Replacement Project, consisted of replacing 34-inch pipe with new 36-inch pipe for 13 miles in North Dakota, 337 miles in Minnesota, and 14 miles in Wisconsin. Construction wrapped up in the U.S. in October 2021.

With project construction complete, the line is now known as Line 93.

- Type: Crude oil and liquids pipeline
- Status: Complete
- Length: 1,031 miles (1,660 km)
- In-service date: December 2019 (Canada); October 2021 (U.S.)
- Initial capacity: 760,000 barrels per day
- Expected to transport: Light, medium and heavy crude
- Estimated capital cost: C$5.3 billion in Canada, US$4 billion in the United States
Natural Gas Transmission Pipelines

Cameron Extension Project

The Cameron Extension Project will provide firm natural gas transportation supply to Venture Global LNG's Calcasieu Pass LNG export terminal in southwestern Louisiana.

Once in-service, the project will provide 750,000 dekatherms per day (Dth/d) of firm natural gas transportation supply to the Calcasieu Pass LNG facility in Cameron Parish.

- Type: Natural gas pipeline
- Status: Under construction
- Peak day capacity: 750,000 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- In-service target date: 2021
- Ownership: Texas Eastern Transmission, LP
- FERC docket number: Docket No. CP19-512-000
Middlesex Extension Project

The Middlesex Extension Project enhances the reliability of service to an existing power generation facility which provides electricity to New Jersey, and strengthens the region’s energy infrastructure by providing access to alternative, often lower cost, natural gas supplies.

The Middlesex Extension Project connects Texas Eastern Transmission, LP’s (Texas Eastern) existing Line 20 Mainline pipeline to the existing Transcontinental Gas Pipe Line (Transco) pipeline facilities, including its Mainline E and Woodbridge Lateral.

Project facilities include an approximately 1.5-mile, 20-inch diameter natural gas pipeline, a new metering and regulating station, pipe inspection and tie-in facilities, and interconnecting piping.

- Type: Natural gas pipeline
- Status: Complete
- Peak day capacity: 264,000 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- In-service target date: Nov. 1, 2021
- Ownership: Texas Eastern Transmission, LP
- FERC docket number: Docket No. CP20-30-000
Ridgeline Expansion Project

Enbridge is proud to be working with the Tennessee Valley Authority (TVA) on a project that would provide affordable and cleaner energy for the utility’s customers.

We are proposing to design, construct and operate the Ridgeline Expansion Project (Ridgeline), an expansion of Enbridge’s existing East Tennessee Natural Gas (ETNG) system.

The purpose of this proposed project is to provide natural gas to serve one of the power generation options that TVA is currently considering to replace the Kingston Fossil Plant. Replacing coal-fired generation at the Kingston Fossil Plant with natural gas would provide Tennesseans with a lower-carbon, cleaner-burning energy source as we transition toward the future.

The proposed scope includes the installation of approximately 117 miles of 30-inch pipeline looping, an approximately 8-mile 24-inch lateral and one electric-powered compressor station. The majority of the route for the proposed pipeline would be located within the existing system’s right-of-way where possible to minimize impacts to landowners and the environment.

Ridgeline is in the preliminary phase of project development. All necessary regulatory authorizations from the Federal Energy Regulatory Commission (FERC) and other federal and state agencies are required before construction of the project can commence. Pending a positive final investment decision and the approval and receipt of all necessary permits, construction would begin in 2025 with a target in-service date of fall 2026.

- **Type**: Natural gas pipeline
- **Status**: Under review
- **Expected to transport**: Natural gas
- **In-service target date**: Fall 2026
- **Ownership**: Enbridge Inc. (100%)
Rio Bravo Pipeline Project

The Rio Bravo Pipeline Project is designed to transport up to 4.5 billion cubic feet per day of natural gas from the Agua Dulce supply area to NextDecade’s Rio Grande LNG project in Brownsville, Texas.

Enbridge entered into a definitive agreement on Feb. 13, 2020 whereby Enbridge would acquire Rio Bravo Pipeline Company, LLC (RBPL) from NextDecade for a cash purchase price not to exceed $25 million, with $15 million paid at closing and the balance paid upon NextDecade’s reaching a positive final investment decision (FID) on its Rio Grande LNG export facility in the Port of Brownsville, Texas.

Enbridge and NextDecade in September 2019 had announced a Memorandum of Understanding (MOU) to jointly pursue the development of the Rio Bravo Pipeline (Rio Bravo) and other natural gas pipelines in South Texas to transport natural gas to NextDecade’s Rio Grande LNG project located in Brownsville, Texas.


Enbridge now owns 100% of RBPL and is responsible for the development, financing, construction, and operations of the Rio Bravo Pipeline. NextDecade will continue to be responsible for the development, financing, construction, and operations of its Rio Grande LNG export facility.

Read the Feb. 13, 2020 news release.

- Type: Natural gas pipeline
- Status: Proposed
- Peak day capacity: 4.5 Bcf/d (billion cubic feet per day)
- Expected to transport: Natural gas
- Ownership: Enbridge (100%)
Three Rivers Interconnection Project

The Three Rivers Interconnection Project will provide safe, reliable natural gas transmission for power generation in Illinois.

Alliance Pipeline L.P. (Alliance) is proposing to construct, install, own, operate, and maintain approximately 2.8-miles of 20-inch diameter natural gas pipeline, a new metering and regulating station, and other related auxiliary facilities and appurtenances.

The project will provide natural gas transportation services to Competitive Power Ventures’ planned Three Rivers Energy Center in Grundy County, Illinois.

The proposed Three Rivers Interconnection Project will be capable of delivering approximately 210 million standard cubic feet per day of natural gas.

Alliance Pipeline L.P. is a joint venture of Enbridge and Pembina Pipeline Corporation.

- Type: Natural gas pipeline
- Status: Proposed
- Peak day capacity: 210,000 MMcf/d
- Expected to transport: Natural gas
- In-service target date: Third quarter 2022
- Ownership: Enbridge (50%), Pembina Pipeline Corporation (50%)
- Operator: Alliance Pipeline L.P.
Natural Gas Distribution

Dawn Corunna Project

To maintain the safe and reliable operation of our natural gas system, and to continue meeting the natural gas needs of our customers, Enbridge Gas is replacing some of our older natural gas storage and transmission assets in the St. Clair Township, Ontario, area.

The proposed project includes decommissioning seven of the 11 natural gas compressors currently located at the Corunna Compressor Station in St. Clair Township, which are approaching the end of their lifecycles. The project also includes the construction of a new 36-inch diameter steel pipeline between the Corunna Compressor Station and the Dawn Operations Centre, in the Township of Dawn-Euphemia.

If approved by the Ontario Energy Board (OEB), construction could begin in mid-2023 and be complete by the end of 2023.

Learn more at the Enbridge Gas website.

London Lines Replacement Project

Enbridge Gas is replacing a section of natural gas pipeline across Lambton and Middlesex Counties in Ontario in order to improve the integrity of the pipeline network and to increase system flexibility.

The London Lines Replacement Project (LLRP) includes the construction of approximately 82 kilometers (km) of a combination of 4 and 6 inches in diameter high pressure natural gas pipeline. This will replace the two current pipelines known collectively as the London Lines. The LLRP will also include the construction of 8.4 km of a secondary 6-inch pipeline which will reinforce the new pipeline from a source near the community of Strathroy.

This project has been approved by the Ontario Energy Board and construction is underway. Construction is expected to be complete by the end of 2021.
Panhandle Regional Expansion Project

To increase capacity and serve additional demand for affordable and reliable energy, Enbridge Gas is proposing to increase the capacity of the existing Panhandle Transmission System, which serves residential, commercial, industrial, greenhouse, and power generation customers in Windsor, Essex County, and Chatham-Kent, Ontario.

The proposed project includes three main components:

- The construction of a natural gas transmission pipeline, up to 42 inches in diameter and approximately 23 km in length, which will connect the Panhandle pipeline system between the Dover Transmission Station in Chatham-Kent and the Comber Transmission Station in the Municipality of Lakeshore. This pipeline will be adjacent to an existing pipeline corridor.
- Construction of a new 16-inch pipeline to connect the Leamington North Line to both the Kingsville East Line and Leamington North Reinforcement Line. The pipeline will be approximately 12 km long and located in both the Town of Kingsville and Municipality of Leamington.
- Construction of a new 16-inch pipeline to connect the Tilbury East Valve Site to the Wheatley Road Station. This will be approximately 6 km in length and located either within the Municipality of Chatham-Kent or the Municipality of Lakeshore.

If approved by the Ontario Energy Board (OEB), construction could begin as early as spring 2023 and the proposed pipelines could be in service by fall 2023.
Sarnia Industrial Pipeline Reinforcement Project

Demand for natural gas from industries in the Sarnia area is increasing. As a result, Enbridge Gas is constructing a new natural gas pipeline between our existing Dow valve site and Bluewater interconnect transmission stations in the Township of St. Clair.

The pipeline will be 20 inches in diameter, and approximately 1.2 km in length.

The project has been approved by the Ontario Energy Board (OEB). Construction has begun, with an in-service date of fall 2021.

Learn more at the Enbridge Gas website.

Windsor Pipeline Replacement Project

In Windsor, Essex County and Chatham-Kent, Ontario, there is a need to ensure our natural gas pipelines and infrastructure continue to deliver natural gas reliably. With that in mind, Enbridge Gas Inc. is replacing the Windsor Line natural gas pipeline. Our project involves replacing approximately 64 km of the existing Windsor Line, which is a combination of 8 inch and 10-inch diameter pipelines, with a new 6-inch diameter pipeline that will be constructed in the vicinity of the existing pipeline.

The project has been approved by the Ontario Energy Board and construction has begun. The project is expected to be complete by the end of 2021.

Learn more at the Enbridge Gas website.
Offshore Projects

St. James Development Project

A brownfield joint-development opportunity to develop a deep-water crude and refined products terminal in Louisiana.

The St. James Development Project is a brownfield joint-development opportunity to develop a deep-water crude and refined products terminal which will serve as an independent, third-party logistics solution for customers in the area.

Enbridge will hold a 50% interest in this brownfield opportunity, whose site is strategically located within the St. James petroleum crude hub in Louisiana and has access to ample marine waterfront and pipeline connectivity.

Enbridge acquired the project alongside a number of Gulf Coast assets from Moda Midstream, LLC in a transaction announced Sept. 7, 2021.

Facility and services:

- Existing waterfront with a ship and a barge dock
- Expansion capability for one additional ship and barge dock
- Up to 8 MMBBls of permitted tank capacity
- Additional land available for storage expansion
- In-tank blending
SPOT

Enbridge, through the Seaway Pipeline System, has ownership in two existing docks, that are fully capable of importing and exporting crude oil on the Gulf coast at Freeport and Texas City.

Freeport has a draft of 42 feet and can load at 20,000 barrels per hour and Texas City has a draft of 45 feet and can load at 35,000 barrels per hour. In addition, Enbridge has negotiated an option to purchase an equity interest in Enterprise’s Sea Port Oil Terminal (SPOT).

SPOT will provide direct loading capabilities into VLCCs, which will provide a more efficient export solution. With a design loading rate of 85,000 barrels per hour, SPOT will be able to load a VLCC in 24 hours. SPOT is expected to receive permits in 2021 with an estimated in-service date of 2023.
Power Generation

Whitetail Peaking Station

Enbridge’s proposed Whitetail Peaking Station would involve construction of a 186-megawatt (MW) natural gas-fired simple cycle power generation facility about 16 miles (25 kilometers) northeast of Peace River, AB. The proposed project would use four turbine generator packages with dry low-emission technology, four continuous emission monitoring systems, four step-up transformers, and a two-km natural gas pipeline connecting the facility to the NOVA Gas system.

- Type: Natural gas-fired power generation facility
- Status: Planned
- Expected in-service date: 2022
- Expected capacity: 186 megawatts
Power Transmission

East-West Tie (EWT) Transmission Project

The East-West Tie Transmission Project (the Project) in northwestern Ontario will consist of a new, approximately 280-mile (450-km), double-circuit, 230-kilovolt (kV) transmission line. The Project generally parallels an existing double-circuit, 230-kV transmission line that connects the Wawa Transformer Station to the Lakehead Transformer Station near Thunder Bay, ON, including a connection midway in Marathon, ON. The project is being built by NextBridge Infrastructure (NextBridge), a partnership between affiliates of Enbridge, NextEra Energy Canada and OMERS Infrastructure.

Construction of the project began in September 2019 and is targeted to be complete by March 2022.

- Type: Power transmission line
- Status: Under construction
- Length: 280 miles (450 km)
- Capacity: 230 kV
- Expected in-service date: March 2022
Wind Energy

Calvados Offshore Wind Project

Enbridge and its partners, EDF Renewables and wpd, are developing the Calvados Offshore Wind Project off the Bessin, France coastline.

The 448-megawatt (MW) wind farm will feature 64 7-MW Siemens Gamesa Renewable Energy (SGRE) turbines to be manufactured in France. The turbines will come from the same Quai, Joannes Couvert plant where SGRE will make turbines for our Fécamp offshore wind project.

Turbines will be located 10 kilometres off the Bessin coast, and deployed in an area of about 45 square km.

Enbridge has a 21.7% ownership stake in the Saint-Nazaire Offshore Wind Project, which is expected to enter service in 2024.

Visit the project website for more information.

- **Type**: Wind energy project
- **Status**: Under construction
- **Location**: Courseulles sur Mer, about 10 km off Bessin’s coast
- **Expected in-service date**: 2024
- **Expected capacity**: 448 MW
- **Expected number of turbines**: 64
- **Expected equivalent homes served**: 300,000
Fécamp Offshore Wind

Enbridge and its partner EDF Renouvelables are developing the Fécamp Offshore Wind Project off France’s northwest coast, not far from Dieppe.

The 497-megawatt (MW) wind project will feature 71 Siemens Gamesa Renewable Energy 7 MW turbines to be manufactured in France. The project will generate electricity equivalent to the power needs of more than 416,000 homes.

Turbines will be located between 13 and 22 kilometres off Fécamp’s coast, at depths around 30 metres, and deployed in an area of about 60 square km.

Enbridge has a 35% ownership stake in the Fécamp Offshore Wind Project, which is expected to enter operation in 2023.

Visit the project website for more information.

- **Type**: Wind energy project
- **Status**: Under Construction
- **Location**: English Channel, about 13 to 22 km off France’s northwest coast, just south of Dieppe
- **Expected in-service date**: 2023
- **Expected capacity**: 497 MW
- **Expected number of turbines**: 71
- **Expected equivalent homes served**: 416,000
Saint-Nazaire Offshore Wind Project

Enbridge and its partner EDF Renouvelables are developing the Saint-Nazaire Offshore Wind Project in the Loire-Atlantique region in coastal France.

The 480-megawatt (MW) wind farm will feature 80 GE Haliade 160-6MW turbines to be manufactured in France. According to GE, each Haliade turbine powers 5,000 homes; the project is expected to generate the equivalent of 20% of the Loire-Atlantique’s electricity consumption.

Turbines will be located between 12 and 20 kilometres off the Loire-Atlantique coast, at depths ranging from 12 to 25 metres, and deployed an area of about 78 square km.

Enbridge has a 50% ownership stake in the Saint-Nazaire Offshore Wind Project, which is expected to enter service in 2022.

Visit the project website for more information.

- **Type**: Wind energy project
- **Status**: Under construction
- **Location**: Bay of Biscay, about 12 to 20 km off France’s Loire-Atlantique coast
- **Expected in-service date**: 2022
- **Expected capacity**: 480 MW
- **Expected number of turbines**: 80
- **Expected equivalent homes served**: 400,000
Adams Solar

Adams Solar is an 8.3-megawatt (MW) solar energy project in Grand Marsh, Wisconsin.

Once completed, the project will supply a portion of the power needed by Enbridge’s Lakehead liquid pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Grand Marsh, WI
- Capacity: 8.3 megawatts (MW)
- Expected in-service date: Q4 2022
- Equivalent homes served: 2,156

Bedford Solar

Bedford Solar is a 6.8-megawatt (MW) solar energy project in Bedford, Pennsylvania.

Once completed, the project will supply a portion of the power needed by Enbridge’s Bedford gas compressor station.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Bedford, PA
- Capacity: 6.8 megawatts (MW)
- Expected in-service date: Q4 2022
- Equivalent homes served: 860
Cass Lake Solar

Cass Lake Solar is an 8.8-megawatt (MW) solar energy project in Cass Lake, Minnesota.

Once completed, the project will supply a portion of the power needed by Enbridge’s liquids pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Cass Lake, MN
- Capacity: 8.8 megawatts (MW)
- Expected in-service date: Q4 2023
- Equivalent homes served: 2,285

Deer River Solar

Deer River Solar is a 15-megawatt (MW) solar energy project in Deer River, Minnesota.

Once completed, the project will supply a portion of the power needed by Enbridge’s liquids pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Deer River, MN
- Capacity: 15 megawatts (MW)
- Expected in-service date: Q4 2023
- Equivalent homes served: 4,162
Flanagan Solar

Flanagan Solar is a 10-megawatt (MW) solar energy project in Pontiac, Illinois.

Once completed, the project will supply a portion of the power needed by Enbridge’s Flanagan South liquid pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Pontiac, IL
- Capacity: 10 megawatts (MW)
- Expected in-service date: Q4 2022
- Equivalent homes served: 2,131

Floodwood Solar

Floodwood Solar is an 11-megawatt (MW) solar energy project in Floodwood, Minnesota.

Once completed, the project will supply a portion of the power needed by Enbridge’s liquids pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Floodwood, MN
- Capacity: 11 megawatts (MW)
- Expected in-service date: Q4 2023
- Equivalent homes served: 2,962
Portage Solar

Portage Solar is an 11.8-megawatt (MW) solar energy project in Portage, Wisconsin.

Once completed, the project will supply a portion of the power needed by Enbridge’s Lakehead liquid pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Portage, WI
- Capacity: 11.8 megawatts (MW)
- Expected in-service date: Q4 2022
- Equivalent homes served: 3,277

Tompkinsville Solar

Tompkinsville Solar is an 9.6-megawatt (MW) solar energy project in Tompkinsville, Kentucky.

Once completed, the project will supply a portion of the power needed by Enbridge’s Tompkinsville gas compressor station.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Tompkinsville, KY
- Capacity: 9.6 megawatts (MW)
- Expected in-service date: Q3 2022
- Equivalent homes served: 2,293
Vesper Solar

Vesper Solar is a 10.8-megawatt (MW) solar energy project in Wisconsin Rapids, Wisconsin.

Once completed, the project will supply a portion of the power needed by Enbridge’s Lakehead liquids pipelines system.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Wisconsin Rapids, WI
- Capacity: 10.8 megawatts (MW)
- Expected in-service date: Q4 2022
- Equivalent homes served: 2,904

Wheelersburg Solar

Wheelersburg Solar is a 5.3-megawatt (MW) solar energy project in Wheelersburg, Ohio.

Once completed, the project will supply a portion of the power needed by Enbridge’s Wheelersburg gas compressor station.

- Nature of asset: Solar energy project
- Status: Under construction
- Location: Wheelersburg, OH
- Capacity: 5.3 megawatts (MW)
- Expected in-service date: Q3 2022
- Equivalent homes served: 815