Enbridge’s Energy Infrastructure Projects

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Crude Oil and Liquids Pipelines

Gray Oak Pipeline

The 850-mile Gray Oak crude oil pipeline, being built and operated by Phillips 66, will span from the Permian Basin in West Texas and New Mexico, and the Eagle Ford production region in South Texas, to the U.S. Gulf Coast, and connect to market centers in Corpus Christi and Freeport, TX.

Expected initial capacity for Gray Oak will be 900,000 barrels per day.

Enbridge announced in December 2018 that it would spend about US$600 million to purchase a 22.75% ownership interest in Gray Oak, which is expected to enter service in late 2019.

- Type: Crude oil pipeline
- Status: Under review
- Length: 850 miles
- Expected capacity: 900,000 bpd
- Expected to transport: Light crude
- Expected in-service date: 4Q 2019
- Ownership: Enbridge (22.75%). Other partners: Phillips 66; Marathon Petroleum Corporation.
- Operator: Phillips 66
- Project website: https://grayoakpipeline.com/
Line 3 Replacement Program

The proposed Line 3 Replacement Program involves replacement of all remaining segments of our Line 3 pipeline between Hardisty, AB and Superior, WI, along with construction of associated facilities. The project involves replacing existing 34-inch-diameter pipe with 36-inch-diameter pipe from Hardisty to Gretna, MB, and Neche, ND, to Superior. Segments of Line 3 from the U.S.-Canada international border to Neche, and near the Minnesota-Wisconsin border to Enbridge’s Superior Terminal, will be replaced with 34-inch-diameter pipeline, and are under separate segment replacement projects.

- Type: Crude oil and liquids pipeline
- Status: Complete (Canada and Wisconsin); pre-construction (Minnesota)
- Length: 1,031 miles (1,660 km)
- Expected in-service date: December 2019 (Canada); 2H 2020 (U.S.)
- Expected initial capacity: 390,000 barrels per day
- Expected to transport: Light, medium and heavy crude
- Estimated capital cost: C$5.3 billion in Canada, US$2.9 billion in the United States
Natural Gas Transmission Pipelines

Atlantic Bridge


Our goal is to place all the Atlantic Bridge facilities into service as soon as possible. On Oct. 27, 2017, the Federal Energy Regulatory Commission (FERC) granted Algonquin Gas Transmission’s request to place into service the Atlantic Bridge Connecticut facilities to provide 40,000 dekatherms per day of incremental firm transportation service.

- Type: Natural gas pipeline
- Status: Under review
- Peak day capacity: 132,700 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- Initial in-service date: November 2017
- Full in-service target date: 2020
- Ownership: Algonquin Gas Transmission, LLC; Maritimes & Northeast Pipeline, LLC (U.S.); Maritimes & Northeast Pipeline Limited Partnership (Canada)
- FERC docket number: CP16-9-000
Greater Philadelphia Expansion Project

Limited infrastructure capabilities hinder the ability to meet Philadelphia’s energy demands, despite the abundance of domestic natural gas in the nearby shale formations.

To meet these challenges, Enbridge Inc. is proposing the Greater Philadelphia Expansion Project, which will create a scalable platform to address the region’s natural gas needs by upgrading and expanding its existing infrastructure to provide more natural gas to the area.

- Type: Natural gas pipeline
- Status: Under review
- Peak day capacity: Scalable; up to 475,000 dekatherms per day (Dth/d) is possible
- Expected to transport: Natural gas
- Expected in-service date: 2021
PennEast Pipeline Project

The PennEast Pipeline Project will provide Enbridge Inc. with a strategic opportunity to leverage existing assets by directly connecting northeast Pennsylvania Marcellus shale production to the Texas Eastern Transmission and Algonquin Gas Transmission systems, and will allow Enbridge Inc. to further strengthen its relationship with some of its biggest customers.

The PennEast Pipeline will reliably meet growing energy demand in New Jersey and Pennsylvania while providing environmental and economic benefits to the region, and will transport enough clean, affordable and abundant natural gas to serve 4.7 million homes.

- Type: Natural gas pipeline
- Status: Under review
- Length: 118 miles
- Peak day capacity: 1.1 billion cubic feet per day (Bcf/d)
- Expected to transport: Natural gas
- Expected in-service date: 2020
- Ownership: Enbridge Inc. (20%). Other partners include: Southern Company Gas; NJR Pipeline Company, a subsidiary of New Jersey Resources; South Jersey Industries; and UGI Energy Services (UGIES), a subsidiary of UGI Corporation.
- Operator: UGI Energy Services
- FERC docket number: CP15-558-000
- Project website: Click here
South Texas Expansion Project

The South Texas Expansion Project (STEP) is a mainline reversal and expansion project in South Texas, an area with increasing load from the market in Mexico. On February 15, 2018, the Federal Energy Regulatory Commission (FERC) issued its order issuing certificates and approving abandonment,

- Type: Natural gas pipeline
- Status: Under review
- Peak day capacity: 400,000 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- Expected in-service date: 4Q 2018
- Ownership: Spectra Energy Partners, LP (100%)
- FERC docket number: CP15-499-000
**Spruce Ridge Program**

Enbridge is planning to add two new sections of pipeline and additional compression to existing facilities on its natural gas transmission system in northeastern British Columbia.

The new sections of pipe—known as loops—will be constructed as separate segments that largely parallel the existing pipeline. The two new pipeline loops—Aitken Creek and Chetwynd—and accompanying compression upgrades will increase the transportation capacity of the system to accommodate customer demand in a safe and reliable way.

Collectively, these projects will increase transportation capacity by up to 402 million cubic feet per day (MMcf/d).

The Spruce Ridge Expansion Program received regulatory approval on December 10, 2018. Enbridge is currently evaluating when to begin construction.

- Type: Natural gas pipeline
- Status: NEB approved
- Peak day capacity: Up to 402 MMcf/d
- Expected to transport: Natural gas
- Expected in-service date: 2020
- Ownership: Enbridge Inc. (100%)
- Operator: Enbridge Inc.
Stratton Ridge Project

The Stratton Ridge Project provides shippers with firm transportation service to deliver new incremental production from the growing shale plays. Traversing Mississippi, Louisiana and Texas, it includes receipts from M1, ETX and STX and a delivery to Stratton Ridge in Brazoria County, Texas.

- Type: Natural gas pipeline
- Status: Under review
- Peak day capacity: Up to 400,000 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- Expected in-service date: First half 2019
- Ownership: Spectra Energy Partners, LP (100%)
Texas-Louisiana Markets Project

The Texas-Louisiana Markets Project will serve increased electric and industrial demand along the U.S. Gulf Coast. This project is designed to transport up to 157,500 dekatherms of natural gas per day through reversal of throughput on the 30-inch diameter Texas Eastern pipeline from Opelousas, Louisiana to Vidor, Texas.

The project also involves replacement of two impellers and installation of two gas cooling bays at the existing Gillis compressor station.

- Type: Natural gas pipeline
- Status: Under review
- Peak day capacity: Up to 157,500 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- Expected in-service date: 2019
T-South Reliability and Expansion Program

Enbridge is proposing upgrades and a number of reliability enhancements on the southern portion of its natural gas transmission system (T-South) which stretches from south of Chetwynd, B.C. to the southernmost point at the Canada/U.S. border at Huntingdon/Sumas.

This work, known as the T-South Reliability and Expansion Program, will involve: replacing old compressor station units with new, more reliable and efficient units; adding an additional compressor station unit; and undertaking smaller upgrades and operational maintenance at various facilities along the system.

These upgrades are being done as part of operating a safe natural gas pipeline system, and to accommodate an incremental 190 MMcf/d of firm capacity.

- **Type:** Natural gas infrastructure
- **Status:** Proposed
- **Peak day capacity:** Up to 190 MMcf/d
- **Expected in-service date:** 2021
- **Ownership:** Enbridge Inc. (100%)
- **Operator:** Enbridge Inc.
**Tupper West Expansion Project**

To meet increased natural gas demand, Enbridge is proposing to expand its Tupper West Plant in northeastern British Columbia.

In early 2016, Enbridge acquired two gas plants and associated sales pipelines approximately 22 kilometers (km) southwest of Dawson Creek, BC. The plants, Tupper Main and Tupper West, were built in 2008 and 2011, respectively, with 110 and 210 MMscfd licensed gas processing between the two facilities.

To meet increased demand, Enbridge is proposing to expand the Tupper West Plant, known as TPW1. The Tupper West Expansion, known as TPW2, is a 198 MMscfd expansion immediately to the south of the existing plant. The Project will service new gas supply from producers and will be shipped through pipelines to market.

In July 2018, Enbridge proposed to sell $4.3 billion of Canadian natural gas gathering and processing assets to Brookfield Infrastructure and its Partners (BIP). On October 1, Enbridge transferred provincially regulated assets to NorthRiver Midstream Inc. and the federally regulated assets will be transferred sometime in 2019.

As part of the sale, the Tupper West Expansion Project is being transitioned to NorthRiver Midstream Inc., a wholly owned subsidiary of Brookfield. Enbridge will continue ongoing engagement to support the project until it is complete.

- **Type:** Natural gas infrastructure
- **Status:** Proposed
- **Expected in-service date:** Fall 2020
- **Ownership:** Enbridge G and P Limited Partnership
- **Operator:** Enbridge G and P Limited Partnership
Natural Gas Distribution

Chatham-Kent Rural Pipeline Expansion Project

There is a growing demand for natural gas in rural Chatham-Kent, Ontario particularly in the fast-growing greenhouse sector. As a result, Enbridge Gas is expanding our existing natural gas system in the area.

The project has received Ontario Energy Board approval and is currently under construction, consisting of two sections both within the Municipality of Chatham-Kent. Construction is expected to be complete by the end of 2019.

Kingsville Transmission Reinforcement

The greenhouse market in the Leamington and Kingsville areas is growing fast, and there is also an increased demand for natural gas from residential, commercial and industrial customers in Windsor-Essex, Chatham-Kent and surrounding areas.

To support this growth, Enbridge Gas is constructing a 20-inch diameter, 19-km natural gas pipeline from the Town of Lakeshore to the Town of Kingsville.

The project was approved by the Ontario Energy Board (OEB) in September 2018. Construction began in mid-2019 and will be complete by the end of 2019.

Learn more at the Enbridge Gas website.
Kirkwall Hamilton Project

Natural gas demand has increased across Ontario, Quebec, eastern Canada and the northeast United States. To meet that demand, Enbridge Gas is proposing to construct a new 48-inch diameter natural gas pipeline located within the City of Hamilton (Flamborough), generally paralleling its existing Dawn-Parkway natural gas transmission system.

The proposed project is subject to Ontario Energy Board approval. If approved, construction could begin as early as spring 2021 and be complete by the end of 2021.

Owen Sound Reinforcement

To meet the growing demand for safe, affordable and reliable natural gas, Enbridge Gas is proposing to build up to 36 kilometres of 12-inch natural gas pipeline between the Municipality of West Grey and the Township of Chatsworth, Ontario.

The project is subject to Ontario Energy Board (OEB) approval and is currently in the planning stages. The project will support economic growth in the region from Waterloo to Wiarton.

Learn more at the Enbridge Gas website.
Sarnia Industrial Pipeline Reinforcement Project

Demand for natural gas from industries in the Sarnia, Ontario area is increasing.

As a result, Enbridge Gas is proposing to construct a new natural gas pipeline between our existing Dow valve site and Bluewater interconnect transmission stations in the Township of St. Clair, Ontario. The proposed pipeline will be 20 inches in diameter, and approximately 1.2 km in length.

The project is subject to approval by the Ontario Energy Board. If approved by the OEB, construction of the proposed project is planned to begin as early as spring 2021, with an in-service date of fall 2021.

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 proposing to replace the Windsor Line natural gas pipeline. Our proposed 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.

Our proposed project is subject to Ontario Energy Board approval. If approved, construction could begin as early as spring 2020 and be complete by the end of 2020.
Offshore Projects

Big Foot Oil Pipeline

The Big Foot Oil Pipeline project consists of a 20-inch-diameter offshore crude oil pipeline in the Gulf of Mexico, traversing 40 miles (64 km) from the Big Foot ultra-deep water development.

- Type: Offshore crude oil pipeline
- Status: Under construction
- Length: 40 miles (64 km)
- Expected operational date: Upon startup of Big Foot development
- Expected initial capacity: 100,000 barrels per day
- Expected to transport: Crude oil
- Estimated capital cost: $200 million
Texas COLT

Texas COLT, a joint venture between Enbridge Inc. and Oiltanking Partners, proposes to construct, own and operate a deepwater export terminal in the Gulf of Mexico, off the coast of Freeport, TX, to export domestically produced crude oil.

The proposed project includes an offshore platform and two offshore loading single point mooring buoys capable of fully loading a two-million-barrel Very Large Crude Carrier (VLCC) in about 24 hours.

These offshore facilities will be connected by a 28-mile-long, 42-inch-diameter pipeline to an onshore tank farm that will have up to 15 million barrels of storage capacity.

The onshore storage terminal will include a pump station consisting of twelve 7,000-horsepower pumps. The project would also include four onshore crude oil pipelines and associated facilities to connect to domestic crude oil supply.

Texas COLT submitted an application to the U.S. Maritime Administration (MARAD) in January 2019, and plans for the offshore terminal to be in service by 2022.

- Type: Offshore crude oil loading terminal
- Status: Under review
- Pipeline length: 27.8 miles
- Port loading capacity: 85,000 barrels per hour
- Product exported: Crude oil (various grades)
- Expected in-service date: 2022
- Ownership: Enbridge Inc. and Oiltanking Partners
- Operator: Texas COLT
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 power transmission project in northern Ontario would consist of a new, approximately 280-mile (450-km), double-circuit, 230-kilovolt (kV) transmission line. The proposed project would generally parallel an existing double-circuit, 230-kV transmission line corridor that connects the Wawa Transformer Station to the Lakehead Transformer Station near Thunder Bay, ON. The project is being advanced by NextBridge Infrastructure, a partnership between affiliates of Enbridge, NextEra Energy Canada and OMERS Infrastructure.

- Type: Power transmission line
- Status: Planned
- Length: 280 miles (450 km)
- Capacity: 230 kV
Albatros Offshore Wind Project

In June 2017, Enbridge exercised its option to partner with Germany’s EnBW on an expansion of the previously announced Hohe See offshore wind farm in the North Sea.

The Albatros wind project, to be located in the vicinity of the 497-megawatt (MW) Hohe See project, will have a capacity of 112 MW and is expected to enter service alongside Hohe See in 2019.

- Type: Wind energy project
- Status: In development
- Location: North Sea, about 100 km off German coast
- Expected in-service date: 2019
- Expected capacity: 112 MW
- Expected number of turbines: 16
- Expected equivalent homes served: 130,360

Hohe See Offshore Wind Project

The 497-megawatt (MW) Hohe See Offshore Wind project, expected to enter service in late 2019, is a late-design-stage project located in the North Sea, 98 kilometres off the coast of Germany.

Enbridge announced on Feb. 17, 2017 that it had acquired an effective 50-percent ownership in the project, with German utility EnBW retaining the remaining interest. Enbridge’s total investment in the project will be C$1.7 billion (EUR1.07 billion).

- Type: Wind energy project
- Status: In development
- Location: North Sea, 98 km off German coast
- Expected in-service date: Late 2019
- Expected capacity: 497 MW
- Expected number of turbines: 71
- Expected equivalent homes served: 565,602