



Enbridge's Energy Infrastructure Projects

Last Updated: Dec. 12, 2018

Table of Contents

Crude Oil and Liquids Pipelines	3
Natural Gas Transmission Pipelines	4
Natural Gas Distribution	14
Offshore Pipelines.....	18
Power Generation	19
Power Transmission.....	20
Wind Energy	21
Substations	22

Crude Oil and Liquids Pipelines

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: Planned
- Length: 1,031 miles (1,660 km)
- Expected in-service date: 2019
- Expected 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\$2.9 billion in the United States



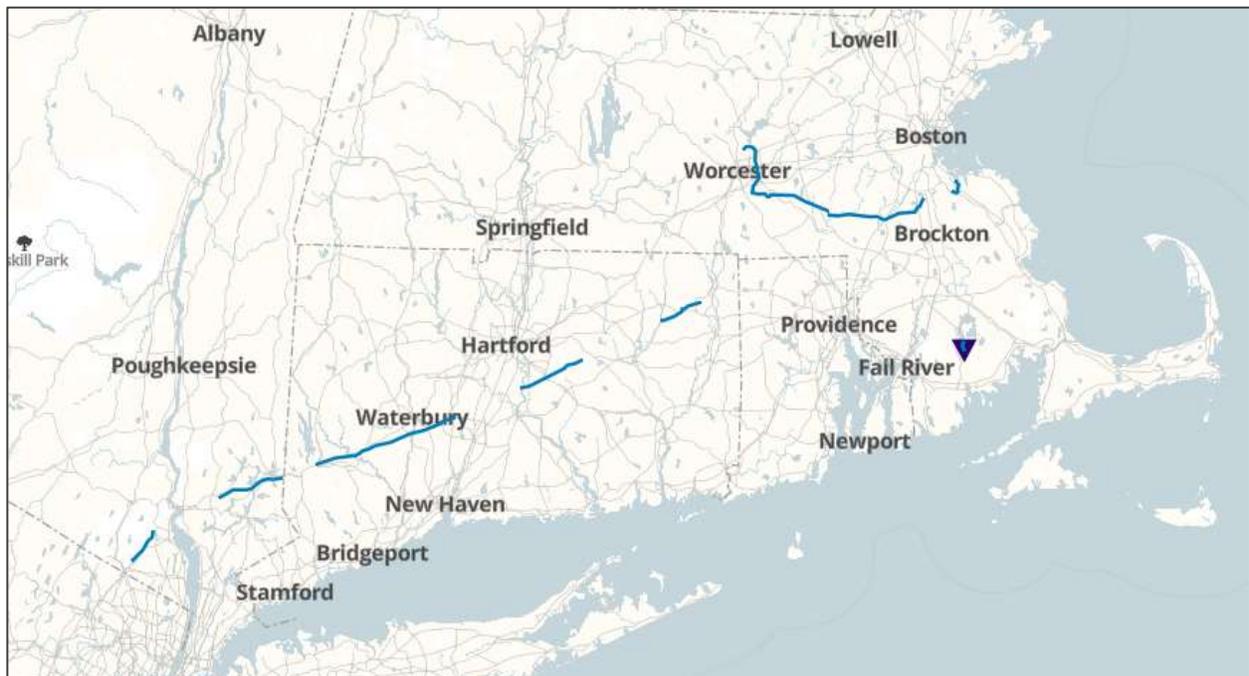
Natural Gas Transmission Pipelines

Access Northeast

The Access Northeast Project will address the “last mile” of pipeline capacity necessary to meet the growing natural gas transportation needs of electric generation companies throughout New England.

Access Northeast will provide critically needed natural gas pipeline capacity and market area storage to ensure the reliability of New England’s power generation fleet during peak demand periods. The Access Northeast Project proposes to upgrade the existing Algonquin system and add regional liquefied natural gas (LNG) storage assets in New England to deliver peak day deliveries, on the coldest winter day, up to 925,000 dekatherms per day (Dth/d) of natural gas, enough for approximately 5,000 MW of electric generation

- Type: Natural gas pipeline, LNG storage assets
- Status: Under review
- Peak day capacity: Up to 925,000 dekatherms per day (Dth/d)
- Expected to transport: Natural gas
- Expected in-service date: 2020+
- Project developers: Enbridge Inc., Eversource Energy and National Grid
- FERC docket number: PF16-1-000
- Project website: [Click here](#)

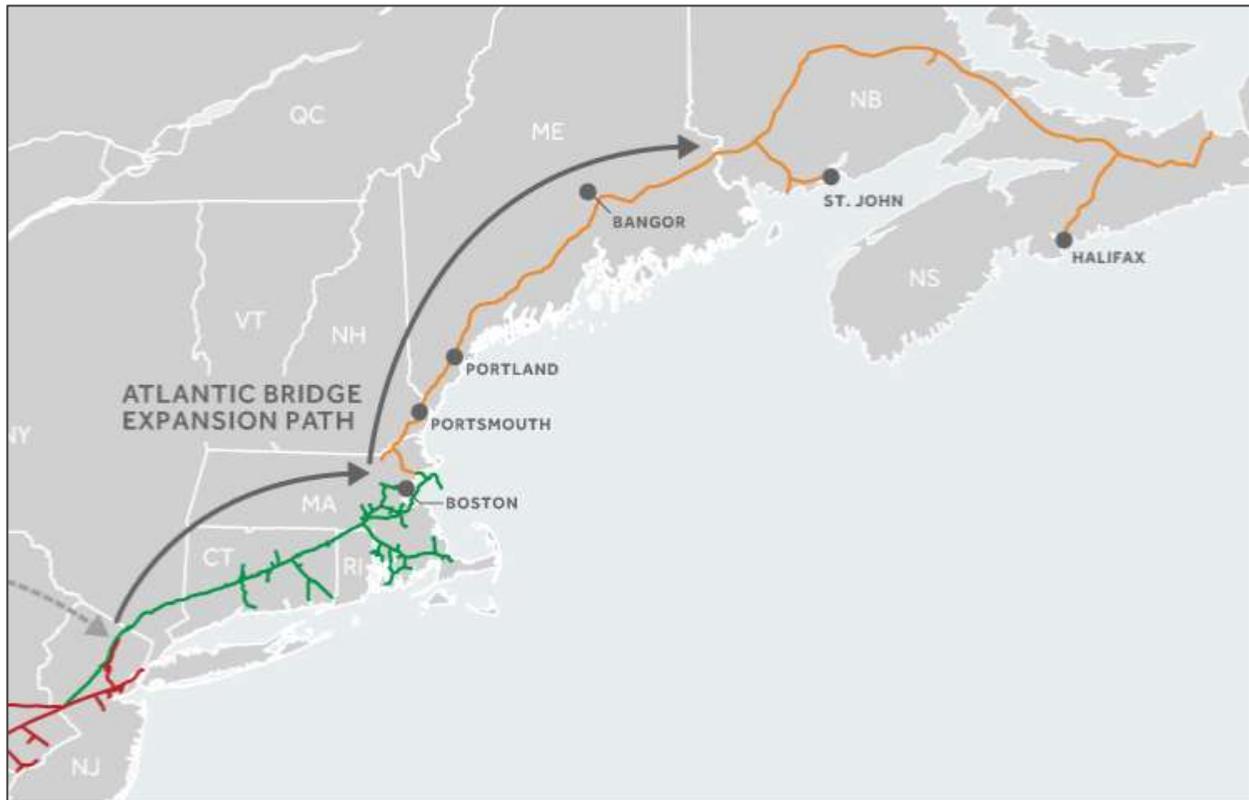


Atlantic Bridge

The Atlantic Bridge Project, a proposed expansion of the Algonquin Gas Transmission and Maritimes & Northeast Pipeline systems, will connect abundant North American natural gas supplies with markets in the New England states and the Maritime provinces. The project includes construction of pipeline in New York and Connecticut, addition or replacement of compressor units in Connecticut, construction of a new meter station in Connecticut, and modifications to existing meter stations in New York, Connecticut, Massachusetts and Maine.

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
- Ownership: Algonquin Gas Transmission, LLC; Maritimes & Northeast Pipeline, LLC (U.S.); Maritimes & Northeast Pipeline Limited Partnership (Canada)
- FERC docket number: CP16-9-000

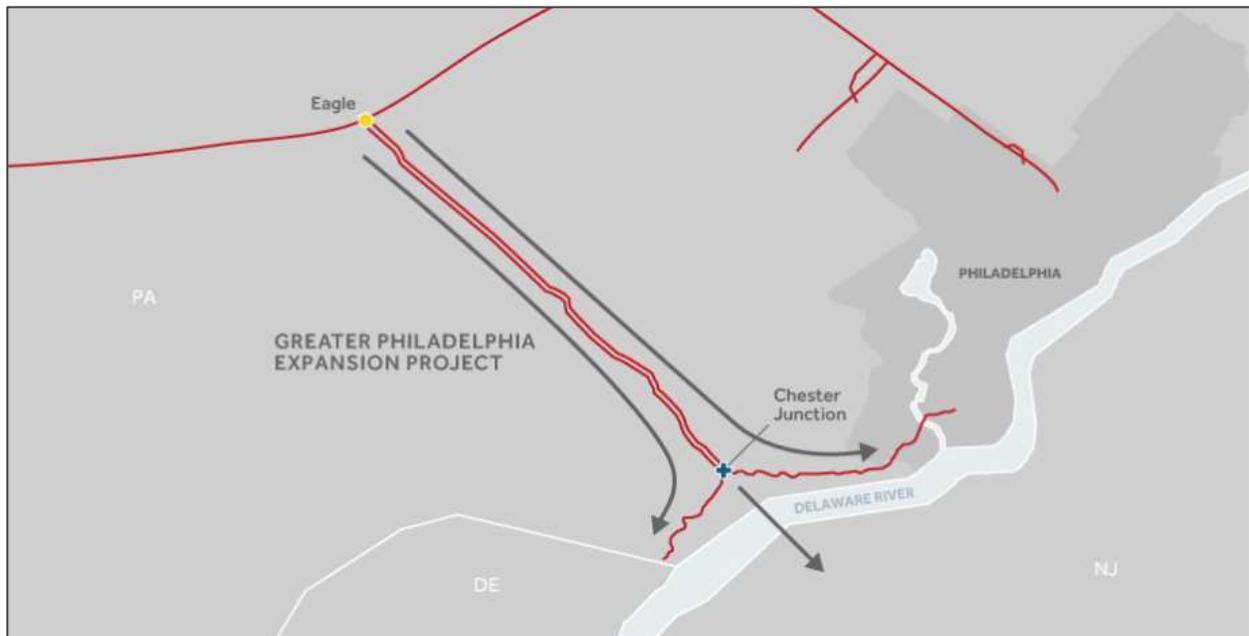


Greater Philadelphia Expansion Project

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

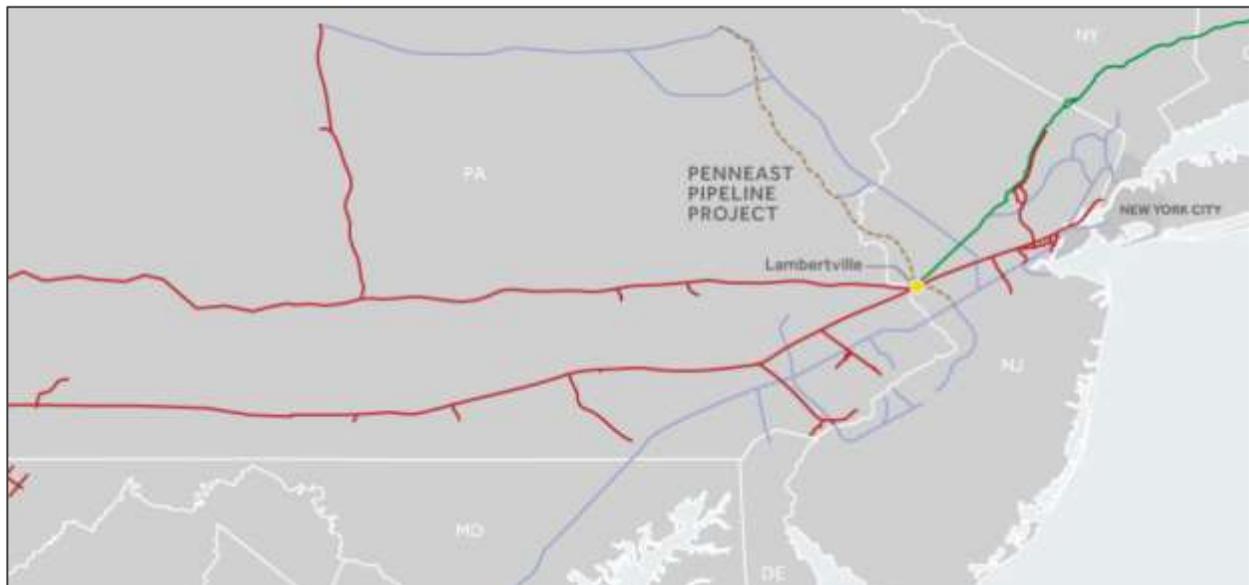


PennEast Pipeline Project

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.

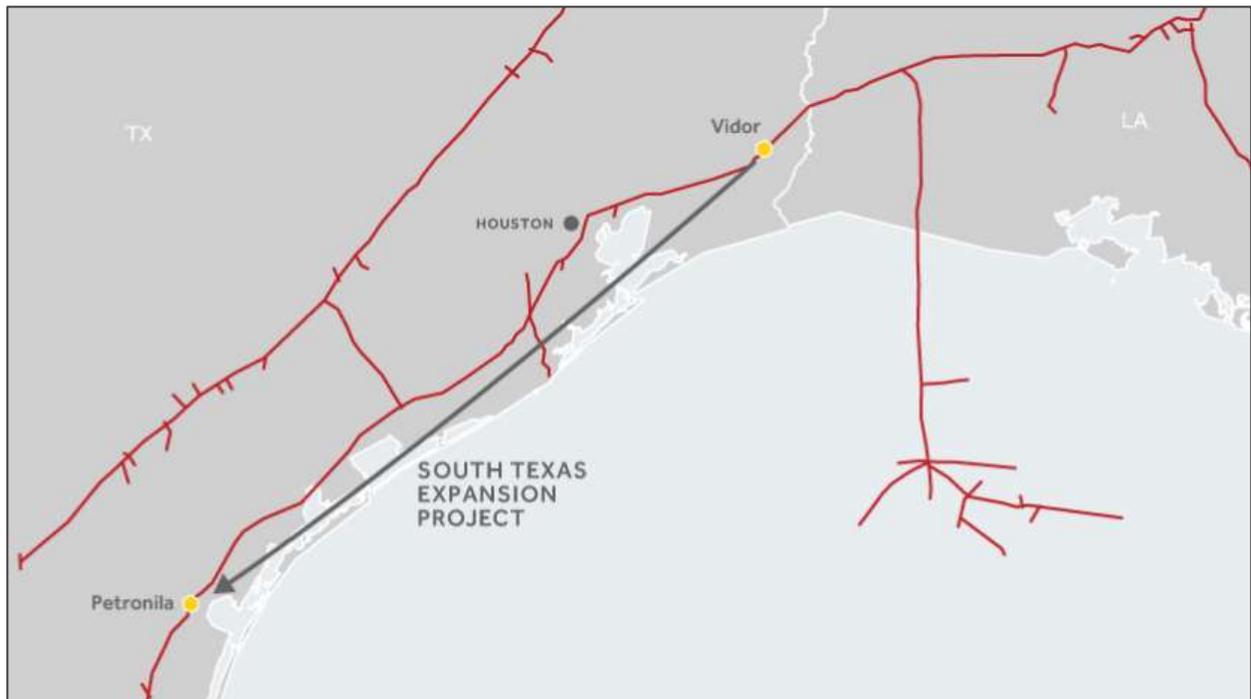
- Type: Natural gas pipeline
- Status: Under review
- Length: 118 miles
- Peak day capacity: 1 billion cubic feet per day (Bcf/d)
- Expected to transport: Natural gas
- Expected in-service date: 2019
- Ownership: Spectra Energy Partners, LP (10%). Other partners include: AGL Resources; NJR Pipeline Company, a subsidiary of New Jersey Resources; PSEG Power LLC; 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 proposing two projects to add two new sections of pipeline and additional compression to existing facilities on its natural gas transmission system in northeastern British Columbia.

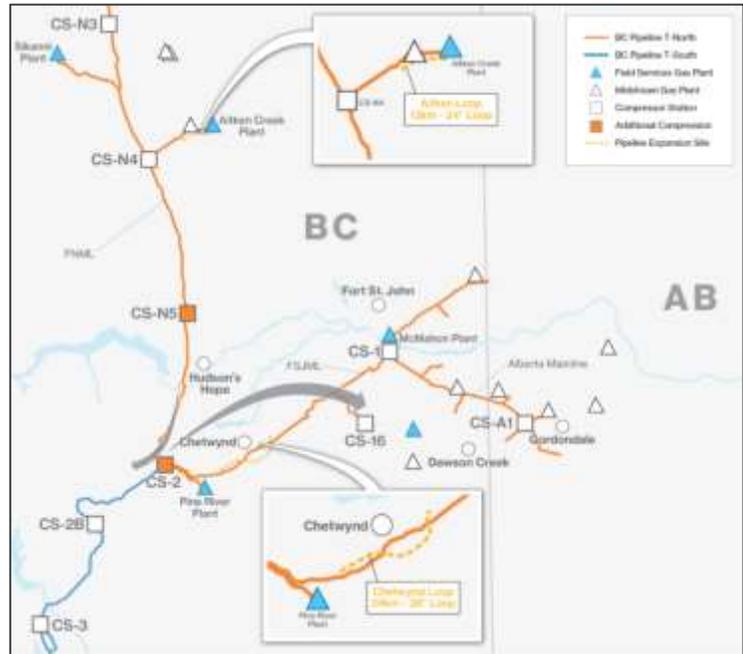
The majority of these two new projects—the Aitken Creek Looping Project and the Spruce Ridge Expansion Project—would parallel the existing pipeline system.

The Aitken Creek Looping Project would consist of 13 kilometers (8 miles) of 24-inch pipe.

The Spruce Ridge Expansion Project would consist of 25 km (15.5 miles) of 36-inch pipe as well as the addition of new compressor units at two existing compressor stations.

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

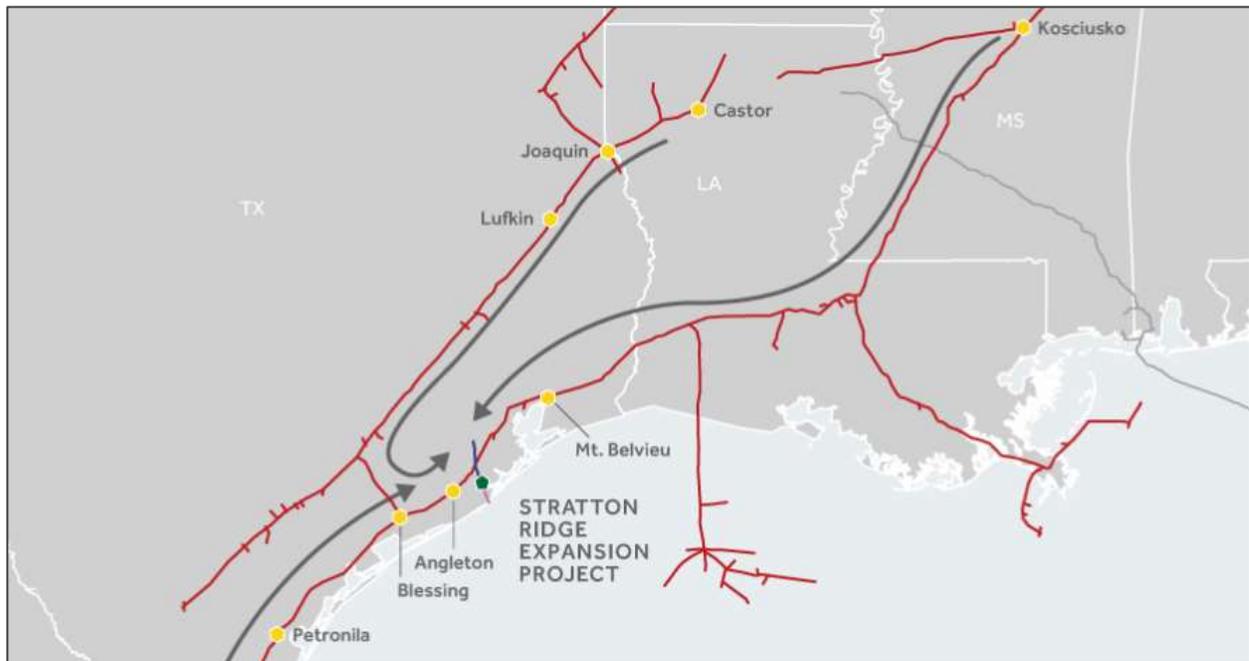
- Type: Natural gas pipeline
- Status: In development
- Peak day capacity: Up to 402 MMcf/d
- Expected to transport: Natural gas
- Expected in-service date: 2020
- Ownership: Enbridge Inc. (100%)
- Operator: Enbridge Inc.



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: Late 2020/early 2021
- Ownership: Enbridge Inc. (100%)
- Operator: Enbridge Inc.



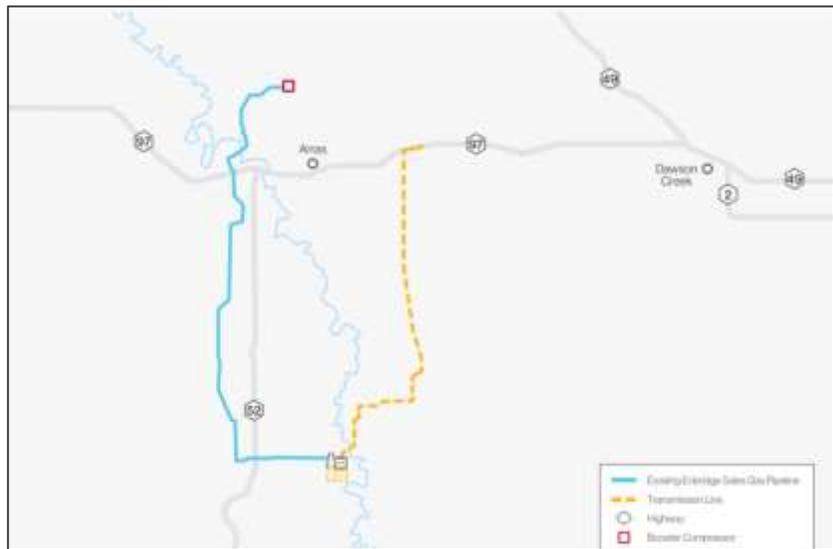
Tupper West Expansion Project

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

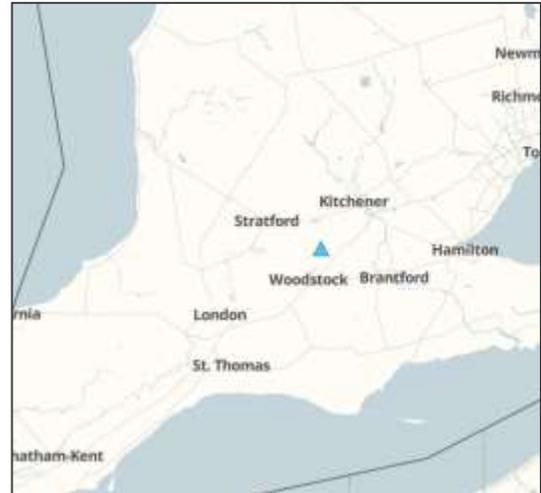
Bright Compressor

Union Gas has added an additional compressor facility on the site of its existing Bright Compressor Station in the Ontario township of Blandford-Blenheim.

This project serves an increased need for compression along the Union Gas Dawn-Parkway natural gas transmission system, which runs between Dresden and Mississauga, to serve a growing demand for clean, affordable natural gas.

The project received regulatory approval from the Ontario Energy Board (OEB) on Dec. 22, 2015. Construction was completed in November 2017 and the compressor is now in-service. Clean-up activities will continue into 2018.

[Learn more at the Union Gas website.](#)

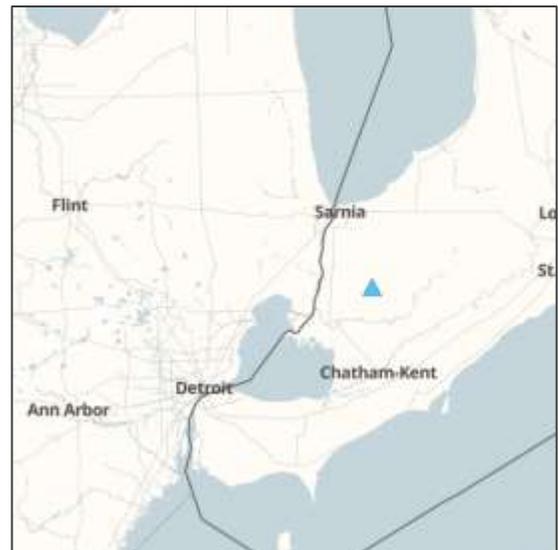


Dawn Compressor

To serve an increased need for compression along the Union Gas Dawn-Parkway natural gas transmission system, and serve a growing demand for clean, affordable natural gas, Union Gas has added an additional compressor facility at the site of its existing Dawn Compressor Station, located in the Township of Dawn-Euphemia, Ontario.

The Ontario Energy Board (OEB) gave regulatory approval on Dec. 22, 2015, construction finished in November 2017 and the compressor is now in-service. Clean-up activities will continue into 2018.

[Learn more at the Union Gas website.](#)



Greater Sudbury Lateral Replacement

Union Gas has received Ontario Energy Board (OEB) approval to replace portions of the Greater Sudbury Lateral Pipeline System to ensure the continued reliable delivery of natural gas and serve an increased demand in Greater Sudbury and surrounding area.

Construction began in April 2018 and will be complete by the end of 2018.

[Learn more at the Union Gas website.](#)



Kingsville Transmission Reinforcement

The greenhouse market in the Leamington and Kingsville, Ontario areas is growing fast, and there is an increased demand for natural gas from residential, commercial and industrial customers in the region as a whole.

With those positive developments in mind, Union Gas is proposing to construct up to a 20-inch natural gas pipeline between the Town of Lakeshore and the Town of Kingsville. The proposed pipeline will be approximately 19 kilometres in length.

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

[Learn more at the Union Gas website.](#)



Lobo Compressor

Union Gas has added 2 additional compressor facilities on the site of its existing Lobo Compressor Station in the Ontario township of Middlesex Centre.

The Lobo Compressor Station Expansion Project serves an increased need for compression along the Dawn-Parkway natural gas transmission system to meet the growing demand for clean, affordable natural gas via the addition of 2 compressors.

The first compressor facility was completed in 2016 and the second in 2017 and both are now in-service. Clean-up activities will continue into 2018.

[Learn more at the Union Gas website.](#)



Owen Sound Reinforcement

To meet the growing demand for safe, affordable and reliable natural gas, Union 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. If approved, construction would begin in mid-2019 and be complete by the end of 2019, and will support economic growth in the region from Waterloo to Warton.

[Learn more at the Union Gas website.](#)



Panhandle Reinforcement

Union Gas has increased the capacity of our Panhandle natural gas transmission system which serves residential and business customers in Windsor-Essex, Chatham-Kent and surrounding areas, including the burgeoning greenhouse market in the Leamington/Kingsville, Ontario area.

This project was approved by the OEB on Feb. 23, 2017, construction began May 23, and in November 2017 it went in-service. Clean-up work will continue through 2018.

[Learn more at the Union Gas website.](#)



Offshore Pipelines

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



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

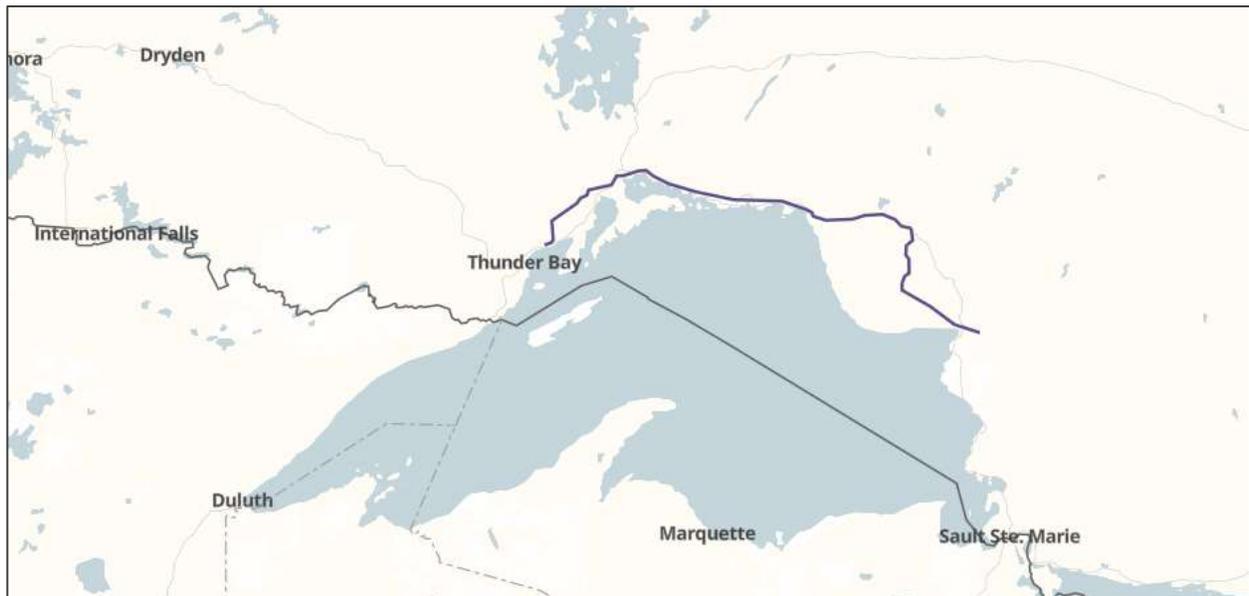


Power Transmission

East-West Tie (EWT) Transmission Project

The East-West Tie power transmission project in northern Ontario would consist of a new, approximately 278-mile (447-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 Borealis Infrastructure.

- Type: Power transmission line
- Status: In development
- Length: 278 miles (447 km)
- Capacity: 230 kV



Wind Energy

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

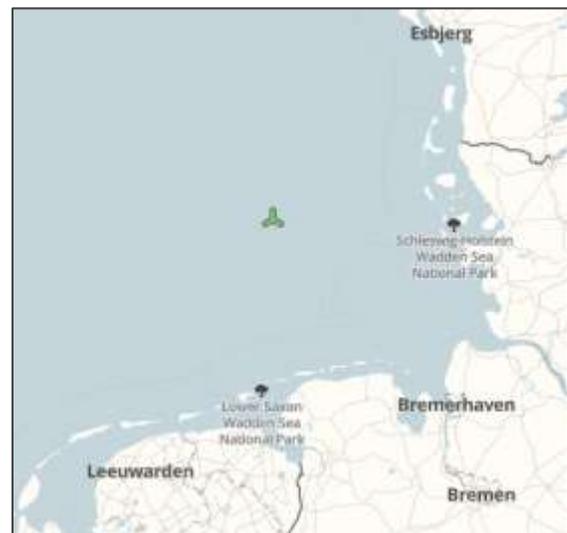


Hohe See Offshore Wind Project

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



Substations

Battle Sands Substation Project at Hardisty Terminal

The substation will be located entirely within Enbridge's existing Hardisty terminal (NE 19-42-9-W4M) located just southeast of Hardisty, Alta. This proposed substation would support Enbridge's proposed Line 3 Replacement Program and will also serve Enbridge's Hardisty storage and pump station facility.

To learn more about the Line 3 Replacement Program, [please click here](#).

AltaLink Management Ltd. (AltaLink) will be responsible for the development of approximately 1 kilometre of transmission line which will tie in to the substation.

