KINDER MORGAN

Kinder Morgan, headquartered in Houston, Texas, is the largest midstream and the third largest energy company in North America with more than 128,700 kilometres (80,000 miles) of pipelines and 180 terminals. Its pipelines transport natural gas, gasoline, crude oil, CO₂ and other products, and its terminals store petroleum products and chemicals and handle such products as ethanol, coal, petroleum coke and steel.

In Canada, Kinder Morgan operates a number of pipeline systems and terminal facilities including the Trans Mountain pipeline, the Cochin pipeline*, the Puget Sound and the Jet Fuel pipelines, the Westridge marine terminal, Vancouver Wharves in British Columbia and the North Forty terminal in Edmonton, Alberta.

PIPELINE BUSINESS IN CANADA

Subsidiary Kinder Morgan Canada (KMC), headquartered in Calgary, Alberta, transports approximately 20 per cent of all liquid petroleum products produced in Alberta to markets in western North America through its 1,296-km (805-mile) network of pipelines.

KMC is committed to ensuring the safety of its pipelines and the protection of the environment and communities where it operates.

KMC is strongly positioned to meet west coast market growth through its pipeline and terminal network.

KMC operates:

- Trans Mountain pipeline system
- Jet Fuel pipeline system (Greater Vancouver Area)
- Puget Sound pipeline system
- Cochin pipeline system*

*The Cochin system is operated by Kinder Morgan’s Products Pipelines group in Houston, Texas. However, specific Canadian operational requirements are handled by Kinder Morgan Canada.
Trans Mountain Pipeline System

In operation since 1953, the Trans Mountain pipeline (TMPL) is the only pipeline system in North America that transports both crude oil and refined petroleum products to the west coast. TMPL moves products from Edmonton, Alberta, to marketing terminals and refineries in the central British Columbia region, the Greater Vancouver area and Puget Sound area in Washington State, as well as to other markets such as California, the U.S. Gulf Coast and overseas through the Westridge marine terminal located in Burnaby, British Columbia. Only crude oil and condensates are shipped into Washington State.

TMPL System Facts
- Length: 1,150 km (715 miles)
- Diameter: 150 km (93.4 miles) of 36-inch pipe, 170 km (105 miles) of 30-inch pipe and 827 km (514 miles) of 24-inch pipe
- Capacity: 48,000 m³/d (300,000 bpd) (approx.)
- Transit time: six days to Kamloops; nine days to Burnaby (approx.)
- Pump stations: 24
- Regulator: National Energy Board (NEB)

For 60 years TMPL has safely and efficiently moved petroleum products for its customers providing the only direct link from Alberta’s oil sands to the West Coast. In October 2013, TMPL will mark the 60th anniversary of the first shipment of oil delivered from Edmonton, Alberta to Burnaby, BC.

The construction of the pipeline through steep mountainous terrain and harsh weather conditions of the Rockies was considered an important Canadian industrial achievement and earned TMPL the reputation of being one of the most challenging projects undertaken in pipeline history.

“Those who have watched its builders in the conquest of nature, space, time and numerous other obstacles consider Trans Mountain a sound example of industrial vision, engineering skill and business resourcefulness.”


Products in the Pipeline

TMPL transports crude oil and refined products together in the same line. This process, known as batching, means that a series of products can follow one another through the pipeline in a batch train. A typical batch train is made up of a variety of materials being transported for different shippers. The mixing of products placed next to each other in the pipeline — or product interface — is kept to a minimum by shipping the products in a specific sequence, and any products that interface are re-refined.
Edmonton Terminal

TMPL originates at the Edmonton terminal, located in an industrial area of Sherwood Park, Alberta. With 20 incoming feeder lines transporting products from oil producing areas throughout Alberta, the terminal is an important petroleum storage hub with unparalleled upstream and downstream connectivity. It provides temporary storage for crude oil and petroleum products that are shipped through the Trans Mountain pipeline. It currently contains 19 storage tanks with an overall volume of approximately 417,000 m$^3$ (2.6 million bbl). Construction is underway to expand the terminal by adding 14 tanks and related facility infrastructure by the end of 2014. This will bring the terminal's total storage capacity to approximately 1.18 million m$^3$ (7.42 million bbl).

The pipeline control centre located at the Edmonton terminal remotely monitors all aspects of pipeline operations with a Supervisory Control and Data Acquisition system (SCADA).

Kamloops Terminal

Refined products from Edmonton are routed to Kamloops for local distribution. Kamloops is also a receiving terminal for crude oil from northeastern British Columbia that are bound for the west coast. The site contains two storage tanks with an overall volume of 23,000 m$^3$ (144,000 bbl).

Sumas Pump Station and Terminal

The Sumas pump station and the Sumas terminal are located in Abbotsford, British Columbia. The facilities, 3.5 km apart, are connected by two pipelines (20- and 24-inch). Both facilities route products from the TMPL mainline into Washington State via KMC’s Puget Sound pipeline system. The terminal contains six storage tanks with an overall volume of 103,000 m$^3$ (650,000 bbl).

Burnaby Terminal

The Burnaby terminal is the terminus of the TMPL mainline. It receives both crude oil and refined products for temporary storage and distribution through pipelines to local terminals, a refinery and the Westridge marine terminal. The Burnaby terminal has 13 storage tanks with an overall volume of 250,000 m$^3$ (1.6 million bbl).
Westridge Marine Terminal

The Westridge marine terminal is located within Port Metro Vancouver in Burnaby, British Columbia, and is connected to the Burnaby terminal by a 24-inch pipeline. In operation since 1956, the Westridge terminal can accommodate ships up to approximately 100,000 dead weight tons and barges. In addition to shipping crude oil, the facility also receives jet fuel, which is delivered to the Vancouver International Airport through the Jet Fuel pipeline system.

The Westridge marine terminal is regulated by Transport Canada and NEB. Three storage tanks have an overall volume of 46,000 m³ (290,000 bbl).

TMPL Expansion

After receiving strong commitments from its customers, KMC has announced a proposed expansion of TMPL between Edmonton, Alberta and Burnaby, British Columbia.

The proposed TMPL expansion, if approved by NEB, would add approximately 980 km (609 miles) of new, twinned pipeline that would increase the capacity of the system from 300,000 to 890,000 barrels per day (bpd). Where practical, the routing of the proposed expansion will remain within the existing TMPL right-of-way.

In 2012, KMC began an open, extensive and thorough engagement with landowners, Aboriginal groups, communities and stakeholders on all aspects of the proposed expansion project. Engineering, environmental, and socio-economic assessments along with traditional knowledge studies are also underway. The goal is to file a comprehensive facilities application with NEB in late 2013 to start a regulatory project review.

For more information about the proposed expansion project, visit www.transmountain.com.
Recently Completed Projects

Through its history, the TMPL system has been expanded several times. Most recently, two major projects were completed in 2008. The Trans Mountain Pump Station expansion (TMPSE) added 10 new pump stations along the existing system. The Anchor Loop Project twinned (or looped) a 159-kilometre (99-mile) section of the existing TMPL system between Hinton, Alberta, and Hargreaves, British Columbia. Two new pump stations were also built as part of Anchor Loop. Together TMPSE and Anchor Loop increased the TMPL capacity from 225,000 to 300,000 bpd.

Anchor Loop Project

The award winning Anchor Loop pipeline was one of the most challenging pipeline projects to be built in North America. Rugged mountainous terrain, narrow rights-of-way and proximity to existing infrastructure created some of the toughest pipelining conditions in the world. However, the biggest challenge was working in the environmentally sensitive areas of Jasper National Park and Mount Robson Provincial Park — a UNESCO designated Rocky Mountain Parks World Heritage Site. Many view Anchor Loop as a legacy project that surpassed stringent environmental standards and regulations.

In 2008, when construction on the Anchor Loop project was completed, KMC committed to a comprehensive post-construction monitoring program to evaluate the success and effectiveness of environmental protection and restoration measures on the project. The program was developed in collaboration with Parks Canada and will continue well into the future to not only meet the original five-year post-construction monitoring requirements, but also to monitor sensitive environmental areas for many years to come.

In 2010, KMC’s restoration efforts on the Anchor Loop project were recognized with the Alberta Emerald Award for environmental stewardship and responsibility.

Jet Fuel Pipeline System

The Jet Fuel pipeline system transports jet fuel from the Chevron refinery and distribution facilities in the Burnaby area to the Burnaby terminal and then to the Vancouver International Airport terminal. The 41-km (25-mile) Jet Fuel pipeline system has been in operation since 1969. It includes five storage tanks at the Vancouver International Airport terminal with an overall volume of 7,155 m$^3$ (45,000 bbl). The system is regulated by the Oil and Gas Commission and the British Columbia Utilities Commission.
Puget Sound Pipeline

In operation since 1954, the Puget Sound system ships Canadian crude oil and refined products via the TMPL system from Abbotsford, British Columbia, for delivery to Washington State refineries at Anacortes, Cherry Point and Ferndale.

Puget Sound System Facts
- Length: 111 km (69 miles)
- Diameter: 16- to 20-inch
- Capacity: 28,600 m$^3$/d (180,000 bpd)* (approx.)
- Transit time: one day (approx.)
- Pump stations: one

* Puget Sound capacity, as shown, is limited to a combined delivery capability of crude oil to both Anacortes and Ferndale/Cherry Point.
Cochin Pipeline System

In operation since 1979, the Cochin pipeline system is a multi-product pipeline operating between Fort Saskatchewan, Alberta, and Windsor, Ontario. The pipeline traverses three provinces in Canada and seven states in the United States transporting light hydrocarbon liquids to the Midwestern United States and eastern Canadian petrochemical and fuel markets.

Current operations involve only the transportation of propane and ethane-propane mix, although other products have historically been transported on the pipeline.

Kinder Morgan is currently modifying the Cochin pipeline system to move light condensate westbound from the new Kinder Morgan Cochin terminal in Kankakee County, Ill., to existing terminal facilities near Fort Saskatchewan, Alberta. Subject to the timely receipt of necessary regulatory approvals and necessary capital improvements, shipments of light condensate could begin as early as July 1, 2014.

Cochin System Facts
- Length: 2,900 km (1,800 miles)
- Diameter: 12-inch
- Capacity: 11,000 m³/d (70,000 bpd) (approx.)
- Pump stations: 31
- Propane Terminals: five
- Storage cavern: one in Windsor
TERMINAL BUSINESS IN CANADA

Headquartered in Calgary, Alberta, Kinder Morgan Canada Terminals LP (KMCT) is a subsidiary of Kinder Morgan. KMCT owns and operates two strategically located terminals in western Canada.

Vancouver Wharves

Strategically located in North Vancouver, British Columbia, the Vancouver Wharves bulk commodity marine terminal provides cargo handling, storage, and vessel loading and unloading services for over 3.5 million tons of bulk cargos annually. Since Kinder Morgan acquired the facility in 2007, significant facility improvements and a focus on safety, quality and environmental protection have provided customers with a high level of confidence in entrusting their valuable cargo for shipment through this vital transportation link. Top industry producers in British Columbia’s mining sector, Alberta’s petroleum industry and western Canada’s grain producers rely on Kinder Morgan to ensure consistent and reliable deliveries of their products to overseas customers.

North Forty Terminal

Located in Strathcona County, east of Edmonton, Alberta, and adjacent to the KMC Edmonton terminal, the North Forty terminal provides merchant crude oil storage and blending services to western Canadian producers, refiners and marketers. The terminal consists of nine tanks totaling 350,000 m³ (2.2 million bbl) of dedicated customer storage that allows for maximum flexibility including time storage, blending and pipeline staging. Through the Edmonton terminal expansion that is now underway, KMCT will increase its merchant storage capability by 3.6 million barrels by the end of 2013 with further expansion available dependent upon customer demand.
CORPORATE RESPONSIBILITY

Doing business the right way, every day, is paramount at Kinder Morgan. Each year, we invest millions of dollars in integrity management and maintenance programs to protect the public, our employees and the environment. We outperform the industry averages in almost all safety and release related categories, and we publish our environmental, health and safety performance on our website at www.kindermorgan.com.

At Kinder Morgan, being a good corporate citizen goes well beyond operating our assets safely. We are committed to employing sustainable business practices, conducting ourselves in an ethical and responsible manner, and complying with applicable laws, rules and regulations.

We believe our neighbours, governments and Aboriginal communities play an important role in how we conduct our business. Our success depends on earning the trust, respect and cooperation of all community members. We are committed to respectful, transparent and collaborative interactions with communities to develop effective long-term relationships.

To honour this commitment, we participate in local communities by hosting facility open houses, providing newsletters and project updates, making safety and public awareness presentations, participating in community events, regulatory processes and informal meetings.

Through the Kinder Morgan Foundation, we support various initiatives in the communities where we operate by making charitable contributions to qualifying programs that promote the academic and artistic interests of young people in the many cities and towns across North America.

We are actively involved in a number of projects aiming to enhance the wildlife habitat within our operating areas. Several of these initiatives received international recognition from the Wildlife Habitat Council (WHC), a nonprofit organization dedicated to the preservation and conservation of wildlife habitat.

For more information, please visit our website at www.kindermorgan.com.
Data presented in this document are approximate in nature and are based on current public information regarding the respective pipeline systems and terminal facilities. Please note pipeline capacity is influenced by the density of the products shipped.