

WEST COAST LNG PROJECTS AND PROPOSALS



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Kitimat LNG Facility



Canada Location: The Kitimat LNG Terminal will be located at Bish Cove near the Port of Kitimat, on Tidewater Douglas Channel. The site is 14 km SSW of Kitimat, British Columbia.

Owner/Website: 40 %Apache Corp., 30% EOG Resources Canada Inc., 30% Encana Corporation. KM LNG is the operator. [www.kitimatlng.com].

Project Contact: Rosemary Boulton, President, Kitimat LNG, [RBoulton@kitimatlng.com].

Description: Kitimat LNG Inc. is proposing to construct and operate a liquefied natural gas (LNG) export, liquefaction and LNG send-out terminal at Bish Cove near the Port of Kitimat, BC, Canada. Kitimat LNG Terminal will include marine on-loading, LNG storage, natural gas delivery, liquefaction and LNG send-out facilities. The terminal will take delivery of gas via a pipeline lateral, approximately 15 kilometres long, from the Pacific Trail Pipelines, which will be connected to the existing Spectra Energy's Westcoast Pipeline system. The proximity of the terminal to existing natural gas transmission infrastructure is one of the advantages of this project, and ensures supply has easy access to the Kitimat Terminal. Pipeline website: <http://www.pacifictrailpipelines.com/>

Average Natural Gas Production Capacity: 0.64 Bcf/d

Peak Natural Gas Production Capacity: unknown

LNG Storage Capacity: two 210,000 cubic meters storage tanks (8.9 Bcf)

Possible Markets: Japan, China, South Korea

Approximate Project Cost: \$500 million

Projected On-Line Date: full operation set for early 2013.

Siting Process: Under the British Columbia Environmental Assessment Act, Reviewable Projects Regulation, the developer chooses a potential site for an LNG facility and applies for the various required government agency permits. Which permits are required, including environmental permits, depends on the location and size of the proposed LNG facility. The Environmental Assessment Office coordinates assessments of the impacts of major development proposals in British Columbia and reports to the Minister of Sustainable Resource Management. The assessment process results in recommendations to either grant or refuse an Environmental Assessment certificate. A decision is made by the Minister of Sustainable Resource Management, Minister of Water, Land and Air Protection and a third appropriate minister. Various other government agency permits are also required. The British Columbia Environmental Assessment process works in conjunction with the Canadian Environmental Assessment Agency to ensure concurrent federal government approvals.

Status:

- 5/04 – Plans to build were announced.
- 8/18/04 – Application filed with the Environmental Assessment Office (EAO). Preliminary geotechnical and engineering reviews have been completed. The Preliminary Project Description was submitted to British Columbia EAO.
- 9/14/04 – Pre-Application start date.
- 3/31/05 – Project subject to Schedule A to Order under Section 11 of the Canadian Environmental Assessment Act of 1992 filed.
- 4/13/05 – The Terms of Reference for the project were filed for the environmental assessment certificate.
- 5/04/05 – EAO requested additional information before application could be accepted.
- 6/6/05 – Application accepted for 180 day review.
- Public comment period on application was 6/15/05 to 7/30/05.
- 1/13/06 – Bish Cove Addendum submitted in response to EAO's request for additional information. Public comment period for Addendum set for 1/18/06 to 1/31/06.
- 2/1/06 – Public comment period was extended and scheduled to close 2/22/06.
- 6/06/06 – Kitimat LNG Terminal received B.C. environmental approval.
- 8/01/06 – The Canadian Environment Minister has announced that the proposed LNG facility is not likely to cause significant adverse environmental effects and has approved the project. The project is now fully permitted, both provincially and federally.
- 9/26/06 – Kitimat signs heads of agreement (HOA) with Liquefied Natural Gas Ltd. (LNG Ltd) for LNG Supply.
- Kitimat is tentatively planning to break ground on construction during the Summer of 2009.
- Pacific Trails Pipelines, a partnership between Galveston LNG and Pacific

Northern Gas, has been launched to develop the natural gas transmission pipeline from Kitimat to Summit Lake, B.C., to serve the Kitimat LNG Terminal.

- 8/10/07 – Pacific Trails Pipeline has filed its formal environmental application with B.C. Environmental Assessment Office.
- 7/16/08 – Kitimat plans to break ground on construction for the project in the third quarter of 2009 if it finalizes commercial agreements within the next six months.
- 9/19/08 – Kitimat plans liquefied natural gas export terminal to meet growing demand in Asia.
- 11/25/08 – Kitimat solicits interest in the export project.
- 12/10/08 – Kitimat LNG obtains federal and provincial final environmental approval.
- 1/13/09 – Kitimat signs agreement with Mitsubishi Corporation for LNG terminal.
- 3/16/09 – The proposed Pacific Trail Pipelines that would serve the Kitimat LNG project, has received approval from two Canadian regulatory bodies – Transport Canada and Fisheries and Oceans Canada.
- 6/2/09 - KOGAS signs MOU for 40% of Kitimat output.
- 7/7/09 – GAS NATURAL signs MOU for 30% of Kitimat output.
- 7/13/09 – Kitimat signs MOU with EOG Resources Canada to supply natural gas to the liquefaction facility.
- 8/10/09 – Apache signs MOU to supply Kitimat LNG with as much as 300,000 Mcf/d.
- 1/15/10 – Apache acquired a controlling 51% stake in Kitimat LNG, with Galveston LNG retaining 49%.
- 1/21/10 – Kitimat signs MOU with ‘major’ Japanese firm after MOU with Mitsubishi expired.
- EOG Canada acquires 49% from Galveston LNG Inc (May 2010).
- March 2011 – Ownership ships so that: 40 %Apache Corp., 30% EOG Resources Canada Inc., 30% Encana Corporation. KM LNG is the operator.
- 4/27/11 – Haisla Nation and LNG Partners of Houston have joined to propose an LNG export facility just north of Kitimat on Douglas Island in Bish Cove. The project will cost between 360 and 450 million dollars and will move about 125 MMcf/d. The project is scheduled to come online in 2013.

Sources of Information:

- Environmental Assessment Office Project Information Centre [www.eao.gov.bc.ca], accessed 2/6/06.
- Kitimat LNG website [<http://www.kitimatlng.com>], accessed 1/9/07.
- “Kitimat LNG Plant Takes Step Forward” by Scott Simpson, Vancouver Sun, [<http://www.sqwalk.com/blog/000365.html>], accessed 2/6/06.
- “Environment Minister announces decision on the proposed Kitimat LNG

Terminal" 8/01/06

[<http://www.news.gc.ca/cfm/view/en/index.jsp?articleid=230719>]

- Platts LNG Daily

Texada Island LNG Facility

Canada Location: The terminal will be located near Kiddie Point which is near the northern tip of Texada Island.

Owner/Website: WestPac LNG Corp.,
[<http://www.westpaclng.com>].

Project Contact: Stu Leson President with WestPac; 1- (800) 975-2409
[Sleson@WestPacLNG.com].



Description: The import facility would have two storage tanks; marine jetty; an LNG regasification plant; in-tank and external LNG export and trans-shipment pumps; a vapour handling system, and pipeline interconnection and compression. The power generation facility comprises natural gas-fired turbines and heat-recovery steam generators, with a sub-station, a 500kV transformer and short interconnection line to the existing transmission line on Texada Island that delivers electricity from the B.C. mainland to Vancouver Island.

Average Natural Gas Production Capacity: 500 million cubic feet per day.

Peak Natural Gas Production Capacity:

LNG Storage Capacity: 165,000 cubic meters each (two tanks).

Tentative LNG Sources: Middle East, Australia, Indonesia, and Russia.
(Sources of LNG are tentative until the final contract is signed.)

Possible Markets: British Columbia

Approximate Project Cost: CDN \$2.0 billion

Projected On-Line Date: 2014

Siting Process: Under the British Columbia Environmental Assessment Act, Reviewable Projects Regulation, the developer chooses a potential site for an LNG facility and applies for the various required government agency permits. Which permits are required, including environmental permits, depends on the location and size of the proposed LNG facility. The Environmental Assessment Office coordinates assessments of the impacts of major development proposals in British Columbia and reports to the Minister of Sustainable Resource

Management. The assessment process results in recommendations to either grant or refuse an Environmental Assessment certificate. A decision is made by the Minister of Sustainable Resource Management, Minister of Water, Land and Air Protection and a third appropriate minister. Various other government agency permits are also required. The British Columbia Environmental Assessment process works in conjunction with the Canadian Environmental Assessment Agency to ensure concurrent federal government approvals.

Status:

- 7/05/04 - Agreement signed with Ridley Terminals and Port of Prince Rupert.
- 12/04 - WestPac entered into a 30-year land lease agreement with Prince Rupert Port Authority which gives WestPac the exclusive rights for LNG development on 250 acres of industrial land on Ridley Island.
- WestPac was to begin the environmental and regulatory approval process in 2005 but no information has been submitted.
- On June 6, 2006 Westpac filed its official Project Description [www.westpaclng.com/docs/ProjectDescription.pdf] with the Prince Rupert Port Authority, formally beginning the regulatory review and environmental assessment process for the project.
- WestPac LNG Corp. has abandoned plans for a \$350-million liquefied natural gas terminal in Prince Rupert, B.C. and has proposed a \$2-billion LNG terminal and power plant on Texada Island in the Strait of Georgia.
- WestPac LNG plans to file a detailed Project Description with the BC Environmental Assessment Office and the Canadian Environmental Assessment Agency in early 2009.
- WestPac plans to put off filing its project description until the company has a better sense of new greenhouse gas (GHG) regulations that may come into effect.

Sources of Information:

- "Huge \$200M Gas Project Hits 'Critical Milestone,'" Canada.com News.
- "Prince Rupert Seals Deal for LNG Facility"; Business Edge Archive; December 23, 2004, to January 5, 2005; Vol. 4, No. 46.
- "Driving the Natural Gas Development in Prince Rupert"; Prince Rupert Daily News; July 5, 2004.
- **Canadian Liquefied Natural Gas Import Projects**, [www2.nrcan.gc.ca/es/erb/CMFiles/LNG_Web_Projects206NDS-04042005-9223.pdf], accessed 2/6/06.
- **Canadian Liquefied Natural Gas (LNG) Import Projects: September 2005 Update**, [www2.nrcan.gc.ca/es/erb/CMFiles/LNG_Web_Projects_Update206NZR-20092005-8545.pdf], accessed 2/6/06.

Port Westward LNG Facility

Oregon Location: The Port Westward LNG Facility would be located adjacent to Port of St. Helens along the Columbia River about seven miles from Clatskanie, Oregon.

Owner/Website: Port Westward LNG LLC (formerly Cherry Point Energy LLC).

Project Contact: Spiro Vassilopoulos, Chief Executive Officer, (801) 550-1028, [vassilopoulos@pwlng.com].



Description: This import terminal would be near an existing power plant. A pipeline would be built to connect the terminal with the Williams Northwest Pipeline.

Average Natural Gas Production Capacity: 700 million cubic feet per day.

Peak Natural Gas Production Capacity: 1,250 million cubic feet per day.

LNG Storage Capacity: Unknown

Tentative LNG Sources: Australia, Indonesia, Malaysia and Russia. (Sources of LNG are tentative until the final contract is signed.)

Possible Markets: Pacific Northwest

Approximate Project Cost: \$300-400 million

Projected On-Line Date: Unknown

Siting Process: FERC would be lead NEPA agency and the Oregon Energy Facilities Siting Council (OEFSC) would be lead state agency. An energy facility developer must apply to the OEFSC for a site certificate and must supply information about the proposed facility and the proposed site. This is a "one-stop" process in which the OEFSC determines compliance with specific standards of the OEFSC and other state and local permitting agencies. Public comment periods at the front end of the process, followed by a more formal contested case proceeding. In its application, the applicant must choose whether to seek land

use approval from the local jurisdiction or to have the OEFSC make the land use determination. The OEFSC will issue a site certificate for the project only if the local jurisdiction has approved the proposed land use or the OEFSC makes findings on compliance with the local land use ordinances.

Status:

- 8/04 – Port Westward LNG announces plans for project.
- 4/4/05 – Pre-filing Application sent to FERC.
- 4/28/05 – Pre-filing request denied by FERC. More information needed on project and availability of proposed site. Port Westward LNG is currently negotiating land purchase and planning the details of the project.
- 12/30/05 – An agreement on a lease proposal for the 145-acre parcel of land north of Clatskanie along the Columbia River has been reached with the owners. Formal language of the lease is currently being drafted.
- 2/23/06 - This project has been temporarily suspended because investors have withdrawn their financial support, which appears to have derailed a December 2005 negotiated lease agreement for the proposed project site. Site control is required by federal regulators for an LNG terminal proposal.
- 3/10/06 - The Port of St. Helens has approved a 99-year lease agreement on land along the Columbia River. Delays in obtaining a lease had caused at least one major investor in February to withdraw from the project. Port officials expect the Thompson family, who own the land, to approve the agreement soon. The project still needs permits and financing, though officials state that there have been "serious inquiries" from financial backers since the port approved the lease agreement.

Sources of Information:

- "St. Helens Leaders Set to Secure Land for LNG Plant," by Kate Ramsayer, The Daily Astorian, December 30, 2005, [www.dailyastorian.com/main.asp?SectionID=78&SubSectionID=876&ArticleID=30157&TM=64128.72], accessed 2/7/06.
- Port Westward LNG, contact information, [http://pwlng.com/contact_info.htm].
- "Port of St. Helens Approves Lease to Secure Land for LNG Plant," by Janine Manny, The Daily News, March 10, 2006, [www.tdn.com/articles/2006/03/11/area_news/news06.txt].

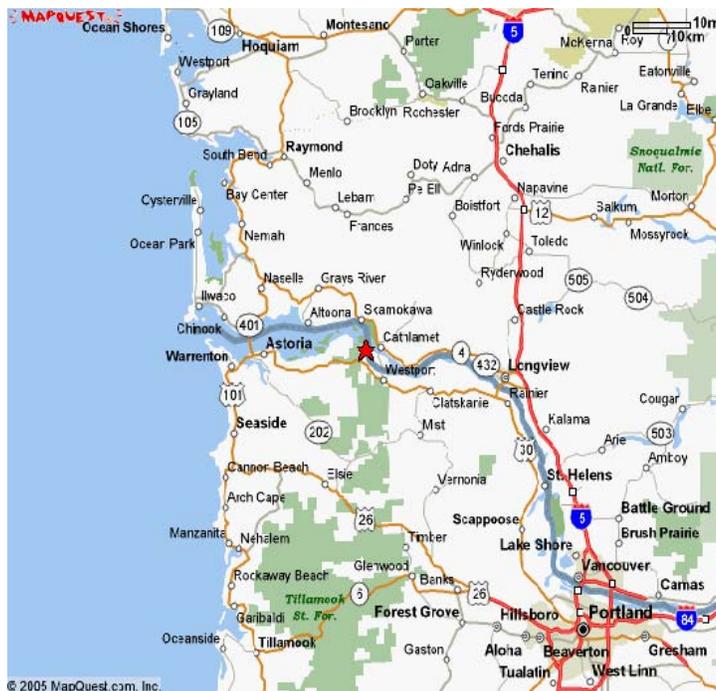
Northern Star LNG Facility

Oregon Location: The project would be located in Bradwood, Oregon, on the southern shore of the Columbia River approximately 38 miles from the Pacific shoreline.

Owner/Website: Northern Star Natural Gas LLC
[www.northernstar-lng.com].

Project Contact: Gary Coppedge, Vice President, Permitting and Development, (505) 532-5000, [grcoppedge@northernstar-ng.com].

Description: The facility would consist of a marine terminal and LNG transfer lines, two storage tanks (and plans for a third tank in the future), LNG vaporization and sendout system, vapor handling system, utilities and infrastructure, and approximately 35 miles of new 36-inch diameter natural gas send out pipeline to interconnect with the Williams Northwest Pipeline system.



Average Natural Gas Production Capacity: 1,000 million cubic feet per day.

Peak Natural Gas Production Capacity: 1 Bcf/day – baseload
1.3 Bcf/day – peak.

LNG Storage Capacity: 160,000 cubic meters per tank (two tanks).

Tentative LNG Sources: Pacific Basin, Alaska

Possible Markets: Pacific Northwest

Approximate Project Cost: \$580 Million

Projected On-Line Date: Last Quarter 2010

Siting Process: FERC would be lead NEPA agency and the OEFSC would be lead state agency. An energy facility developer must apply to the OEFSC for a site
September 2011

certificate and must supply information about the proposed facility and the proposed site. This is a "one-stop" process in which the OEFSC determines compliance with specific standards of the OEFSC and other state and local permitting agencies. Public comment periods at the front end of the process, followed by a more formal contested case proceeding. In its application, the applicant must choose whether to seek land use approval from the local jurisdiction or to have the OEFSC make the land use determination. The OEFSC will issue a site certificate for the project only if the local jurisdiction has approved the proposed land use or the OEFSC makes findings on compliance with the local land use ordinances.

Status:

- 2/22/05 – Formally requested FERC to commence a NEPA pre-filing review.
- 3/7/05 – FERC granted Northern Star Natural Gas' request to use FERC's pre-filing process.
- 3/18/05 – Pre-filing process review papers filed with FERC.
- 4/15/05 – Northern Star LLC submitted a Notice of Intent to the Oregon Energy Facilities Siting Council.
- 9/13/05 – Notice of Intent to prepare Environmental Impact Statement and public meeting and site visit announced by FERC.
- 6/5/06 – Application is submitted to FERC.
- 6/15/06 – Bradwood Landing LLC submits Resource Report to FERC.
- November 2006 – Joint Permit Application submitted to FERC for terminal and pipeline project.
- NorthernStar Natural Gas Co. has pledged \$50 million toward salmon recovery efforts along the Columbia contingent upon the company getting approval to build the proposed LNG facility at Bradwood Landing.
- February 2007 - Bradwood Landing Terminal and Pipeline has released a Mitigation Plan - Revised Preliminary Design Draft.
- February 28, 2007 – The U.S. Coast Guard has completed the Water Suitability Assessment Report (WSAR).
- May 5, 2007 – Open season for the pipeline project ended on May 5, 2007. Bidders will be informed of awarded capacity by May 31, 2007.
- May 15, 2007 – NorthernStar submitted its Air Permit application to Oregon's Department of Environmental Quality.
- A public hearing is scheduled for July 10, 2007.
- August 1, 2007 – NorthernStar submitted MITIGATION PLAN – 3rd Revision Preliminary Engineering Design Draft.
- August 17, 2007 – FERC issues draft Environmental Impact Statement (dEIS).
- August 31, 2007 – The Clatsop County Planning Commission in Oregon has given tentative approvals to several land-use requests made by Bradwood Landing.

- October 15, 2007 – Staff of Clatsop County’s Community Development Department has issued a 30-page supplemental report that disagrees with the findings of the Clatsop County Planning Commission.
- The county commission held a public hearing on the land-use application on October 22, 2007.
- Comments are due by December 24, 2007.
- December 13, 2007 - Clatsop County Commission approves zoning changes requested to build the proposed Bradwood Landing LNG terminal.
- The Oregon DEQ will accept comments on the water quality certification process until February 29, 2008.
- 3/20/08 - Clatsop Co. Commission re-affirms approval of Bradwood Landing LNG terminal through findings vote today. NorthernStar also proposes contract with county to abide by conditions and not appeal them to FERC.
- 4/17/08 - Bradwood Landing project seeks to block a referendum that would revoke a land use amendment favoring the project.
- 6/4/08 – Bradwood Landing submits Biological Assessment and comprehensive Mitigation Plan to FERC.
- 6/6/08 – FERC issues FEIS for the Bradwood Landing Project.
- 9/18/08 – FERC approves Bradwood Landing – making it the first U.S. West Coast LNG terminal to receive certificate order.
- 11/17/08 – FERC grants a rehearing request for Bradwood Landing Project.
- 1/15/09 – FERC upholds Bradwood Landing approval decision.
- 1/27/09 – The state of Oregon filed a petition in the U.S. 9th Circuit Court of Appeals asking for FERC’s approval of the project to be overturned.
- 1/30/09 – The Oregon Land Use Board of Appeals rules to overturn a decision by Clatsop County Commission that approved a land use agreement for Bradwood LNG – siting concern of the size of the project potential impact on salmon.
- 3/20/09 – The U.S. Department of Justice has joined the state of Oregon in seeking to have the U.S. 9th Circuit Court of Appeals overturn FERC’s approval of Bradwood Landing.
- 9/1/09 – FERC upholds its orders conditionally approving Bradwood Landing and associated sendout pipeline. It also denied the state of Oregon’s bid to stay the project.
- 2/24/10 – Caution letter from director of Environmental Quality Department issued. Letter advises the applicant to withdraw and reapply to avoid denial of water quality permit.
- 5/5/10 – NorthernStar files for bankruptcy and suspends development of Bradwood Landing LNG.

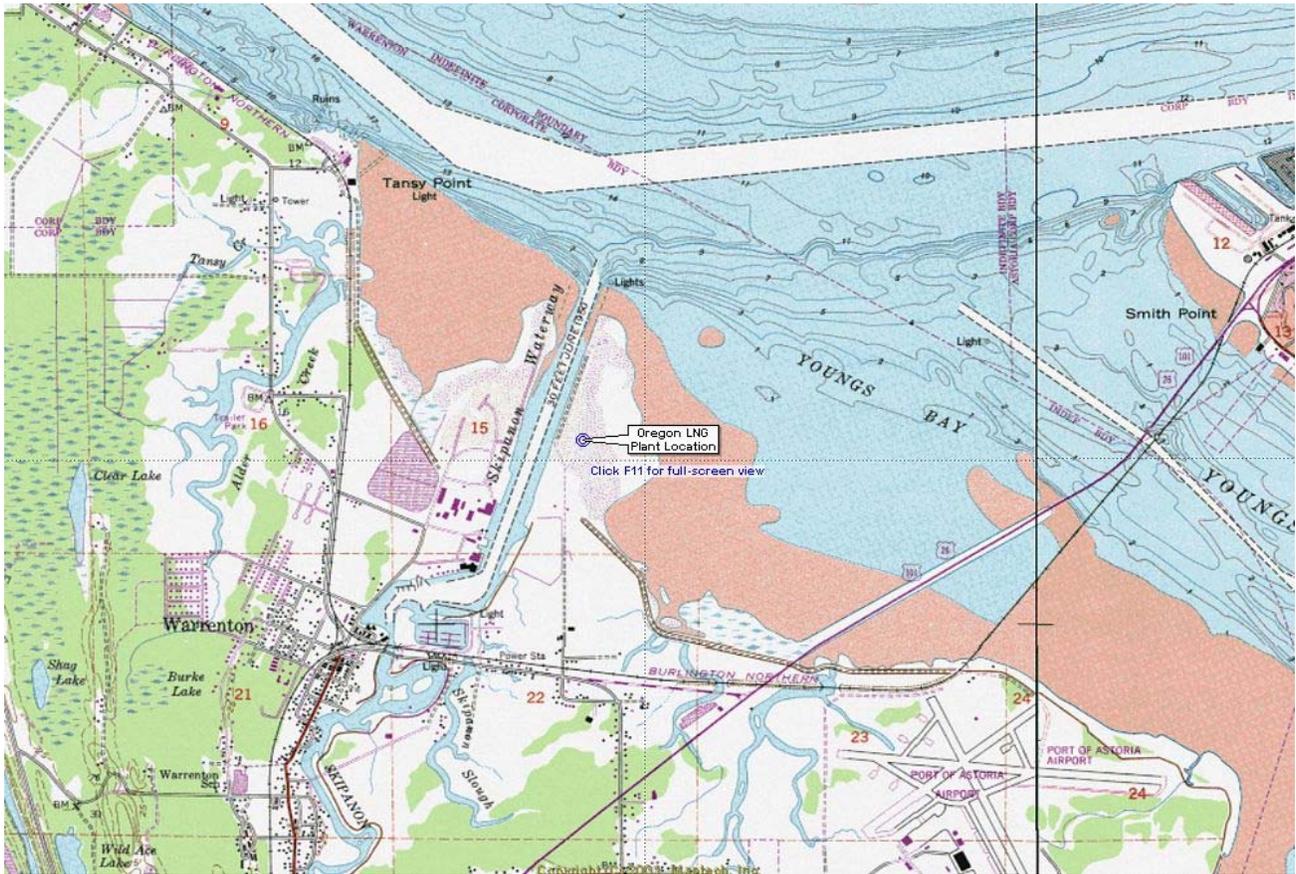
Sources of Information:

- The Daily Astorian, 3/12/07,
<http://www.dailyastorian.info/main.asp?SectionID=23&SubSectionID=783&Ar>

[ticleID=40871&TM=58668.25](#)

- “Pacific Northwest LNG Terminal, Pipe Project Cleared for NEPA Pre-Filing Review”, Natural Gas Intelligence’s Daily Gas Price Index posted March 7, 2005.
- Federal Regulatory Energy Commission Docket No. PF05-10-000; Internet letter posted Tuesday, February 22 by Patrick McGee, [www.voy.com/151230/2046.html].
- Oregon Energy Facility Siting Council, [http://egov.oregon.gov/energy/siting/review.shtml#Northern_Star_Natural_Gas], accessed 2/7/06.
- “Notice Of Intent To Prepare An Environmental Impact Statement For The Bradwood Landing LNG Project, Request For Comments On Environmental Issues, And Notice Of A Joint Public Meeting, And Site Visit,” [www.northernstar-ng.com/news.htm], accessed 2/7/06.

Oregon LNG Facility



Oregon Location: The project would be located in Astoria, Oregon. Details to follow.

Owner/Website: Funding Partners. [www.oregonlng.net]

Project Contact: Peter Hansen (503) 298-4969; Mohammed Alrai (503) 298-4967 [Mohammeda@oregonlng.com]

Description: LNG would be off-loaded into three storage tanks at the import facility. A 30-inch pipeline would take the natural gas to the northwest pipeline system for regional distribution. Ambient air and boilers will be used as the heat source for regasification.

Average Natural Gas Production Capacity: 1,000 million cubic feet per day. Peak of 1.5 Bcf/d.

Peak Natural Gas Production Capacity: Unknown.

LNG Storage Capacity: 158,987 cubic meters (3 tanks).

Tentative LNG Sources: Pacific Rim Producers. (Sources of LNG are tentative until the final contract is signed.)

Possible Markets: Pacific Northwest

Approximate Project Cost: \$700 million – terminal; \$300 million – pipeline

Projected On-Line Date: 2012 (3rd quarter)

Siting Process: FERC would be lead NEPA agency and the Oregon Energy Facilities Siting Council (OEFSC) would be lead state agency. An energy facility developer must apply to the OEFSC for a site certificate and must supply information about the proposed facility and the proposed site. This is a "one-stop" process in which the OEFSC determines compliance with specific standards of the OEFSC and other state and local permitting agencies. Public comment periods at the front end of the process, followed by a more formal contested case proceeding. In its application, the applicant must choose whether to seek land use approval from the local jurisdiction or to have the OEFSC make the land use determination. The OEFSC will issue a site certificate for the project only if the local jurisdiction has approved the proposed land use or the OEFSC makes findings on compliance with the local land use ordinances.

Status:

- 11/5/04 – The Port of Astoria agrees to lease (65 year) 96 acres to Calpine.
- Pre-filing with FERC is expected to occur in May 2007.
- 2/1/07 – Calpine has sold the Skipanon LNG project to partners with a company name that is currently Leucadia National Corporation.
- The project has already started the Waterway Suitability Assessment analysis and will be filing the Preliminary Waterway Suitability Assessment in late May, 2007 to the United States Coast Guard (USCG).
- Oregon LNG submitted a preliminary Water Suitability Assessment Report on May 23, 2007.
- The project site has already been re-zoned to allow for the building of an LNG facility.
- FERC Pre-Filing Application to be submitted in June 2007.
- 6/19/07 – Oregon LNG has submitted its Pre-Filing Application to FERC.
- LOI submitted to captain of port in June 2007.
- Oregon Pipeline Company Public Meetings are scheduled for December 18 and December 20, 2007.
- The first Resource Report was submitted in January 2008. The second Resource Report was submitted in April 2008.

- 6/11/08 – Oregon LNG has issued its Water Suitability Assessment (WSA) to the U.S. Coast Guard.
- 10/10/08 – Oregon LNG files formal application with FERC.
- 4/21/09 – The U.S. Coast Guard issues a letter of recommendation for Oregon LNG.
- 6/8/09 – Oregon LNG signs MOU with the State of Oregon on CO2 mitigation, plant retirement and emergency preparedness.
- 11/18/09 – A federal magistrate rules that Astoria's Port should extend both its sublease with Oregon LNG and the Department of State Lands for three decades.
- 3/23/10 – Port of Astoria commissioners voted to renew a land lease with Oregon LNG.
- 5/14/10 – U.S. FERC asks Oregon LNG to schedule pipeline open season soon or withdraw the application for its authorization.
- 5/18/11 - Court upholds Clatsop County Commission to reject Oregon LNG pipeline project.

Sources of Information:

- "Port of Astoria Gives Gas Plant Its Blessing," The Daily News and AP, November 11, 2004.
- Port of Astoria website at [www.portofastoria.com/developmentprojects/sngf.html].
- Project Website: [www.oregonlng.net].

Peak Natural Gas Production Capacity:

LNG Storage Capacity: 6.4 Bcf (each tank[2]).

Tentative LNG Sources: Alaska, Russia, Peru, Indonesia, Qatar and Australia. (Sources of LNG are tentative until the final contract is signed.)

Possible Markets: The proposed Pacific Connector will deliver one billion cubic feet of natural gas per day to the Pacific Northwest, California and Nevada through various interconnects with the aforementioned systems.

Approximate Project Cost: \$700 million

Projected On-Line Date: late 2011

Siting Process: The Federal Energy Regulatory Commission (FERC), lead NEPA agency, will review the application concurrently with the Oregon Energy Facilities Siting Council (OEFSC), the state lead agency. FERC will oversee the preparation of an Environmental Impact Study (EIS) of the Project and review of the EIS will be performed by other involved federal agencies. This review is to ensure that their agency's concerns have been addressed and that federal rules and regulations have been followed. The role of OEFSC is to assure the proposed energy facility conforms to state and local land-use and zoning regulations, and is consistent with Oregon's vision of its long term energy future. The need for the proposed facility is considered prior to issuing a Siting Certificate. The Siting Certificate gives the project permission to construct and operate the facility subject to conformance with all other federal, state and local regulations. The Oregon Department of Environmental Quality implements and enforces all federal air and water quality standards.

Status:

- 11/22/04 – Notice of Intent submitted 11/22/04; comments due 02/10/05.
- 1/19/05 – Public Information meeting held.
- 3/24/05 – Project Order filed by the Oregon Department of Energy.
- JCEP will initiate the NEPA pre-filing process with FERC in early-mid 2006.
- Both the terminal and pipeline made pre-filings at the FERC in April 2006. The FERC pre-filings dockets are PF06-25 and PF06-26, respectively. Pipeline routing, environmental scoping, engineering, marketing are all moving forward as the goal of filing a formal FERC application in April 2007 remains.
- Scoping comment meetings were held in July. Final date to submit scoping comments is July 24, 2006.
- 1/16/07 – Jordan Cove has submitted a revised draft resource report reflecting comments received to FERC.

- 2/2/07 – Sponsors began seeking binding commitments from shippers. The open season was scheduled to close March 1, 2007. The sponsors said they had already received expressions of interest for the majority of the capacity for the proposed line.
- 3/8/07 – Jordan Cove announced the completion of their open season for their proposed Pacific Connector Gas Pipeline with the signing of precedent agreements with seven shippers for 1.49 billion cubic feet per day (Bcf/day). The open season for interested parties closed on March 5, 2007.
- 5/8/07 – Pre-Filing Activity Report #12 submitted to FERC by Jordan Cove.
- 6/11/07 – Pre-Filing Activity Report #13 submitted to FERC by Jordan Cove.
- 7/09/07 – Pre-Filing Activity Report #14 submitted to FERC by Jordan Cove.
- 8/15/07 – Pre-Filing Activity Report #15 submitted to FERC by Jordan Cove.
- 9/4/07 – Jordan Cove Energy Project L.P. and Pacific Connector Gas Pipeline, L.P. have each filed an application today with the Federal Energy Regulatory Commission (FERC).
- 11/07/07 – The Coos County Board of Commissioners voted to unanimously approve Jordan Cove Energy Project’s application for an Administrative Conditional Use (ACU) permit.
- 6/30/08 – The U.S. Coast Guard issues Water Suitability Assessment (WSA) Report; sites that significant changes are needed for project.
- 8/29/08 – FERC issues the Draft EIS.
- 5/1/09 – FERC issues the Final EIS.
- 12/17/09 – FERC approves Jordan Cove, Oregon Governor to appeal.
- 1/19/10 – The state of Oregon has petitioned FERC to rehear the case on Jordan Cove.
- 9/1/10 – Pacific Connector Gas Pipeline sues the State of Oregon in federal court for delays.
- 10/15/10 – FERC issued a revised biological assessment Thursday that lists 12 protected species that could be harmed by the facility without adequate mitigation plans.

Sources of Information:

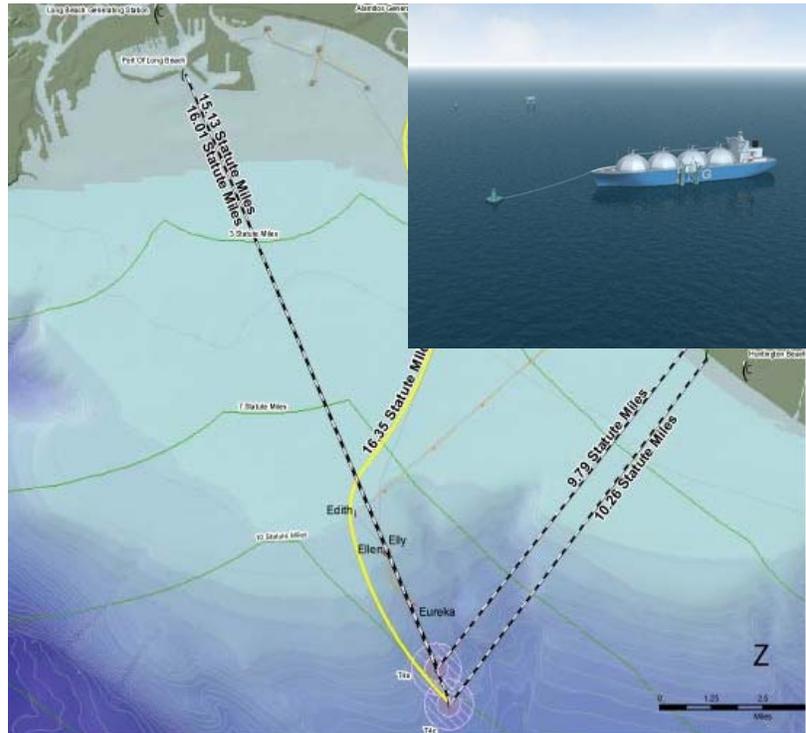
- Jordan Cove Project website [www.jordancoveenergy.com].
- “Pipeline Deal Under Review, County Could See Nearly \$2M,” September 23, 2004, [www.jordancoveenergy.com/923world.pdf].
- “Panel Advises Getting More LNG Information”, November 15, 2004, [www.theworldlink.com/articles/2004/11/15/news/news02.prt].
- Oregon Energy Facility Siting, [www.egov.oregon.gov/energy/siting/review.shtml#top].
- JRJ.Com [<http://usstock.jrj.com.cn/news/2007-11-14/000002922223.html>]

Esperanza Energy, Port Esperanza

California Location: The proposed location of Port Esperanza is approximately 15 miles seaward of the Port of Long Beach and approximately 10 miles offshore from the closest point of land in California.

Owner/Website: Esperanza Energy, LLC is a subsidiary of Tideland Oil & Gas Corporation. [www.esperanza-energy.com]

Project Contact: Dave Maul, (530) 304-8096, [dave@maulenergyadvisors.com]



Description: The entire Port Esperanza facility includes two unmoored, self-propelled HiLoad regasification units, each connected to its own permanently moored buoy that allows LNG carriers to “weathervane” as wind and currents shift. The regasified natural gas is transported through 26” supply lines from each facility to a subsea manifold and then run as a single line to an onshore connection with an existing commercial gas pipeline distribution system. The total length of the gas pipeline is 21.5 miles. The transfer of LNG utilizes conventional LNG loading arms and is achieved without any differential movement between the HiLoad and the LNG carrier. When not active, each HiLoad unit partially lowers itself into the ocean to reduce its visual profile. The HiLoad units will be connected to power plants via an insulated 30” water pipeline and utilize the power plant’s normally wasted hot water to regasify the LNG. This warm water would be cooled during the regasification process to near ambient temperature before being discharged at the deep-water offshore facility.

Average Natural Gas Production Capacity:

Peak Natural Gas Production Capacity: 1.2 bcf/d

LNG Storage Capacity: N/A

Tentative LNG Sources:

Possible Markets: Southern California Gas Company's natural gas pipeline system.

Approximate Project Cost:**Projected Online Date:**

Siting Process: Esperanza plans to formally file its full application in late 2007. Once the application is deemed complete and accepted, a joint EIS/EIR will be prepared by the U.S. Coast Guard, as NEPA lead agency, and by the State Lands Commission, as CEQA lead agency. Under the Deepwater Port Act, the U.S. Coast Guard has less than one year to evaluate and reach a decision about project acceptability. The U.S. Coast Guard will review vessel safety and mooring design. Other federal permitting agencies include the Minerals Management Service. The California Coastal Commission must evaluate the project's consistency with the federal Coastal Zone Management Act, as well as issue a Coastal Development Permit for portions of the project within state waters.

Status:

- 3/7/07 – Esperanza Energy, LLC announced plans to file applications with state and federal agencies to build a floating LNG receiving facility. This project is currently on hold with no date given for application submittal.

Source of Information:

- [www.esperanza-energy.com]

Energia Costa Azul LNG Facility



Mexico Location: The Energia Costa Azul LNG Receiving Terminal project would be located about 14 miles north of Ensenada, on the Costa Azul plateau.

Owner/Website: Sempra Energy LNG Corporation [www.sempra.com/index.htm].

Project Manager: Dale Kelly-Cochrane, (619) 696-4654, [dkelly-cochrane@sempraglobal.com].

Description: This project would include a land-based receiving facility and related port infrastructure. The project site has more than

400 acres of undeveloped land, remote from residential areas. There would be two full containment tanks, open rack seawater vaporizers, and a 42-mile 36-inch to 42-inch diameter spur pipeline connecting the terminal to the Bajanorte Pipeline. Site has space for two additional storage tanks and expansion capabilities of up to 2,000 million cubic feet per day average with a peak of 2,600 million cubic feet per day (additional permitting required).

Average Natural Gas Production Capacity: 1,000 million cubic feet per day.
Expansion up to 2.5 Bcf/day

Peak Natural Gas Production Capacity: 1,300 million cubic feet per day.

LNG Storage Capacity: 320,000 cubic meters (two tanks).

Tentative LNG Sources: Approximately 500 million cubic feet per day from Indonesia, under 20-year agreement for gas from the proposed BP Tangguh LNG Project. Shell will supply the other half of the gas. (Sources of LNG are tentative until the final contract is signed.)

Possible Markets: Western Mexico, Southern California and Southwestern U.S.

Approximate Project Cost: \$875 million

Projected On-Line Date: 2008; 2010 for proposed expansion

Siting Process: On-shore LNG terminals must obtain three key permits or approvals from Mexican government agencies. The Energy Regulatory Commission (CRE) is responsible for regulating the siting, construction, operation, and ownership of LNG terminals in Mexico. Developers must obtain permission to import gas into Mexico and to build and operate an LNG receiving terminal from CRE. The developer must also prepare an environmental impact assessment and submit it to the Secretariat of Environment and Natural Resources (SEMARNAT). Based on that assessment, SEMARNAT issues an environmental impact authorization (EIA), including impact mitigation conditions. (It also requires LNG terminal developers to conduct a public safety risk study and issues a risk permit as well.) A land-use permit from the local municipality is the third key approval.

Status:

- 4/03 – Environmental permit received from Mexico's environmental protection agency, SEMARNAT (Environment and Natural Resources Secretariat).
- 8/03 – Storage and regasification permit received from the CRE (Energy Regulatory Commission) as well as the required land-use permits from the Municipality of Ensenada.
- 10/04 – Sempra signed a deal to buy 500 million cubic feet per day from BP's Tangguh LNG project in West Papua, Indonesia, for twenty years beginning in 2008.
- 10/04 – Royal Dutch/Shell agreed to contract for 50 percent of the import terminal's capacity and also reached an agreement with the Sakhalin Energy consortium that it leads to receive its supply from the Russian facility.
- 04/25/05, Sempra signed a preliminary, nonbinding Memorandum of Understanding (MOU) with Gazprom.
- 2/06 – Known court challenges have been resolved. This project has received all its permits and is under construction. Commercial operation is expected early 2008.
- 1/07 – All permits have been received for the pipeline in Mexico and a contractor has been selected. Construction is underway and the pipeline is on-schedule for start-up in conjunction with the facility.
- 6/07 – The North Baja gas line expansion has received final US FERC environmental approval.
- 6/20/07 – Sempra is in the final stages of permitting a 1.5 Bcf/d expansion of Costa Azul.
- On July 13, 2007 the California State Lands Commission will consider certification of this project's EIR, as well as an authorization to amend an existing lease to accommodate this project (North Baja gas line expansion).
- 6/13/07 – The California State Lands Commission has approved the TransCanada owned North Baja Pipeline expansion project.
- 10/3/07 – FERC has approved the North Baja Pipeline expansion project.

- 2/6/08 – Construction continues to run behind schedule. The terminal is 96% complete. The company expects commercial operation to commence late in the second quarter of 2008.
- 3/24/08 – Energia Costa Azul awarded Fluor Corp. subsidiary ICA Fluor a \$100 million contract to construct a nitrogen injection plant and a power generation facility within the Energia Costa Azul LNG regasification terminal. The first LNG carrier is expected to arrive on April 19th.
- 4/2/08 – Sempra completes North Baja pipeline expansion. Operations are due to begin in the second quarter this year.
- 5/19/08 – Sempra Energy's Energia Costa Azul liquefied natural gas receipt terminal had undergone a variety of startup and commissioning activities, including receiving the facility's first two LNG cargoes. The facility is reportedly ready for commercial operations. Supplies are not expected to start arriving until the first quarter of 2009.
- 2/13/09 – Sakhalin 2 is currently in the commissioning process. Tangguh is currently being commissioned – with first production expected at the end of the first quarter of 2009 and first deliveries to begin in May.
- 3/18/09 – The first cargo from Sakhalin 2 is scheduled to set sail for Tokyo Bay on March 28-29.
- 3/30/09 – Tangguh startup has been delayed until June.
- 4/8/09 – Gazprom and Royal Dutch Shell has officially reached an agreement that would send LNG from Sakhalin 2 to Energia Coasta Azul in Baja California, Mexico.
- 5/15/09 – Tangguh startup has been delayed until July.
- 7/2/09 – Sempra expects to deliver first Tangguh cargo to Costa Azul this quarter.
- 8/5/09 – Tangguh train 2 could be delayed until October to supply Costa Azul due to technical problems.
- 8/28/09 - 1.45 Bcf from Tangguh 1 (before maintenance issues) arrived at Costa Azul on Saturday (8/29/09).
- 11/30/09 – Tangguh 1 is expected to be back online by the end of December.
- 4/22/10 – Costa Azul is to start receiving standard cargos of 3 Bcf every 12 days.
- 6/11/10 – The first LNG cargo from new Peru LNG plant will go to Costa Azul this week.
- 6/21/10 – Costa Azul terminal will continue to operate despite court order to suspend operations over land dispute.
- 6/29/10 – Mexican court revokes order to suspend Sempra terminal permit.

Sources of Information:

- Sempra Energy website, [<http://www.energiacostaazul.com.mx/English/index.htm>], accessed 2/8/06.

- Phase 1 Comments of Sempra Energy LNG Corp. before the California Public Utilities Commission, March 23, 2004.
- “BP Indonesia, Sempra Ink LNG Supply Deal for the North Baja Terminal,” *Natural Gas Intelligence*, October 13, 2004.

Future Projects

The following projects have been announced but no additional details are available.

Terminal GNL de Sonora

Location: Puerto Libertad, Sonora, on the Gulf of California

Capacity: 1.0 Bcf/d

Start Up: 2010 - 2011

Front-end engineering for the proposed terminal and up to 350 miles of pipelines are complete. El Paso said June 5, 2006, that applications for environmental permits would be filed soon and an application for a federal CRE permit would be filed after supplies are secured. El Paso and DKRW plan to build pipelines to deliver gas to existing and proposed power plants and industrial sites in the state of Sonora, as well as to the US market. Potential US markets include Arizona, California, New Mexico and Texas. In addition, gas delivered to the US could be “redelivered” to Mexican states with robust and growing markets, El Paso said. El Paso and DKRW are continuing to talk with a number of suppliers who have expressed interest in the Sonora gas market and in having an entry point to the North American West Coast, El Paso said. The projected start-up date could be adjusted to meet the needs of suppliers, El Paso added. DKRW and El Paso in September 2004 entered into an agreement to jointly develop up to 350 miles of pipelines in Sonora, Mexico, to transport regasified LNG from the facility. El Paso in May 2006 halted planning work on a 59-mile pipeline that would link the proposed terminal to markets in Tucson, to address environmental and illegal immigration concerns. In a move to allow California to prepare for LNG deliveries, the California Public Utilities Commission on September 21, 2006, increased the Wobbe index cap to 1385 for the SoCal Gas and SDG&E systems. The utilities had sought a maximum index of 1400, but power generators and air-quality managers argued that a higher cap could damage equipment and cause harmful emissions. The PUC said the 1385 was a compromise that would allow investment in LNG infrastructure.

Status:

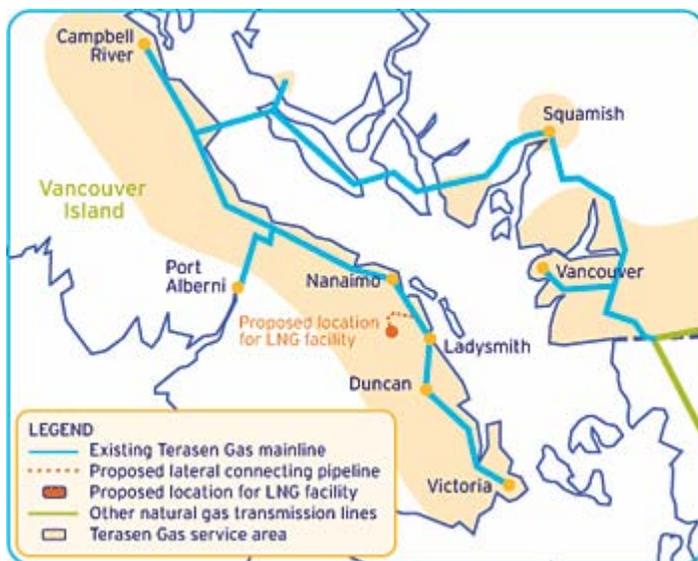
- El Paso Corp. and DKRW Energy LLC has received three environmental permits from the Mexican Federal Ministry of the Environmental and Natural Resources (SEMARNAT).
- El Paso and DKRW are now attempting to secure LNG suppliers.
- El Paso has pushed the start up date to 2010 – 2011.
- January 2007 - An application for a federal CRE permit would be filed after supplies are secured.

Source of Information:

- <http://www.platts.com>

Mt. Hayes Storage Project

NOTE: This is a Peak Shaving facility not an Import facility.



Location: West of Mt. Hayes, approximately eight kilometers northeast of Ladysmith on Vancouver Island.

Regas Capacity: 1.0 Bcfd

Liquefy Capacity: .08 Bcfd

Storage Capacity: A single LNG storage tank with a nominal volume of 1.5 Billion Cubic Feet.

Start Up: 2011

Contact: Guy Wassick (604) 592-7486.

The LNG plant will include:

- Systems for cleaning and liquefying the incoming gas taken from the existing Terasen transmission pipeline.
- A specially constructed tank for storing the LNG.
- A system for collecting boil-off gas.
- A system for pressurizing and vaporizing the stored LNG to convert it back into natural gas vapor and for delivery back to the transmission pipeline.

- Numerous utility, safety, and security systems.

Status:

Terasen Gas first applied in 2004 for permission to build the facility. In February 2005, the BCUC approved the project with the condition that a BC Hydro-sponsored gas-fired electrical generation project proposed for Duke Point must also precede. Terasen Gas submitted an application to The Cowichan Valley Regional District (CVRD) for the purpose of rezoning the Mt. Hayes site to permit the construction and operation of the LNG storage facility. The CVRD Advisory Planning Commission and Electoral Area Services Committee each reviewed the rezoning application. The application was also subject to a town hall meeting and formal public hearing prior to the CVRD board decision on the rezoning. The CVRD board approved the rezoning application on May 26, 2004. Terasen Gas plans to submit a new application in 2007 to the BC Utilities Commission.

- On June 5, 2007, Terasen Gas (Vancouver Island) Inc. submitted a new application to the BC Utilities Commission to construct a Liquefied Natural Gas (LNG) storage facility west of Mount Hayes on Vancouver Island, approximately eight kilometers northeast of Ladysmith.
- On November 15, 2007, Terasen Gas received conditional approval from the BC Utilities Commission to construct a natural gas storage facility northwest of Mount Hayes on Vancouver Island, approximately six kilometres northeast of Ladysmith.
- Construction is expected to begin in April 2008, once contracts for the materials and resources are finalized. The new facility will be in service by 2011.
- On April 1, 2008, Terasen Gas received final approval from the BC Utilities Commission to construct and operate a natural gas storage facility. Construction started in the month of April 2008. The new facility will be in service by 2011.
- March 1, 2011, Terasen Gas now operates under the name FortisBC Inc.

Source of Information:

- <http://www.fortisbc.com/About/ProjectsPlanning/GasUtility/NewOngoingProjects/VancouverIsland/MtHayesStorageProject/Pages/default.aspx>

