

# 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:** Kitimat LNG is a wholly owned subsidiary of Galveston LNG Inc., [[www.kitimatlng.com](http://www.kitimatlng.com)].

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

**Description:** The Kitimat LNG facility will include marine offloading, LNG Associate Energy Specialist (FO) storage, natural gas liquids recovery, regasification and sendout facilities to deliver gas into the Pacific Northern Gas pipeline and ultimately into the West Coast pipeline system. A 30-inch diameter pipeline 14 kilometers in length will run from the terminal to Kitimat.

**Average Natural Gas Production Capacity:** 610 million cubic feet per day

**Peak Natural Gas Production Capacity:** Potential expansion to 1.0 billion cubic feet per day.

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

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

**Possible Markets:** British Columbia, Alberta, Pacific Northwest, California

**Approximate Project Cost:** \$500 million

**Projected On-Line Date:** full operation set for early 2010.

**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 Fall of 2007.

### **Sources of Information:**

- Environmental Assessment Office Project Information Centre [[www.eao.gov.bc.ca](http://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/cfmx/view/en/index.jsp?articleid=230719>]

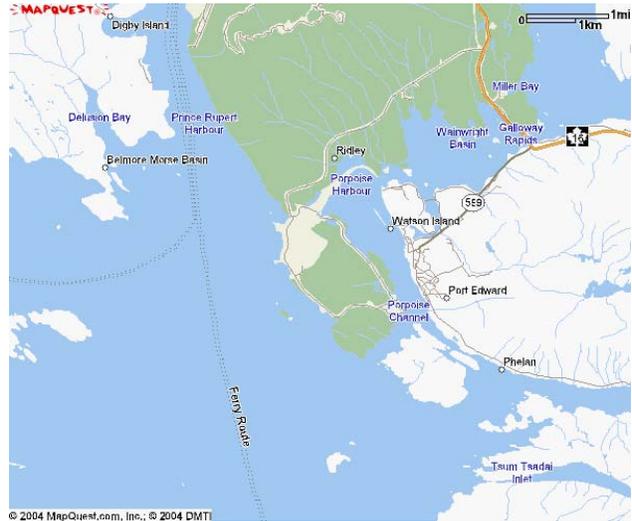
# WestPac LNG Facility

**Canada Location:** The WestPac LNG Facility would be located on 100 hectares of industrial land on Ridley Island, British Columbia.

**Owner/Website:** WestPac Terminals, Inc., [<http://www.westpaclng.com>].

**Project Contact:** Mark Butler  
President with WestPac;  
(403) 770-6037  
[[Mbutler@WestPacLNG.com](mailto:Mbutler@WestPacLNG.com)].

**Description:** The import facility would have one storage tank, dock facilities, gas treating and a small regasification plant. There will also be trans-shipment facilities to transport the LNG to other markets. No new pipelines will be needed.



**Average Natural Gas Production Capacity:** 300 million cubic feet per day.

**Peak Natural Gas Production Capacity:**

**LNG Storage Capacity:** 160,000 to 180,000 cubic meters (one tank).

**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 \$350 million

**Projected On-Line Date:** 2011

**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](http://www.westpaclng.com/docs/ProjectDescription.pdf)] with the Prince Rupert Port Authority, formally beginning the regulatory review and environmental assessment process for the project.

#### **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](http://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](http://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). [[www.pwlng.com](http://www.pwlng.com)].

**Project Contact:** Spiro Vassilopoulos, Chief Executive Officer, (801) 550-1028, [[vassilopoulos@pwlng.com](mailto: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](http://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](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](http://www.tdn.com/articles/2006/03/11/area_news/news06.txt)].

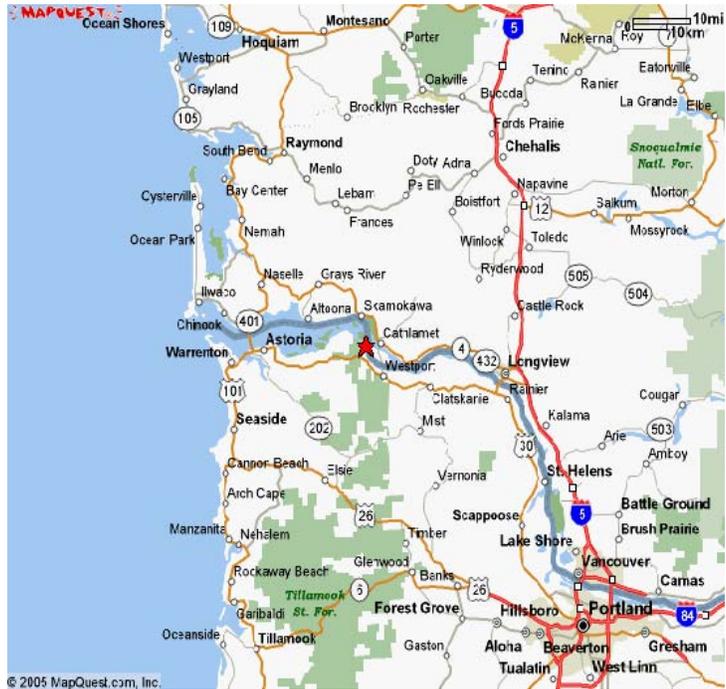
# Northern Star LNG Facility

**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](http://www.northernstar-lng.com)].

**Project Contact:** Gary Coppedge, Vice President, Permitting and Development, (505) 532-5000, [grocoppedge@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

June 2007

California Energy Commission  
[www.energy.ca.gov](http://www.energy.ca.gov)

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.
- 6/15/06 – 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.

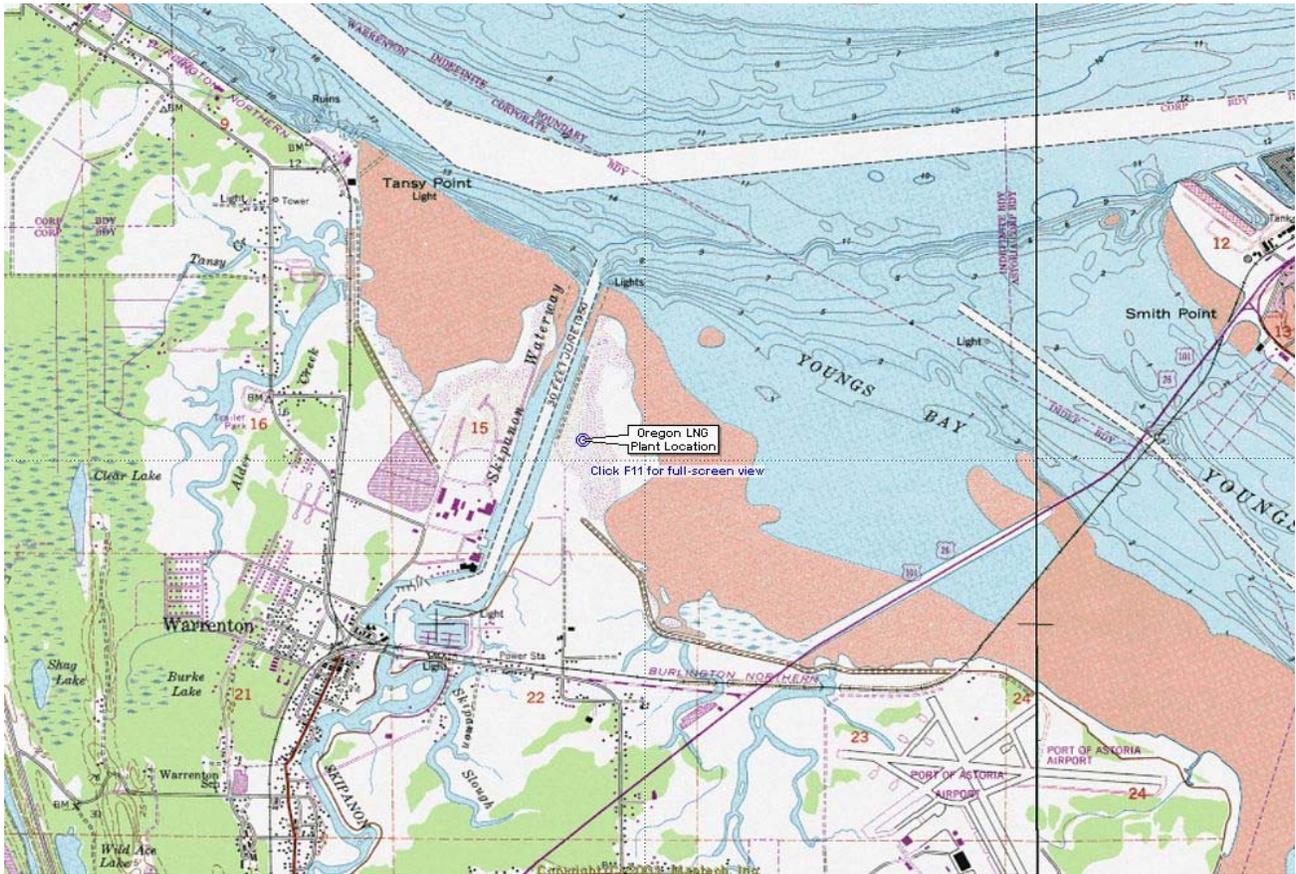
### **Sources of Information:**

- The Daily Astorian, 3/12/07, <http://www.dailyastorian.info/main.asp?SectionID=23&SubSectionID=783&ArticleID=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](http://www.voy.com/151230/2046.html)].
- Oregon Energy Facility Siting Council, [[http://egov.oregon.gov/energy/siting/review.shtml#Northern\\_Star\\_Natural\\_Gas](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](http://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](http://www.oregonlng.net)]

**Project Contact:** Peter Hansen (503) 298-4969; Mohammed Alrai (503) 298-4967 [[Mohammeda@oregonlng.com](mailto: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 will be used as the heat source for regasification.

**Average Natural Gas Production Capacity:** 1,000 million cubic feet per day. And expandable to 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 (3<sup>rd</sup> 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 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).
- 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.

#### **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](http://www.portofastoria.com/developmentprojects/sngf.html)].
- Project Website: [[www.oregonlng.net](http://www.oregonlng.net)].

# Jordan Cove Energy Project

**Oregon Location:** The Jordan Cove Energy Project would be located on the bay side of the North Spit of Coos Bay, Oregon, about six miles north of the entrance of the bay.

**Owner/Website:** Fort Chicago Energy Partners L.P.,  
[[www.jordancoveenergy.com](http://www.jordancoveenergy.com)].

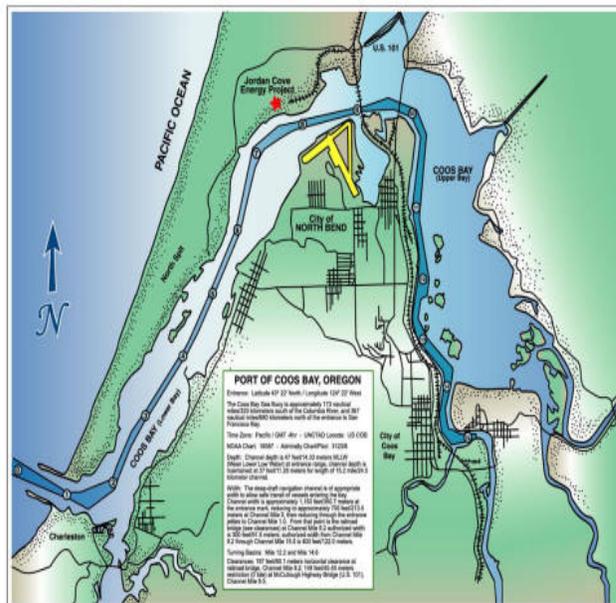
**Project Contact:** Robert L. Braddock,  
(541) 266-7510,  
[[info@jordancoveenergy.com](mailto:info@jordancoveenergy.com)].

**Description:** The proposed receiving terminal would include consisting of two full-containment LNG storage

tanks, each with a capacity 160,000 m<sup>3</sup> (or 1,006,000 barrels). Each tank would be equipped with two can-type fully submerged LNG in-tank pumps with an individual capacity rate of 5,300 gallons per minute (gpm). There will be a 37 megawatt, natural gas-fired, simple cycle combustion turbine power plant in addition to the projects connection to Pacific Power. This facility would come with a single LNG ship unloading slip/berth, dredged from an upland adjacent to Coos Bay. There would be an LNG unloading system at the berth, consisting of three 16-inch-diameter unloading arms and one 16-inch-diameter vapor return arm, with a unloading capacity rate of 12,000 cubic meters per hour (m<sup>3</sup>/hr).

As proposed, the project would connect with the Pacific Connector Gas Pipeline (Pacific Connector). This is a 223-mile natural gas line that would connect the proposed Jordan Cove Liquefied Natural Gas terminal in Coos Bay, OR to Williams' Northwest Pipeline system near Myrtle Creek, OR, and to the Pacific Gas & Electric Company's backbone system near Malin, OR. Other potential interconnects include the Tuscarora gas transmission system and the Gas Transmission Northwest. Additional information on the proposed pipeline may be found at the owner's website as follows: <http://www.pacificconnectorgp.com/>

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



**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 – Jordon 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 Jordon Cove.

### **Sources of Information:**

- Jordan Cove Project website [[www.jordancoveenergy.com](http://www.jordancoveenergy.com)].
- "Pipeline Deal Under Review, County Could See Nearly \$2M," September 23, 2004, [[www.jordancoveenergy.com/923world.pdf](http://www.jordancoveenergy.com/923world.pdf)].
- "Panel Advises Getting More LNG Information", November 15, 2004, [[www.theworldlink.com/articles/2004/11/15/news/news02.prt](http://www.theworldlink.com/articles/2004/11/15/news/news02.prt)].
- Oregon Energy Facility Siting, [[www.egov.oregon.gov/energy/siting/review.shtml#top](http://www.egov.oregon.gov/energy/siting/review.shtml#top)].

# Cabrillo Deepwater Port LNG Facility



**California Location:** The Cabrillo Deepwater Port LNG Facility project would be located approximately 14 miles from shore, 21 miles from Anacapa Island and 18 miles from the boundary of Channel Island Marine Sanctuary off the coast of Ventura County.

**Owner/Website:** BHP Billiton, [<http://Ingsolutions.bhpbilliton.com>]. The U.S. Coast Guard and State Lands Commission have developed a website for this project at [<http://www.cabrilloport.ene.com/>].

**Project Contact:** Rick Abel, (805) 604-2790, [[Rick.Abel@BHPBilliton.com](mailto:Rick.Abel@BHPBilliton.com)].

**Description:** This import facility (floating storage and regasification unit) would be permanently moored about 14 miles offshore and would only be visible from elevated locations. The maximum water depth at the mooring would be about 2,900 feet. This facility would include three independent Moss spherical storage tanks mounted within the hull, accommodations for personnel, ship berthing and mooring system, and eight vaporizers for regasification. At the mooring point, three 14-inch flexible mooring riser pipes and a pipeline end manifold on the sea floor would connect to a new underwater, 21.1-mile, 30-inch pipeline. This pipeline would be buried as it approaches shore north of the Ormond Beach Generating Station in Ventura County and would connect to a Southern California Gas Company pipeline. No extensive onshore facilities would be constructed for this project.

**Average Natural Gas Production Capacity:** 800 million cubic feet per day.

**Peak Natural Gas Production Capacity:** 1,500 million cubic feet per day.

**LNG Storage Capacity:** 6 billion cubic feet total.

**Tentative LNG Sources:** Australia. (Sources of LNG are tentative until the final contract is signed.)

**Possible Markets:** Distribution throughout the Southern California Region.

**Approximate Project Cost:** \$550 million

**Projected On-Line Date:** 2012 – 2013

**Siting Process:** A joint EIS/EIR will be prepared with the U.S. Coast Guard as NEPA (federal) lead agency and the State Lands Commission as CEQA (state) lead agency. Other permitting state agencies include the California Coastal Commission which must evaluate the project's consistency with the federal Coastal Zone Management Act. The Governor has the authority to approve, approve with conditions, or veto the proposed project. Local permitting agencies include City of Oxnard, County of Ventura, and the Ventura County Air Pollution Control District. Under the Deepwater Port Act, the U.S. Coast Guard has less than one year to evaluate and reach a decision about project acceptability.

**Lead Federal Agency:** United States Coast Guard. For docket materials, go to the Department of Transportation's web site at [<http://dms.dot.gov/search/searchFormSimple.cfm>] and enter Docket Number 16877.

**Lead State Agency:** State Lands Commission, [[www.slc.ca.gov/Division\\_Pages/DEPM/DEPM\\_Programs\\_and\\_Reports/BHP\\_DEIS-R.htm](http://www.slc.ca.gov/Division_Pages/DEPM/DEPM_Programs_and_Reports/BHP_DEIS-R.htm)].

**Status:**

- 1/27/04 – The US Coast Guard accepted BHP Billiton's application as complete.
- 2/24/04 – Both federal and state agencies filed a Notice of Intent/Notice of Preparation of a Draft EIS/EIR.
- 3/15-16/04 – Public scoping meetings were held in Oxnard and Malibu.
- 4/16/04 – The USCG/MARAD clock was stopped due to data gaps and EPA permitting issues.
- 5/25/04 – Scoping Summary posted.
- 9/3/04 – The regulatory clock was restarted.
- 10/14/04 – The State Lands Commission deemed the application complete.
- 11/5/04 – EIR/EIS released to the public. Three hearings were held in Southern California on this project.
- 1/11/05 – A Suspension of Statutory Timeline (clock) and Request for Information was filed by the USCG/MARAD. Pending the receipt of additional information, this may cause a delay in the permitting process by about 4 to 6 months.
- 3/13/06 – Revised draft EIR released.
- There has been a process change to include the use of a closed loop system.
- August 3 will mark the end of the Public comment period.
- Final EIS/EIR was issued on March 9' 2007

[<http://www.cabrilloport.ene.com/final/default.htm>].

- The U.S. Coast Guard and Maritime Administration held a hearing on April 4<sup>th</sup> in Oxnard.
- The State Lands Commission held a public hearing on April 9, 2007 to certify the EIR and to determine if the project should be granted a lease on lands.
- The California Coastal Commission held a hearing in Santa Barbara on April 12 to review the project's consistency with California's Coastal Zone Management Plan.
- The U.S. National Marine Fisheries Service requested more information about how the project could minimize potential harm to protected species.
- 3/15/07 - BHP Billiton postpones In-Service date for proposed Cabrillo Port LNG Terminal.
- On April 9, 2007 the California State Lands Commission voted against a 30-year lease for the project and would not certify that the project's environmental impact report met the requirements of the California Environmental Quality Act.
- On April 12, 2007 the California Coastal Commission found the project inconsistent with California's Coastal Zone Management Plan.
- The Governor's decision clock ends on May 21, 2007.
- On May 18, 2007 California Governor Arnold Schwarzenegger issued a letter to the Maritime Administrator disapproving BHP Billiton's Cabrillo Port LNG Project.

### **Sources of Information:**

- "Deepwater Port License Application for BHP Billiton Deemed Complete by U.S. Coast Guard/Maritime Administration," [[www.bhpbilliton.com/bb/investorsAndMedia/newsAtBhpBillitonDetail.jsp?id=News%2F2004%2FNews%40BHPBilliton290104.html](http://www.bhpbilliton.com/bb/investorsAndMedia/newsAtBhpBillitonDetail.jsp?id=News%2F2004%2FNews%40BHPBilliton290104.html)], accessed 2/8/06.
- Cabrillo Port Liquefied Natural Gas Deepwater Port, [[www.cabrilloport.ene.com](http://www.cabrilloport.ene.com)].
- [[www.platts.com](http://www.platts.com)]

# Clearwater Port LNG Project

**California Location:** The Clearwater Port Project would be located approximately 12.6 miles offshore of the City of Oxnard, Ventura County in the Santa Barbara Channel.

**Owner/Website:** Northern Star Natural Gas inc.

Website:

<http://www.clearwaterport.com/>

**Project Contacts:**

Simon Poulter, Environmental Manager,  
[spoulter@padreinc.com]  
(805) 683-1233



**Description:** Clearwater Port would use existing offshore Platform Grace to import liquefied natural gas (LNG). Reconfiguration of the platform would involve installing an LNG transfer system, a cool down system, six LNG pumps, six LNG vaporizers (ambient air), and reinstalling and upgrading the platform's power-production capability. LNG would be transported by ship to Platform Grace, where it would be converted back into vapor form. A new SPP floating dock would be installed adjacent to the platform to safely moor LNG vessels during transfer. No additional on-site storage is expected, but if required, NorthernStar would contract with existing onshore storage facilities.

The natural gas would be delivered from the platform to shore in a new, 13-mile, 32-inch subsea pipeline, using an existing pipeline corridor to minimize disturbance to the marine environment. The natural gas would come onshore by pipeline to a landing at an existing industrial site, the Mandalay Power Generating Station in Oxnard. From the landfall at Mandalay, a new 12-mile underground pipeline would tie into an existing 30-inch Southern California Gas Company pipeline at their preferred pipeline tie-in point near Camarillo.

**Average Natural Gas Production Capacity:** 1.2 Bcf/d (billion cubic feet/day).

**Peak Natural Gas Production Capacity:** 1.4 Bcf/d peak.

**Tentative LNG Sources:** Alaska, Southeast Asia, and Australia. Sources of LNG are tentative until the final contract is signed.

**Possible Markets:** Southern California

**Approximate Project Cost:** \$300 million

**Projected On-Line Date:** Late 2009

**Siting Process:** 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. Local permitting agencies include City of Oxnard, County of Ventura, and the Ventura County Air Pollution Control District.

**Status:**

- 1/28/04 – Crystal Energy filed its application with the U.S. Coast Guard.
- 2/10/04 – Application filed with the State Lands Commission.
- 7/27/04 – Application was re-filed with U.S. Coast Guard.
- 7/29/04 – Application re-filed with State Lands Commission.
- 1/27/05 – Crystal Energy submitted responses to agency comments.
- 2/25/05 – State Lands Commission staff found that Crystal Energy's application remained incomplete. A date-specific review schedule will not be determined until a complete application has been accepted. The applicant is actively working on additional studies and providing the additional data. A completed application is expected in the third quarter of 2006.
- 6/26/05 – Woodside Energy ended an agreement to jointly develop the Crystal project.
- 5/22/06 – NorthernStar Natural Gas Announces Successful Funding for Development for Clearwater Port and an Oregon-based LNG Terminal; Projects Fully Funded Through Development Stage.
- 6/26/06 – The terminal would use ambient air vaporizers and on-site power generation with waste heat recovery.
- 6/30/06 – Clearwater Port files Updated Deepwater Port Application.
- The final structural report is expected to be released during early May 2007.

- 5/15/07 – Clearwater Port issues a press release stating it will hold itself to higher air quality standards.
- 5/17/07 – Clearwater Port has issued the Platform Grace Structural Inspection Report to the California State Lands Commission.

**Sources of Information:**

- Clearwater Port website, [www.crystalenergyllc.com]
- [<http://www.clearwaterport.com/> ]

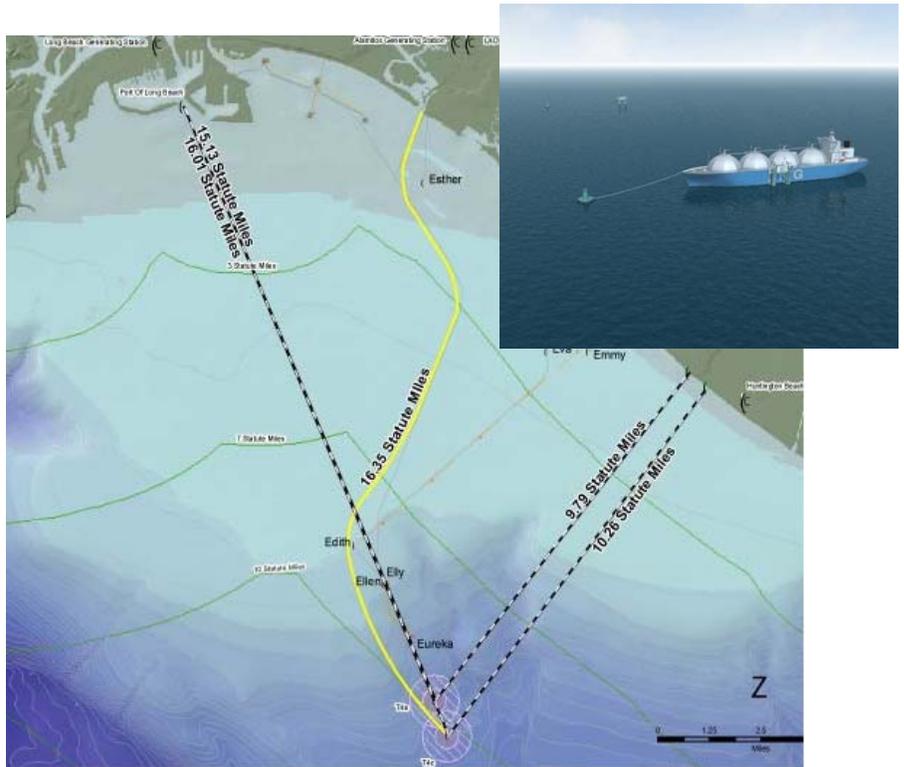
# Esperanza Energy, Port Esperanza

**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](http://www.esperanza-energy.com)]

**Project Contact:** Dave Maul, (530) 304-8096,  
[[dave@maulenergyadvisors.com](mailto: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. Esperanza plans to formally file its application in October 2007.

**Source of Information:**

- [[www.esperanza-energy.com](http://www.esperanza-energy.com)]

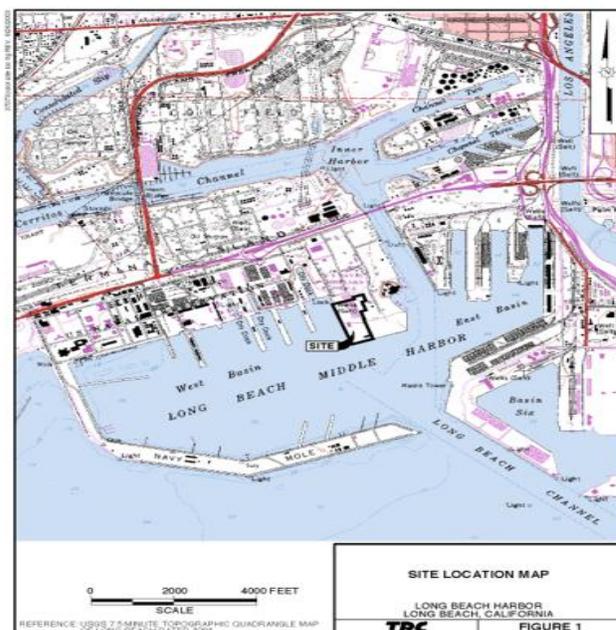
# Long Beach LNG Facility

**California Location:** The Long Beach LNG Facility project would be located on Pier T, Berth 126, on Terminal Island in the Port of Long Beach, Los Angeles County. It would occupy approximately 27 acres.

**Owner/Website:** Sound Energy Solutions, a subsidiary of Mitsubishi Corporation and ConocoPhillips. [[www.soundenergysolutions.com](http://www.soundenergysolutions.com) ]

**Project Contact:** Thomas E. Giles, (562) 495-9875, [thomasegiles@earthlink.net].

**Description:** This import facility would include an offloading dock for the berthing of an LNG ship, two 160,000 cubic meter LNG storage tanks, an LNG vehicle fuel tank, vaporization facilities, a natural gas liquids (NGL) recovery unit, a natural gas sendout pipeline, NGL send-out pipelines, and LNG truck loading facilities on Pier T. A new 2.3-mile natural gas pipeline connecting to an existing Southern California Gas Company pipeline will also be constructed.



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

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

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

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

**Possible Markets:** Southern California non-core customers, including electricity generators; municipal and investor-owned utilities, and, LNG vehicle fleets.

**Approximate Project Cost:** \$450 million

**Projected On-Line Date:** 2009 (SES would need four years to complete construction from date of FERC approval).

**Siting Process:** SES participated in FERC's pre-filing process during which FERC

and the Port of Long Beach filed a Notice of Intent to Prepare a Joint EIS/EIR on 9/22/03 followed by a supplemental notice on 11/10/03. The SES application to FERC was accepted on 1/26/04. A joint draft EIS/EIR with FERC as NEPA lead agency and Port of Long Beach as CEQA lead agency for the LNG terminal was released October 2005. The Public Utilities Commission has asserted jurisdiction, requiring terminal developers to apply for a Certificate of Public Convenience and Necessity. The POLB and California Coastal Commission will evaluate the project's consistency with the Port Master Plan, the California Coastal Act, and federal Coastal Zone Management Plan. Amendment to the Port Master Plan must precede Port of Long Beach approval of a site lease.

**Lead Federal Agency:** Federal Energy Regulatory Commission, [[www.ferc.gov/for-citizens/projectsearch/SearchProjects.aspx](http://www.ferc.gov/for-citizens/projectsearch/SearchProjects.aspx) ]. Please see ACROBAT PDF file for [Instructions for accessing FERC website](#) . 1 pg, 69 kb, Docket Number CP04-58.

**Lead State Agency:** Port of Long Beach, [[www.polb.com/about/issues\\_reports/default.asp](http://www.polb.com/about/issues_reports/default.asp) ], Application No. HDP03-079.

#### **Status:**

- 10/14/03 – Joint federal-local port hearing held to consider preliminary environmental review.
- 1/23/04 – Transferred from pre-filing to filing stage.
- 7/13/04 - A site visit and technical conference were held in Long Beach.
- 10/7/05 - A draft joint environmental review document was released (FERC Docket No. CP04-58). A final EIS/EIR is expected in February 2007.
- June 2006 - The Coast Guard has completed the Water Suitability Report (WSAR) and sent it to FERC.
- December 2006 – The Long Beach Port Authority is still waiting for direction from city officials before completing the environmental review process.
- 1/23/07 - In a unanimous vote, the Long Beach Board of Harbor Commissioners decided to end an environmental review of the project thus canceling the plans for a liquefied natural gas terminal.
- 2/8/07 - Sound Energy Solutions filed a Writ of Mandate asking a state judge to have the port of Long Beach complete its environmental review.
- 3/1/07 - California environmental groups resubmitted a request that FERC halt consideration of the LNG terminal proposed by Sound Energy Solutions.

#### **Sources of Information:**

- Sound Energy Solutions website, [[www.soundenergysolutions.com](http://www.soundenergysolutions.com)].
- Federal Energy Regulatory Commission, [[www.ferc.gov](http://www.ferc.gov)].

# Ocean Way LNG Terminal



**California Location:** The Ocean Way LNG Terminal project would be located in the Pacific Ocean about 22 miles south of Los Angeles, California.

**Owner/Website:** Woodside Energy, Inc.  
[www.oceanwaysecureenergy.com](http://www.oceanwaysecureenergy.com)

**Project Contact:** Rob Male,  
(310) 264-4400, 2425 Olympic Blvd., STE 4030W Santa Monica, CA 90404.

**Description:** The project will be a ship mooring facility. The LNG will be regasified while still on board ship, transported through a

flexible connection to an underwater natural gas pipeline that comes onshore at the Los Angeles International Airport, and connected to the Southern California Gas Company delivery network. The proposed site is to be located 20 miles off the coast of California at Los Angeles. The project calls for the use of ambient air vaporizers.

**Average Natural Gas Production Capacity:** 400 Mmcf/d – Stage 1  
Market Demand – Stage 2  
0.9 Bcdf/d – Stage 3

**Peak Natural Gas Production Capacity:** 1.1 Bcf/d

**LNG Storage Capacity:** None

**Tentative LNG Sources:** Australia. (Sources of LNG are tentative until the final contract is signed.)

**Possible Markets:** Southern California.

**Approximate Project Cost:**

**Projected On-Line Date:** 2011.

**Siting Process:** Woodside Natural Gas submitted an application to the United States Coast Guard for a Deepwater Port license and to the City of Los Angeles for a pipeline franchise permit. A joint EIS/EIR will be prepared by a consultant with the U.S. Coast Guard as the NEPA (federal) lead agency and the City of Los Angeles as the CEQA lead agency. Other permitting state agencies include the California Coastal Commission which must evaluate the project's consistency with the federal Coastal Zone Management Act. The Governor has the authority to approve, approve with conditions, or veto the proposed project. Under the Deepwater Port Act, the U.S. Coast Guard has less than one year to evaluate and reach a decision about project acceptability.

**Status:**

- 1/18/06 – Woodside Energy announced a project involving special LNG tankers to regasify the LNG on board for direct delivery into pipelines. The location was still being considered.
- 3/15/06 – Proposed site announced to be in the Pacific Ocean 22 miles south of Malibu, California. Applications are expected to be filed within 60 days.
- 8/18/06 – Woodside Natural Gas Submits Deepwater Port Application to U.S. Coast Guard and City of Los Angeles (pipeline franchise permit).
- Woodside has released a project description and can be accessed at the following link:  
[<http://www.oceanwaysecureenergy.com/projectdescription.html>].
- Applications are yet to be deemed complete until a custody transferal site has been agreed upon by SoCal Gas and Woodside.
- A consultant has been retained to prepare the EIS/EIR.

**Sources of Information:**

- Woodside Energy, Inc., Natural Gas Press Release, [[www.woodside.com.au/home.htm](http://www.woodside.com.au/home.htm)].
- "Natural Gas Terminal Off Coast is Proposed," by Marc Lifsher, L.A. Times, March 15, 2006, [[www.latimes.com/business/la-fi-Ing15mar15,1,1802724.story](http://www.latimes.com/business/la-fi-Ing15mar15,1,1802724.story)].
- Project website: [[www.oceanwaysecureenergy.com](http://www.oceanwaysecureenergy.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](http://www.sempra.com/index.htm)].

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

**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:**

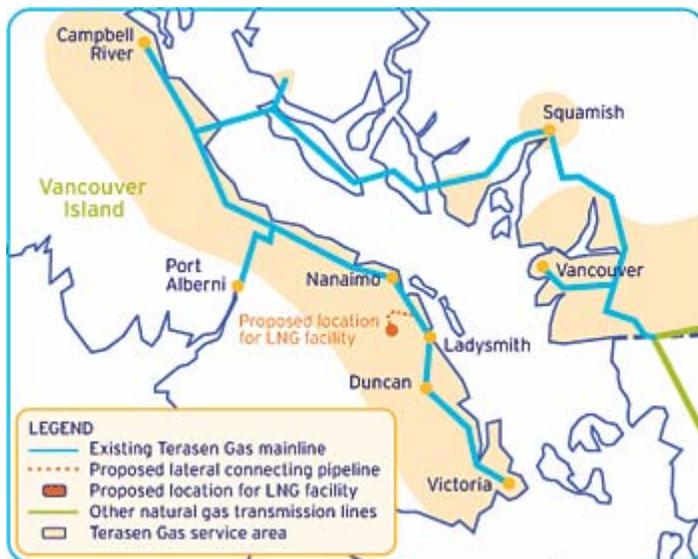
- El Paso Corp. and DKRW Energy LLC has received three environmental permits from the Mexican Federal Ministry of the Environmental and Natural Resources (SEMARNAT).
- El Paso and DKRW are now attempting to secure LNG suppliers.

- 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



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 up to 69,000 m<sup>3</sup>.

Start Up: 2009 (if approved)

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.

Source of Information:

- <http://www.terasengas.com/AboutUs/NewAndOngoingProjects/VancouverIsland/MtHayesStorageProject/default.htm>

