

Chevron and Woodside are leading the way in Canada's emerging liquefied natural gas (LNG) industry.

The proposed Kitimat LNG project is a 50/50 co-venture of Chevron and Woodside Canada from the resource development phase and gas pipeline transportation, to LNG liquefaction, and shipping to end customers. This includes Chevron-Woodside's ownership in a world class natural gas resource at the Liard and Horn River basins in northeastern British Columbia that will provide the necessary gas supply to the Kitimat LNG facility.

The Kitimat LNG project is planned to include a twotrain LNG facility, and has a 20 year, 10 million-metrictonne-per-year LNG export license from the National Energy Board. It also has all major provincial and federal environmental assessment and LNG export certificates in place.

Chevron is the operator of the project downstream components, including the natural gas Pacific Trail Pipeline and LNG plant, as well as the operator of the project upstream resource assets in the Liard and Horn River basins in northeastern B.C.

Since 2011, early works have been underway on the facility site, the Bish Forest Service Road and proposed Pacific Trail Pipeline right-of-way. These significant investments have already provided hundreds of thousands of employment hours and millions of dollars invested in local businesses.

#### **CURRENT STATUS**

- Kitimat LNG is currently in the Front End Engineering and Design (FEED) phase that will determine the engineering and design of the LNG facility and natural gas Pacific Trail Pipeline.
- An appraisal program of the project's upstream assets in the Liard and Horn River basins in northeastern B.C. is currently underway.
- All key federal and provincial government permits are in place for the project as well as a 20-year National Energy Board permit to export 10 million tonnes of LNG each year.
- Early site preparation work for the LNG facility began at Bish Cove, near Kitimat, in 2011. Full construction will begin once a final investment decision (FID) is made.
- An FID for the Kitimat LNG Project is dependent on finalizing engineering and design work, establishing a stable and competitive fiscal framework from government, gaining additional First Nations support, and securing firm LNG sales agreements.







The Kitimat LNG project has been under development since 2008 and received its federal Environmental Assessment (EA) approval in December of that year. The project's provincial Environmental Assessment approval was granted in January 2009, and in 2010 the Haisla Nation approved the lease of their land at Bish Cove to Kitimat LNG. Early engineering and site preparation work began at Bish Cove and along the Bish Forest Service Road in 2011.

The proposed natural gas Pacific Trail Pipeline received its Environmental Certificate from the BC Environmental Assessment Office in 2008. In 2011, the PTP Limited Partnership acquired the pipeline from Pacific Northern Gas. Early works, including right-of-way clearing, road construction and geotechnical surveying, began on the western portion of the pipeline in 2012. Chevron became operator of the Pacific Trail Pipeline in 2013.

In January 2015, the Moricetown Indian Band became the 16th and final First Nation to join the First Nations Limited Partnership. The Pacific Trail Pipeline is the first natural gas pipeline for an LNG project in B.C. to have the support of all First Nations bands whose traditional territories are along the proposed pipeline route.

Woodside Energy International (Canada) Limited (Woodside Canada) purchased Apache's 50% interest in the Kitimat LNG project and became co-venturer in the project in 2015. As part of this agreement, Chevron also assumed operatorship of the upstream natural gas assets in the Liard and Horn River Basins in May 2015.

#### QUICK FACTS ABOUT KITIMAT LNG

- All major provincial and federal environmental approvals in place
- National Energy Board Export permit in place for up to 10 million tonnes of LNG per year
- Benefits agreement with all 16 First Nation bands along the proposed Pacific Trail Pipeline
- Projected number of LNG shipments from Bish Cove: 10-14 per month
- The construction of the LNG facility and Pacific Trail Pipeline will create an estimated 4,500 jobs that will be filled by British Columbians first





#### **Economic Benefits**

Kitimat LNG has the potential to be the largest capital investment in an energy project in Canadian history.

British Columbians will benefit from the Kitimat LNG Project for decades to come. Benefits such as employment, skills training, contracts for goods and services to local businesses and provincial revenues have already begun. These benefits will increase significantly once a final investment decision to build the project is made.

In addition to tax and royalty benefits to the B.C. government, federal taxes, major economic opportunities, skills training and investment in local communities will continue throughout the entire life of the project.

#### PROVIDING EMPLOYMENT OPPORTUNITIES

- More than 1,500 people have been employed on the Kitimat LNG project.
- When a final investment decision is made and construction begins on the facility and Pacific Trail Pipeline, an estimated 3,000 people will be employed in facility construction and another 1,500 on the pipeline. Chevron is committed to hiring British Columbians first for all employment opportunities.
- Additional jobs will be created in the upstream natural gas resource development process in northeastern B.C.

#### First Nations Benefits

First Nations are partners in the Kitimat LNG project and Pacific Trail Pipeline.

Benefits agreements have been signed with the Haisla Nation for the use of their land for the LNG facility at Bish Cove and with all 16 First Nations bands whose territories are along the proposed Pacific Trail Pipeline route.

These agreements are unique among any of the proposed LNG export projects in Western Canada.

The First Nations Limited Partnership (FNLP) for the Pacific Trail Pipeline ensures First Nations receive benefits and have direct access to the opportunities presented by the proposed Kitimat LNG project and Pacific Trail Pipeline.

Chevron's goal in working with First Nations is to ensure the project is built in a manner that, above all, protects people and the environment.

#### **FNLP BENEFITS SO FAR**

- 1,600 First Nations individuals have taken skills and employment training through the Pacific Trail Pipeline Aboriginal Skills to Employment Partnership (PTP ASEP) program.
- First Nations employment accounts for more than 54% of all construction hours worked so far on the Pacific Trail Pipeline project.
- FNLP members' businesses have received more than \$245 million in construction contracts, representing more than 65% of all construction contracts so far on the Pacific Trail Pipeline.
- 82% of all contracts for the LNG facility preconstruction activities have gone to Haisla Nation businesses.









#### What is LNG?

Liquefied natural gas (LNG) is the same natural gas that is delivered by pipelines each day to hundreds of thousands of homes across British Columbia. It's the same gas that heats our homes, cooks our food on gas ranges and is used to produce electricity in many parts of Canada.

In fact, LNG is actually natural gas that has been chilled to -161 degrees Celsius where it changes from a gas into a clear, odourless liquid.

Liquid form is the safest way to transport natural gas to overseas markets. Not only does it take up less space – 1/600th of its original volume – LNG can be stored in tanks on specially designed LNG carriers and safely shipped to overseas customers. Once it has arrived at its destination, the LNG is warmed so that it becomes a gas again and is distributed by pipeline to customers. The world's largest LNG importers are currently Japan and South Korea.

#### LIQUID NATURAL GAS FACTS

- Natural gas is the cleanest-burning fossil fuel. It creates fewer greenhouse gasses and airborne emissions than coal and oil. By replacing those fuels, it can result in 45% fewer GHGs then coal and 30% fewer than oil and just a fraction of the airborne emissions.
- Unconventional natural gas extracted through hydraulic fracturing has 40% fewer emissions than coal when the entire lifecycle from the point of extraction to end use is taken into account.
- LNG is odourless, non-corrosive, and non-toxic.
   If there were to be a release of LNG, it would not mix with water or soil and would quickly turn into a gas again and dissipate into the atmosphere.
- The LNG industry has an excellent safety record and has been shipped safely around the world, without a major safety or environmental incident for more than 50 years and 77,000 voyages.

## **Producing Natural Gas Safely**

Natural gas extracted from unconventional resource deposits using hydraulic fracturing has become a significant new global energy source. Hydraulic fracturing is not new. It has been used to recover oil and gas in Western Canada for over 60 years with a solid safety record and continually improving environmental performance. More than 175,000 wells have been fractured safely in Western Canada over the last 60 years.

The Kitimat LNG project's Liard / Horn River Resources upstream operations will involve the appraisal and development associated with Chevron-Woodside interests in the Liard (395,000 acres) and Horn River (220,000 acres) basins in northeastern British Columbia. This includes drilling, seismic, facilities, and production operations. These very significant natural gas resources will provide sufficient natural gas supply to the proposed Kitimat LNG export facility for decades to come.

Kitimat LNG will safely and responsibly develop Canada's unconventional resources while ensuring the highest level of environmental protection. This includes reducing water use, safeguarding groundwater and the use of hydraulic fracturing fluids with the smallest possible environmental impact.

As operator of the upstream resources, Chevron is committed to ongoing community consultations, engagement with First Nations and participation in industry groups that promote best practices as part of our unconventional resources operations.









Chevron is one of the world's leading integrated energy companies. Our success is driven by our people and their commitment to get results the right way - by operating responsibly, executing with excellence, applying innovative technologies and capturing new opportunities for growth.

At Chevron, our businesses work in concert to provide the energy that drives human progress through our involvement in virtually every facet of the energy industry.

Chevron's goal is to see the Kitimat LNG facility and Pacific Trail Pipeline built in a manner that, above all, protects people and the environment.



## The Chevron Way

The Chevron Way explains who we are, what we do, what we believe and what we plan to accomplish. It establishes a common understanding for our employees and for all who interact with us. At the heart of The Chevron Way is our vision:

To be *the* global energy company most admired for its people, partnership and performance.

#### Our vision means we:

- Safely provide energy products vital to sustainable economic progress and human development throughout the world;
- Are people and an organization with superior capabilities and commitment;
- Are the partner of choice;
- Earn the admiration of all our stakeholders

   investors, customers, host governments,
   local communities and our employees not only for the goals we achieve but how we achieve them;
- Deliver world-class performance.

Our company's foundation is built on our values, which distinguish us and guide our actions. We conduct our business in a socially responsible and ethical manner. We respect the law, support universal human rights, protect the environment and benefit the communities where we work.





The Kitimat LNG project will be designed and built in a manner that reduces emissions, conserves natural resources, and minimizes potential environmental impacts.

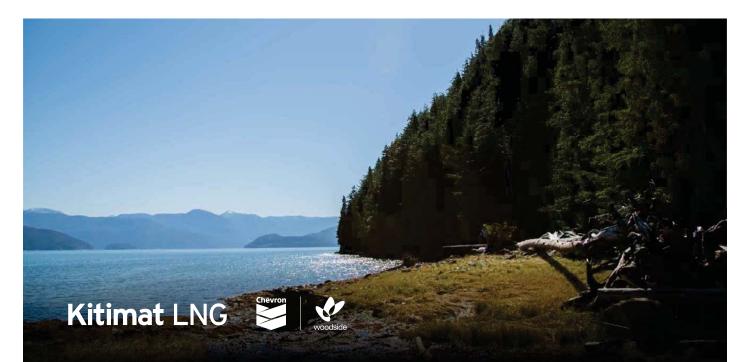
Chevron's LNG projects in Australia are recognized as being among the cleanest in the world. Similar engineering, design and technology applications are being planned for the Kitimat LNG project.

Chevron is an industry leader in developing systems that support a culture of protecting people and the environment. We strive to achieve world-class performance and operate without injury or environmental incidents. We call the system that helps us achieve this "Operational Excellence" (OE). OE defines everything we do from our field work to office environments. Our workforce truly believes that all incidents are preventable and we have policies, processes, tools and behavioral expectations in place to assist in achieving that goal.

#### Kitimat LNG and the environment

The Kitimat LNG Industrial site project at the former Eurocan pulp and paper mill location in Kitimat will be remediated to address historical environmental issues and to upgrade the site to meet or exceed current environmental standards. A new leachate collection system will be installed at the existing landfill site to collect and treat any runoff from the landfill to drinking water quality standards. Further remediation work at the site will allow the project to house a larger work camp, and to store equipment and materials. Utilizing the upgraded landfill will minimize waste disposal at the municipality's existing landfill.

Chevron is committed to safely and responsibly developing Canada's unconventional resources while ensuring the highest level of environmental protection. In the upstream natural gas extraction operations in the Liard and Horn River Basins in northeastern B.C., this includes optimizing efficient water use and its safe disposal, safeguarding groundwater, maintaining well integrity, minimizing operating footprint and using hydraulic fracturing fluids with the smallest possible environmental impact.



# Cecil Ponds Habitat Enhancement Project



The Kitimat LNG Project recently completed construction of an innovative fisheries enhancement program at the Cecil Ponds, located 20 km north of Kitimat. The Cecil Ponds enhancement program was designed to provide new rearing habitat for Coho salmon.

The Cecil Ponds are a series of three old gravel borrow pits that were developed 40 to 50 years ago when the Wedeene Forest Service Road was built. Filled with water over subsequent years, they have not supported fish in the past.



# Managing Fish Habitat

Kitimat LNG completed this habitat enhancement project as part of environmental stewardship commitments made during project approval and permitting. Creation of new habitat for Coho salmon was achieved by providing fish access to the three Cecil Ponds from nearby tributary streams. This will ensure that fisheries productivity in the area is maintained consistent with Department of Fisheries and Oceans habitat policy objectives.

37 potential freshwater habitat enhancement opportunities in the vicinity were considered and the Cecil Ponds best met all the evaluation criteria.











# Increasing Habitat for Salmon

The project involved providing new access via a man-made fishway for fish to travel from the tributary to the largest pond, and then improving access to the other two ponds with the goal of populating all three with juvenile Coho salmon. An estimated 13,000 square metres of new aquatic habitat is now accessible to fish.

The work at Cecil Ponds was conducted by Ledcor-Haisla and was completed in October 2016. Over the coming years, the site will be regularly monitored to ensure that the improvements made to create fish access to this aquatic habitat are functioning as designed.



# Former Eurocan Mill, Industrial Site Reclamation Update - Stack Removal

The former Eurocan pulp and paper mill, or "Industrial Site" as it's now known, is an integral part of the proposed Kitimat LNG project. Since acquiring the site in 2011, Kitimat LNG has been maintaining the site to ensure environmental regulatory compliance as it undertakes a long-term site reclamation program.



The site was zoned for industrial use during the operating life of the Eurocan pulp and paper mill. Since the closure of the facility in January 2010, several structures on the site have deteriorated, necessitating demolition work and ongoing clean-up of the area. KLNG reclamation activities on the site have been in progress since 2012. Most recently, and after extensive planning and preparation, one of four tall steel stacks, the smelt dissolving tank stack, was safely demolished and removed for recycling of the metal.

### Stack Demolition and Removal

Earlier this year, Kitimat LNG personnel detected corrosion defects at the base of the 2 metre diameter, 58 metre tall carbon steel smelt stack structure. Two independent engineering assessments were completed to ascertain safety issues and the structural condition of the stack.

The assessments determined that the stack wall had undergone extensive thinning over its 47 years in service. Temporary repairs to keep it safely erected and delay removal would be of little value to the project as the stack is part of the planned demolition of the site buildings

and structures. The decision was made to remove the stack altogether.

The stack removal involved two cranes with crews positioned on either side of the stack. After the stack was stabilized, the two crane crews worked together to ensure the safe demolition of the structure. One crew cut the stack sections and set the rigging. The other crane crew safely removed and lowered the cut sections to the ground. Each of the six sections was cleaned to remove any residual contaminants from the the inside wall of the stack before being cut into smaller pieces and transfered to offsite metal salvage.





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#### The future of the site

Following the remediation and reclamation of the site, which may take several years, the area will be prepared for future uses associated with the proposed Kitimat LNG Project including:

- Logistics and laydown areas for storing and sorting equipment and materials.
- Establishing workspaces and other facilities for project workers.
- Construction workforce accommodations that will provide living quarters and basic services, helping avoid strain on municipal systems while encouraging workers to support local businesses in the vicinity.







# Kitimat Industrial Site -Summer 2017 Demolition Work Update

The Kitimat Industrial Site is an integral part of the proposed KLNG project. Since becoming operator of the former Eurocan Pulp and Paper mill site in July 2013, Chevron Canada Limited has been engaged in ongoing plans to remediate and re-purpose the site to support infrastructure needed for the future development of the Kitimat LNG plant site at Bish Cove.



## **Decommissioning and Demolition**

As part of Chevron's 2017 work plan, decommissioning and demolition of a small number of structures on the site are taking place. Daily activities involve safely dismantling the structures and the segregation, storage and/or disposal of the related waste materials. The demolition materials are being mainly stored on the site and are not going to the Kitimat Landfill. Scrap iron and steel are being sent to an approved recycling facility. Hazardous wastes are being collected, segregated, contained and transported off site to permitted hazardous waste disposal facilities.

Other activity now being conducted on the site includes ongoing environmental studies and surveys to support planning for remediation the future reclamation work.

Preparations for the demolition activity began in early June 2017 and plans call for the work to be completed later this year. As always, Chevron's goal is to conduct these operations safely while also protecting the environment and limiting any off-site impacts.

Athough this has been a heavy industrial site

**Kitimat** LNG





for many years, measures being taken by the Kitimat LNG project team to minimize local impacts of the demolition work include:

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- Noise Several large pieces of heavy equipment are being used (i.e. excavators, rock trucks, skid steers, hydraulic shears) that may create incremental noise. Sound levels from these operations is expected to be temporary and of a low level.
- Fire Protection Chevron has developed a fire protection plan and submitted it to the District of Kitimat. Any work that may involve a source of ignition (hot work) is expected to be minimal.
- Dust Water trucks will be used to suppress dust levels as needed.
- Traffic Work-related vehicle movements are not expected to affect local traffic flow. Additionally, most of the demolition waste materials will be stored on-site to reduce the need for regular hauling to and from the site

For further information about the Industrial Site and our ongoing reclamation and remediation activities, please visit the Kitimat LNG project website at chevron.ca/KitimatLNG or contact us at KitimatLNGfeedback@chevron.com.

# Home Sweet Home Kitimat LNG Team Successfully Relocates Osprey Nest





In early 2017, Chevron Canada's Kitimat LNG Project team successfully relocated an osprey nest that had been found at the Kitimat Industrial Site - now part of the proposed Kitimat LNG project.

The operation was undertaken to protect the beautiful raptors from noise and human activity taking place as part of the ongoing reclamation work on the site.

The mating pair of ospreys initially built their nest in 2011 on top of an existing metal light pole. Their preferred location was the highest point in the area and close to the Kitimat River, where the birds of prey hunt for fish.

With ongoing maintenance and demolition of existing infrastructure on the former industrial site being planned, it was decided that it would be in the best interest of the ospreys and their young to move their nest to a quieter spot on the perimeter of the site, away from noise and human activity.

Throughout the process, Chevron shared information and sought feedback on the nest relocation plan with the Haisla Nation, the band government of the local Haisla people, and the Kitimat Valley Naturalists, a local environmental organization.

Mr. and Mrs. Osprey's new home is situated atop a 27-metre-high pole, three metres





taller than the previous perch, and features a customized aluminum platform to safely secure the osprey's original nest.

After returning in the spring from their winter migration, the mating pair have taken up residence in their new home. A monitoring program has also been put place during the nesting season to confirm the successful relocation of our fine, feathered friends.











