

B.C. Natural Gas Workforce Strategy and Action Plan

PRODUCED ON BEHALF OF THE
B.C. Natural Gas Workforce Strategy Committee
July 2013



Petroleum
Human Resources
Council of Canada



Acknowledgements

The Petroleum HR Council and Resource Training Organization (RTO) gratefully acknowledges the B.C. Natural Gas Workforce Strategy Committee for their contribution to this work:

- Bob Affleck – Spectra Energy Corp.
- John Amos – Haisla First Nations
- Elizabeth Aquin – Petroleum Services Association of Canada
- Elio Artuso – Apache Corporation
- Tessa Gill – Pacific NW LNG
- Cheryl Knight – Petroleum Human Resources Council of Canada – a division of Enform Canada
- Jon Koop – Trinidad Drilling Ltd.
- Manley McLachlan – B.C. Construction Association
- Randall Gerlach – B.C. Ministry of Advanced Education, Innovation and Technology
- Ines Piccinino/Kursti Calder – B.C. Ministry of Energy & Mines
- Doug MacLaren/Victoria Pazukha – Resource Training Organization
- Ziad Saad – Canadian Energy Pipeline Association
- Clyde Scollan – B.C. Construction Labour Relations
- Murray Slezak – Shell Canada Limited
- Geoff Stevens – Chair of B.C. Natural Gas Workforce Strategy
- Joan Westran – B.C. Ministry of Jobs, Tourism & Skills Training
- Kathleen Williams – BG Group

Thanks to the many contributors to this document including Creative Links International Inc.

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Produced by the Petroleum Human Resources Council of Canada for the B.C. Natural Gas Workforce Strategy Committee

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Foreword

The B.C. Natural Gas Workforce Strategy Committee is pleased to release this B.C. Natural Gas Workforce Strategy and Action Plan. The Committee has been established with financial support from the provincial and federal governments under the Labour Market Partnership Program and comprises representatives from major companies, industry associations and provincial government ministries.

Previous reports including a demand analysis, along with a companion supply-side environmental scan, served as the foundations for the development of this comprehensive workforce strategy and implementation plan for the natural gas sector, including major developments in liquefied natural gas processing and export capabilities.¹ The objective of the workforce strategy is to ensure, through its implementation, that the natural gas sector has the right number of workers, with the right skills, in the right places, and at the right times to enable its further growth and diversification. It is fully acknowledged, that the current environment for the development of the natural gas industry in B.C. is highly dynamic, and correspondingly, the workforce strategy will need to be regularly reviewed and adjusted to reflect a quickly changing environment.

It is anticipated that with the completion of this initial strategy, the focus will shift to implementation.

Geoff Stevens

Chair, B.C. Natural Gas Workforce Strategy Committee



¹ The supply-side report, entitled *Labour Market Supply Side Environmental Scan – B.C. Natural Gas Sector* can be accessed on the Resource Training Organization website at <http://www.rto.bc.com/Resources/Reports.htm>

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Executive Summary

The development of a liquefied natural gas (LNG) export sector in British Columbia (B.C.) will be a game-changer for the province of B.C. and the Canadian natural gas industry. As with anything new, the development of LNG involves a number of uncertainties that need to be evaluated and risks managed in order to move forward. As other large energy projects have learned, labour shortages can result in bottlenecks and cost and schedule overruns. Addressing concerns related to the availability of the workers has become as critical to the feasibility of major capital projects as obtaining capital, securing customers and solidifying fiscal and regulatory regimes.

Recognizing that the benefits of natural gas investment and LNG development will not be realized without the right workforce, in the right place, at the right time, the B.C. Natural Gas Workforce Strategy Committee was formed to:

- Develop an understanding of the workforce required to construct and operate natural gas related projects;
- Conduct an environmental scan of the potential labour supply available to the projects; and
- Build a workforce strategy and action plan to address labour supply/ demand concerns.

The work to date clearly indicates that there is a strong desire by all stakeholders involved – industry, government and local communities – to ensure the local labour force and business sector benefit first from natural gas investment in northern B.C. However, northern B.C.'s labour force will simply not be able to meet the labour demand generated by the growth of the province's natural gas industry. The B.C. Natural Gas Workforce Strategy and Action Plan needs to take action to increase employment of local talent as well as attract and retain talent from other regions.



B.C. Natural Gas Workforce Strategy and Action Plan

Vision

The B.C. natural gas industry has the right number of workers, with the right skills, in the right places at the right time, to enable its growth and diversification.

Mission

Build the capacity within industry, labour supply partners and communities to address current and future natural gas related construction and operations workforce requirements.



Strategies, Actions and Timing of Implementation

The following guidelines are suggested for implementation of priority actions:

- Actions to be initiated immediately include those that:
 - Address barriers to employment;
 - Have a “development” phase and therefore require lead time prior to implementation;
 - Develop information, standards, tools etc. that are foundational to other actions; and/or
 - Deliver workers to current upstream natural gas operations in-demand jobs.
- Actions to be implemented once a positive final investment decision (FID) is made.
- Actions to be implemented once construction starts to focus on ongoing delivery of workers to natural gas related construction and preparation of workers for LNG operations employment.
- Actions that can continue once LNG projects move into operations.

1.0 Strategy Communicate up-to-date labour market and career information.

ACTIONS:

- 1.1 Produce regular, realistic labour market and career information for the B.C. natural gas construction and operations. *(Immediate)*
- 1.2 Develop labour demand information on the employment opportunities associated with the contracted services (indirect jobs) required to support natural gas activity. *(Immediate)*
- 1.3 Produce industrial construction workforce projections for northern B.C. to 2025 to provide insights into the level of competition construction of natural gas projects may face. *(Immediate)*
- 1.4 Develop and implement a mechanism for regular communication between industry and training organizations regarding training requirements. *(Immediate)*

2.0 Strategy Address the barriers to local labour force participation in natural gas related employment, especially within under-represented groups.

ACTIONS:

- 2.1 Support the adoption/expansion of school-to-work mechanisms (e.g. dual credit programs) across B.C. to enhance high school graduation rates and youth participation in natural gas related employment. *(Immediate)*
- 2.2 Develop and implement an entry-level “Working in the Natural Gas Industry” program to increase participation of under-represented groups including Aboriginal Peoples, women and immigrants into in-demand natural gas occupations. *(Immediate)*

3.0 Strategy Develop the skills and qualifications required for natural gas construction and operations and increase the local pool of qualified talent.

ACTIONS:

- 3.1 Develop and implement an enhanced apprenticeship training model and strategy for the natural gas sector construction projects and ongoing operations. *(Immediate)*
- 3.2 Develop tools, materials and dissemination plan to support the application of an expanded B.C. Natural Gas Skills & Qualifications Transferability Matrix. *(Immediate)*
- 3.3 Develop occupational standards and assessment tools for labourer and helper roles. *(Immediate)*
- 3.4 Compile existing competency-based skills assessments and develop competency-based tools that currently do not yet exist for high-demand occupations. Provide “gap” training. *(After FID)*
- 3.5 Develop and implement a post-secondary LNG operator training program. *(After FID)*

4.0 Strategy Develop the capacity of local businesses to participate in the natural gas related economic growth.

ACTION:

- 4.1 Provide training to help regional and provincial businesses participate in procurement processes and grow their business. *(Immediate)*

5.0 Strategy Source and relocate workers from other parts of B.C., Canada and the world to natural gas operating regions.

ACTION:

- 5.1 Conduct information sessions in southern B.C. and across Canada in regions with higher unemployment rates among in-demand occupations. *(After FID)*

6.0 Strategy Offer work arrangements that support workers to rotate into the region for permanent work; Offer work arrangements that support temporary relocation for short-term labour demand in the region.

ACTION:

- 6.1 Research best practices for sourcing the workforce required to support the development of major natural resource projects including the relocation of workers, minimizing the use of fly-in/fly-out, rotation work assignments, and temporary workers. *(Immediate)*

Conclusion

The tremendous benefit to the economic and social well-being of the regional population will not be realized without significant effort. Furthermore, time is of the essence and there are too many potential barriers to wait until the construction of projects is underway before developing local workers and businesses. Immediate implementation of the B.C. Natural Gas Workforce

Strategy and Action Plan is required in order to overcome concerns related to workforce availability. No one solution will ensure that the workforce required to fulfill the LNG opportunity is available, skilled and productive. Multiple strategies and actions on the local, regional, Canadian and international front are required to see the fulfillment of the LNG opportunity and benefits.

Introduction

British Columbia's (B.C.) natural gas industry is currently in transition. Less than five years ago, natural gas production was declining and North America faced widespread shortages. Fast forward to 2013 and there is now a glut of natural gas supply, as technological advancements have unlocked previously inaccessible shale and tight gas reserves. Natural gas producers have shifted their focus from exploring for new natural gas supply to securing new and sustainable demand.

Over the coming years, the transportation and power generation sectors are likely to increase utilization of natural gas, given it is a cleaner burning energy. However, the real opportunity for expanding demand for natural gas is supplying offshore markets through liquefied natural gas (LNG) exports.² B.C. is uniquely positioned as the most direct gateway to growing, energy-consuming Asian markets.

Ensuring the availability of labour and skills required to develop B.C.'s LNG export industry is key to ensuring B.C. and Canada can successfully transition to be a global supplier of natural gas. The B.C. Ministry of Energy, Mines and Natural Gas commissioned a study on potential construction and operations employment impacts created by LNG development in the province. The *Employment Impact Review*³ assumes that five LNG plants with a combined capacity of 82 mtpa⁴ are operational by 2021. As a result:

- 21,600 jobs will be directly involved in the building of LNG export facilities and associated pipelines at peak construction⁵ that is expected to occur 2016/2017.
- 41,900 jobs will be created in the industries that supply goods and services during the construction phase at peak.

- 2,400 permanent jobs are required to operate and maintain the plants and pipelines on an ongoing basis.
- 61,700 jobs are required to support LNG operations including workers required to drill, produce, process and transport the natural gas required to feed the export facilities.^{6,7}

Construction and Operations Occupations Required for LNG Development

Understanding workforce requirements at an occupational level is critical for effective workforce planning. With this in mind, the B.C. Natural Gas Workforce Strategy Committee commissioned the Petroleum HR Council to identify the make-up of the natural gas related construction and operations workforce and high demand occupations to 2020.

Natural Gas Related Construction Occupations

LNG development will require a number of construction workers to build facilities, transfer stations, jetties and pipelines. LNG export facilities will be built in the northwest region of B.C. Pipeline construction will take place across the northern region of the province to connect natural gas supply in the northeast with the export facilities and ports in Kitimat and Prince Rupert.

2 Natural gas becomes a liquid when cooled. In its liquid form, natural gas can be transferred into specialized ships and transported around the globe.

3 Grant Thornton LLP was commissioned in February 2013 to complete the *Employment Impact Review* using LNG project assumptions provided by the B.C. Ministry of Energy, Mines and Natural Gas and their advisors. The full report can be found at <http://www.empr.gov.bc.ca/OG/Documents/Grant%20Thornton%20-%20LNG%20Employment%20Impacts.pdf>.

4 Million tonnes per annum

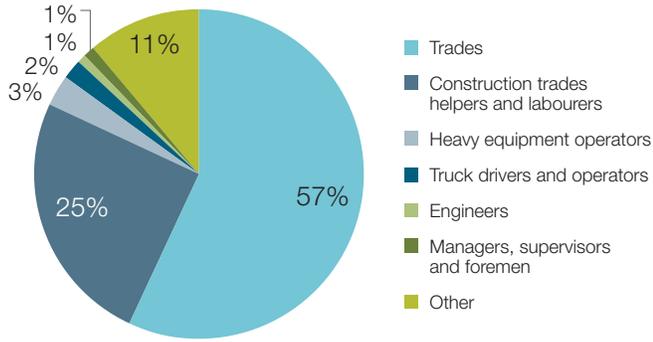
5 Period during construction when the maximum number of workers are on site.

6 Other industries engaged in supporting LNG operations include architectural, engineering and other professional services, utilities, transportation and warehousing, equipment rentals, accommodation, insurance and finance, etc.

7 The *Employment Impact Review* was prepared independent of the original development of the *Labour Demand Outlook for BC's Natural Gas Industry* report. While the focus of the *Employment Impact Review* is to illustrate potential provincial employment impacts created by the LNG opportunity in B.C. under specific assumptions, the focus of the *Labour Demand Outlook for BC's Natural Gas Industry* report is on the broader natural gas industry in B.C. based on some preliminary industry labour survey information gathered in January 2013. Assumptions and conclusions in both reports will continue to change as development in the B.C. natural gas industry continues to evolve.

The following pie chart illustrates the make-up of the construction workforce required at peak. The accompanying table outlines the ten construction-specific occupations expected to be in greatest demand.

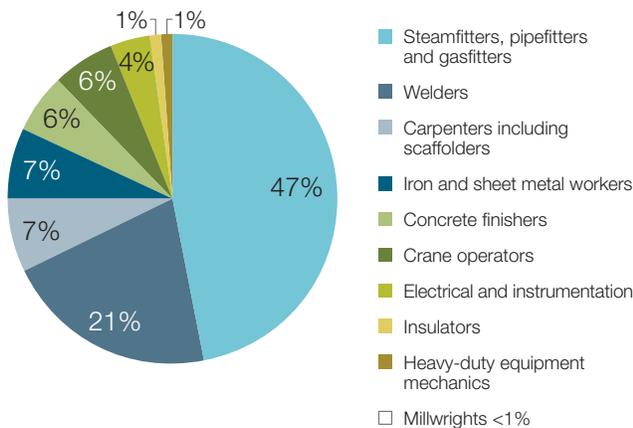
Make-up of Construction Workforce at Peak



<i>Construction Occupations with Greatest Demand</i>	
1.	Steamfitters and pipefitters
2.	Construction trades helpers and labourers (including riggers)
3.	Welders
4.	Concrete finishers
5.	Heavy equipment operators
6.	Carpenters (including scaffolders)
7.	Truck drivers
8.	Purchasing agents and officers
9.	Gas fitter
10.	Crane operators

Given the significance of the trades to LNG construction projects, it is important to identify the specific disciplines that will make up the trades workforce. The following chart provides an overview of the proportion of trades workers at peak construction.

Trades Workforce At Peak Construction



Key considerations for meeting natural gas related construction labour demand include:

- Competition for experienced construction workers in northern B.C. is expected to be fierce, given the significant investment projected for natural gas and other capital projects in the area.
- Aside from the shortage of local workers to meet workforce requirements, the specific expertise required for some LNG construction occupations is currently unavailable within the region.
- Some occupations are only required for certain phases of the construction project and therefore temporary work assignments are likely.
- There will be considerable opportunity for local business and subcontractors to benefit from the regional economic development, but only if they fully understand and can comply with the prime contractors' requirements for the pre-qualification and procurement process.
- The key to a long-term career within the industrial construction sector is mobility. Workers need to be prepared to live in construction camps and be away from home for periods of time.

Natural Gas Operations Occupations

Today, B.C.'s natural gas activities are concentrated in the northeast. The development of the LNG sector will expand natural gas operations into the northwest region of B.C. However, over 90% of B.C.'s natural gas operations workforce will continue to work in the northeast.

Variety of Operations Occupations and Qualifications Required

In 2012, B.C.'s natural gas industry employed about 13,235 workers across three subsectors⁸:

- 8,570 in oil and gas services
- 3,680 in exploration and production (E&P)
- 985 in natural gas pipelines

Oil and gas services workers are involved in oilfield construction, drilling, completions and well servicing.

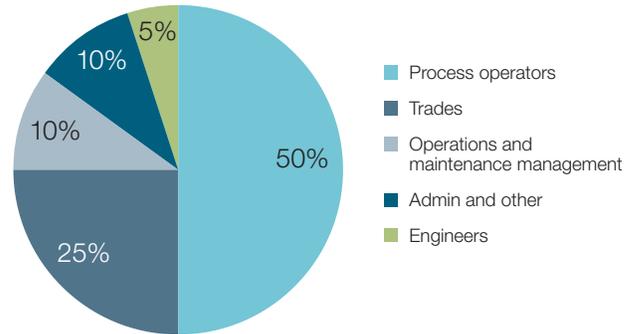
The E&P sector employs workers that operate and maintain production wells and in processing plants. Some E&P companies also operate pipelines between production fields and processing plants.

Pipeline workers operate and maintain the pipelines used in the transmission of natural gas to markets and customers. In B.C., some pipeline companies also operate gas processing plants.

LNG export facilities or plants will require a highly technical workforce. Initially, these workers may not be available provincially or even nationally given that the LNG plants planned for B.C. are the first of their kind in Canada.

<i>Top 10 Occupations Employed in B.C.'s Natural Gas Operations (2012)</i>	
1.	Oil and gas field workers, labourers and operators
2.	Supervisors, oil and gas drilling and services
3.	Operators including plant, process and pipeline
4.	Truck drivers
5.	Millwrights and machinists
6.	Heavy equipment operators
7.	Primary production managers/drilling coordinators
8.	Welders
9.	Steamfitters and pipefitters
10.	Petroleum engineers

Make-up of Workforce Required for LNG Plant Operations



In addition to employment increases due to growth of natural gas operations, age-related attrition⁹ will result in additional job openings and increase the industry's overall recruitment activity. The natural gas operations occupations expected to experience the greatest number of job openings due to increased employment and age-related attrition are:

<i>Greatest Number of Job Openings in Natural Gas Operations Occupations Due to Age-related Attrition</i>	
1.	Oil and gas field workers, labourers and operators
2.	Operators including plant, process and pipeline
3.	Supervisors, oil and gas drilling and services
4.	Truck drivers
5.	Millwrights and machinists
6.	Primary production managers/drilling coordinators
7.	Heavy equipment operators
8.	Welders
9.	Industrial electricians
10.	Steamfitters and pipefitters

⁸ B.C. natural gas operations employment for 2012 was estimated using the Petroleum HR Council's labour market modeling system that relates occupational requirements to employment driver values including capital and operating expenditures and production.

⁹ Age-related attrition refers to employment vacancies or job openings created by workforce retirements and deaths.

Key considerations for meeting natural gas operations labour demand include:

- The labour force is already working at capacity in northeastern B.C. The projected growth of the natural gas industry will further tighten the labour market.
- LNG facility operations require a highly skilled, technical workforce.
- The oil and gas services sector, the largest employer in B.C.'s natural gas industry, will generate the most jobs over the next decade. Finding and keeping skilled workers will be a key challenge.
- Employee turnover is increasing labour costs at a time when cost management is a top priority.

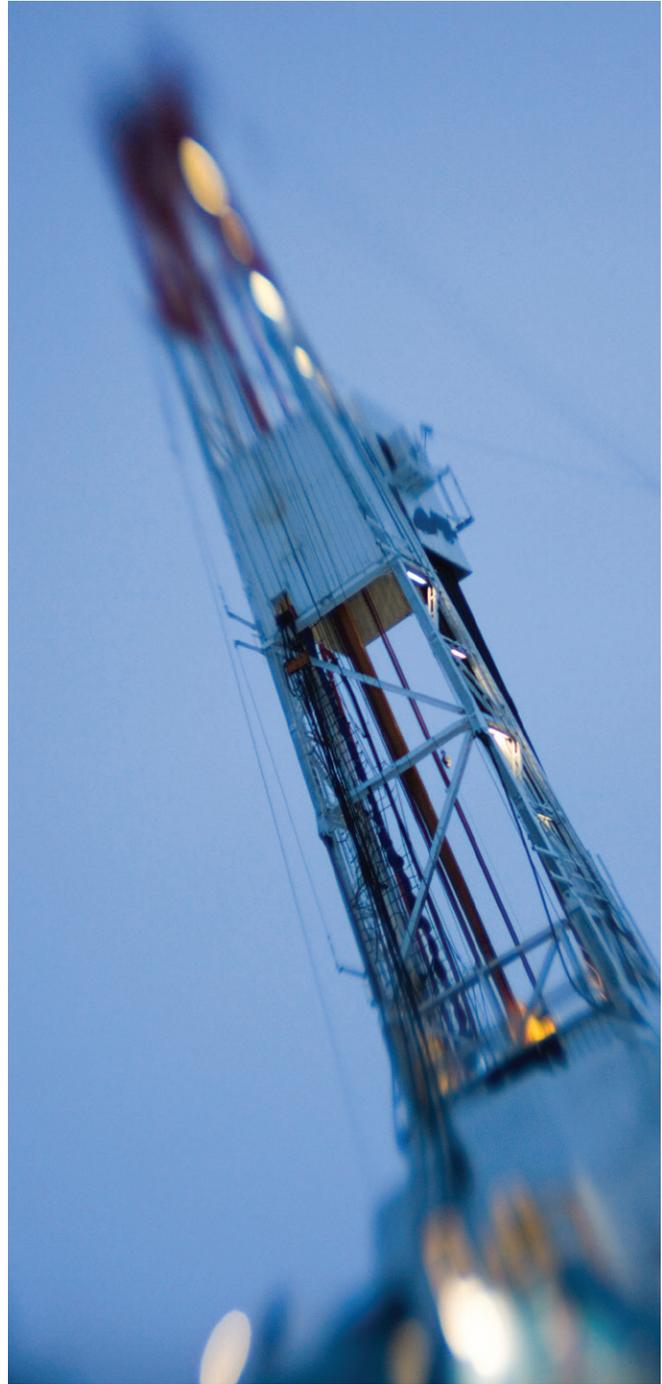
Labour Supply Outlook for B.C.'s Natural Gas Industry

Natural gas development will not occur without the right workforce, in the right place, at the right time. B.C.'s northeast and northwest regions currently have a labour force of only 86,500, 3.5% of the province's total.¹⁰ The B.C. Natural Gas Workforce Strategy Committee also commissioned the *B.C. Natural Gas Labour Supply Environmental Scan*¹¹ to gain an understanding of potential sources of workers to support B.C. natural gas construction and operations labour requirements.

Bottom line: As it stands, northern B.C.'s labour force will simply not be able to meet the labour demand generated by the growth of the province's natural gas industry. A plan to address all the factors impacting labour and skills shortfalls is urgently required.

For example, competition for skilled trades, technical occupations and construction-related workers will be tremendous, given the other projects underway. The natural gas sector will need to develop strategies to inform local residents of the industry's career opportunities and skill requirements and attractive pay and benefits.

Many of the workers the natural gas industry will need from northern B.C. will require skills training and upgrading. Some capacity exists for expanding the current apprenticeship training infrastructure in the northern regions. Nevertheless, new approaches are needed to ensure the ongoing supply of trained workers.



¹⁰ Statistics Canada Labour Force Survey, Annual Averages Prepared by B.C. Stats in February 2012

¹¹ The supply-side report, entitled *Labour Market Supply Side Environmental Scan – BC Natural Gas Sector* can be accessed on the Resource Training Organization website at <http://www.rto.bc.com/Resources/Reports.htm>.

More active recruitment and training of under-represented groups through programs such as the Industry Training Authority's (ITA) Women, Aboriginal and Immigrant in Trades Training programs and dual credit programs for high school students could be undertaken. In addition, greater opportunities may exist for companies and/or industries to collaborate more closely with training providers. Working together, they would be able to define skill requirements (such as competencies), and better coordinate technical training with seasonal and production schedules so apprentices can complete their training.

In terms of attracting migrants from other regions of B.C., areas such as the Vancouver Island/Coast, Thompson/Okanagan and Kootenay all have an industrial and occupational base that is transferable to the natural gas and heavy industrial construction industry. In fact, the Petroleum HR Council managed a program that saw over 90 workers previously laid-off from pulp and paper and forestry successfully transition into oil and gas. While the historical trend of skilled worker migration has been north to south, the chance to get new or better jobs, higher incomes and, in some cases, lower-cost housing may entice some workers from south to north.

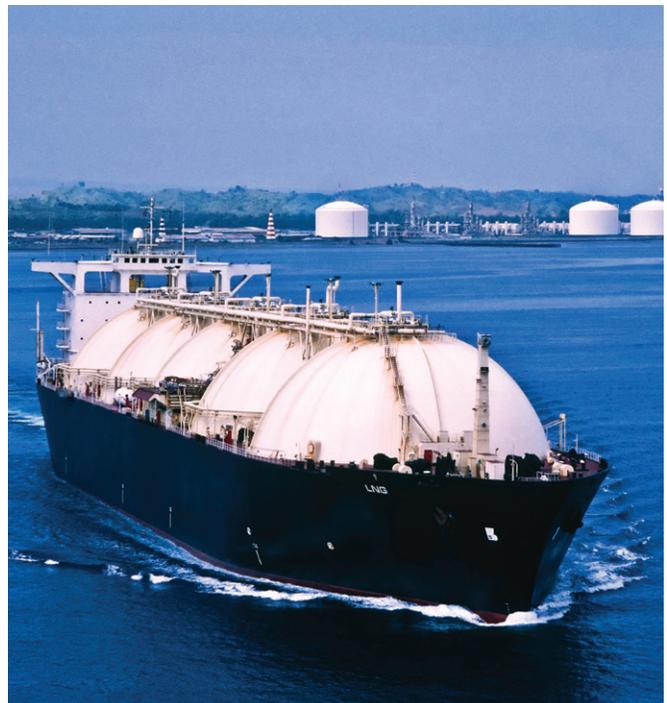
Interprovincial migration also represents a potential source of workers for the natural gas industry. As past experience has shown, Alberta is a likely source; Ontario, Manitoba and Atlantic Canada may be as well. The B.C. government is making efforts to increase the number of interprovincial migrants, by hosting

up to six industry-led recruitment missions and strengthening overall marketing efforts.

Aboriginal Peoples are traditionally under-represented in the labour force but represent an excellent potential source of workers for the natural gas industry. Mobilizing this workforce carries with it challenges that several organizations in B.C. are addressing. Success on this front will depend on the active participation of industry, First Nations and governments.

Immigrants to B.C. will also be an important part of the labour supply. B.C. has been successful in attracting and retaining immigrants to the Lower Mainland, but has had more limited success encouraging them to settle in the north. The emergence of the new LNG industry is an opportunity for the province to be more targeted in the programs it offers in conjunction with the federal government. The federal government, for its part, is changing immigration and temporary foreign worker programs in an attempt to make them more flexible and responsive to industry needs.

Finally, not all employment associated with LNG development will be permanently located in northern B.C. In fact, a significant portion of the workers will only be required on a temporary basis during the construction phase of the projects. Temporary workers – whether from other parts of B.C., Canada or the world – will play an important role in addressing labour supply/demand gaps associated with developing B.C.'s LNG export industry.



Resourcing B.C.'s Natural Gas Industry

The activity expected for B.C.'s natural gas industry over the next decade will not only be a game-changer for the province, but will fundamentally impact how Canada's natural gas industry conducts business.

While there is significant economic potential from the development of B.C.'s LNG export industry, there are also challenges. Securing offshore customers is critical as the industry moves into a global marketplace with increased competition, but equally important will be obtaining the necessary construction and operations workforce. Historically, the shortage of skilled labour has been identified as a serious concern and cause of bottlenecks and cost overruns for other large energy capital projects including LNG plants and pipelines currently under-construction in Australia and oil sands projects in Alberta. In fact, these projects may provide opportunities to learn how to proactively address workforce concerns – especially those associated with establishing a new industry sector. Without a comprehensive workforce strategy and quick implementation, worker availability represents another level of uncertainty for those making final investment decisions about the development of a LNG export sector. Increasing the availability of workers enhances the feasibility of LNG in B.C.



B.C. Natural Gas Workforce Strategy and Action Plan

The B.C. natural gas workforce strategy and action plan, developed by the B.C. Natural Gas Workforce Strategy Committee, is a culmination of input and feedback from industry, government, provincial and regional stakeholders.¹² The intent of the strategy and action plan is to outline high-level strategies and specific actions required to achieve the vision and mission.

Vision – the desired end result of the workforce strategy and action plan is:

The B.C. natural gas industry has the right numbers of workers, with the right skills, in the right places and at the right time to enable its growth and diversification.

Mission – the fundamental purpose of the workforce strategy and action plan is to:

Build the capacity within industry, labour supply partners and communities to address current and future natural gas related construction and operations workforce requirements.

Principles

The implementation of the workforce strategy and action plan will be guided by the following principles:

- Natural gas related capital projects offer an opportunity to develop a sustainable local, regional and provincial workforce. Activities will focus on increasing labour force participation – not simply attracting workers away from other energy-producing projects and/or regions.
- Developing the workforce required by natural gas related investment will require competitors to become collaborators. No single company or organization can address the projected labour shortages on its own.
- Activities are based on industry-driven demand and realistic projections of labour demand requirements.
- The strategy and action plan will have a particular focus on Aboriginal Peoples, given their representation within the populations of the regions where most of the natural gas development will take place.
- Implementation of the strategy and action plan will leverage existing proven practices and allow for regional uniqueness.

- All stakeholder groups, including industry, government, employment and training groups, post-secondary institutions and communities, share the responsibility and accountability for the success of the action plan.

Implementation Structure (Proposed)

The implementation structure has been designed with three key factors in mind:

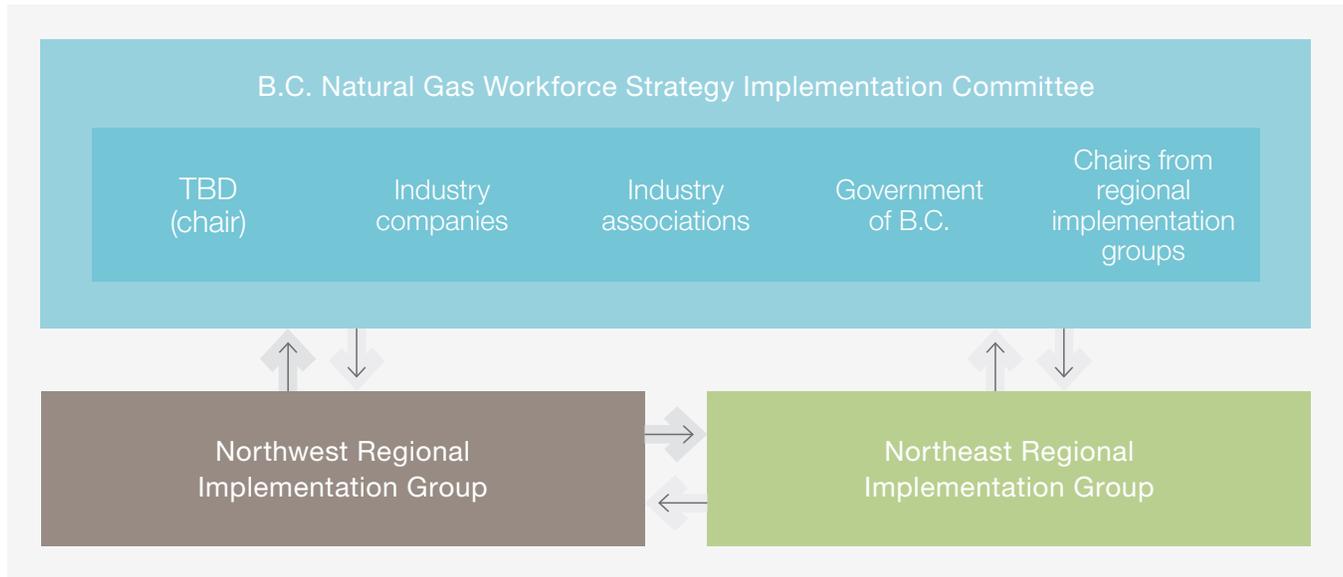
1. Information, programs and tools used for the implementation of the strategy and action plan must be industry-endorsed and use a common standard.
2. The regions where B.C. natural gas development will take place are already working on their local, unique workforce and training concerns. Their focus is broader than the natural gas industry. For example, Regional Workforce Tables (RWT) established in the northeast and northwest, have been responsible for developing training plans for key industries in their regions.
3. While collaborating with regional groups is key to effective implementation, targeted strategic actions will also have to be implemented outside the northwest and northeast regions.

The implementation of the B.C. Natural Gas Workforce Strategy and Action Plan will be overseen by an implementation committee, established under the Labour Market Partnerships Program, made up of representatives from industry, industry associations and relevant B.C. government ministries, as well as chairs from regional groups already involved in addressing regional labour force issues.

The Resource Training Organization (RTO) will administer the Labour Market Partnership Agreement for the committee, engage an independent chair person, and take the lead on securing funding for committee activities. It is expected that funding will come from a variety of sources, including industry and federal and provincial governments.

¹² A workshop held in Vancouver, B.C. on November 29, 2012 and regional consultations held in Fort St. John, B.C. and Terrace, B.C. on January 14 and 15, 2013 respectively facilitated the involvement of 65 representatives from key groups and organizations in the development of this strategy.

Overview of B.C. Natural Gas Workforce Strategy Implementation Structure



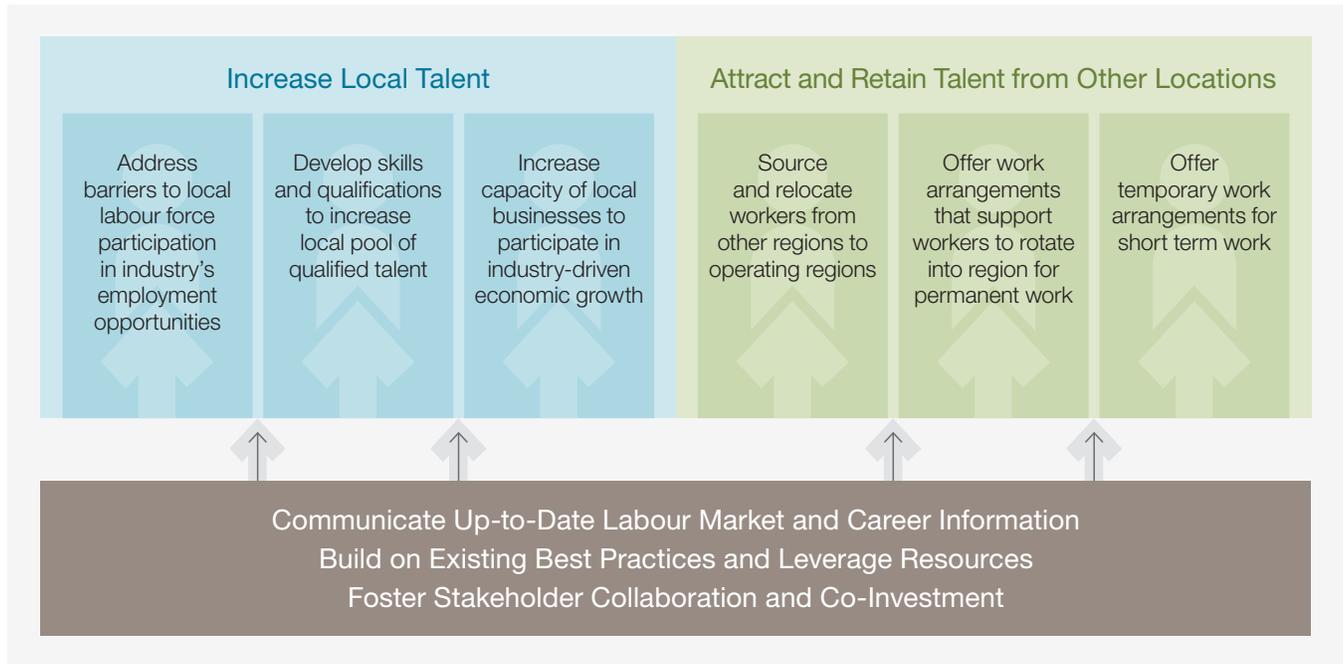
Summary of Mandate, Roles and Responsibilities

<i>Mandate, Role and Responsibilities</i>	<i>Examples of Actions</i>
B.C. Natural Gas Workforce Strategy Implementation Committee	
<ul style="list-style-type: none"> • Increase the pool of qualified workers available for B.C. natural gas industry. • Ensure industry-validated approaches using common standards, information, etc. • Implement actions outside the northeast and northwest regions. • Share information with regions (regional chairs sit on committee). • Centralization and coordination of information and resources related to workforce development for B.C. natural gas industry. • Secure funding for implementation of strategy and action plan. 	<ul style="list-style-type: none"> • Produce regular B.C. natural gas LMI. • Develop occupational standards and tools. • Develop and implement an enhanced apprenticeship training strategy/model. • Develop and implement a mechanism that fosters regular communication between industry and training organizations. • Develop a LNG operator training program. • Promote the industry to labour supply pools outside the northeast and northwest regions.
Regional Implementation Groups	
<ul style="list-style-type: none"> • Mandate focused on increasing regional labour force participation and skill levels, but likely will be broader than just the B.C. natural gas industry and include mining, power/utilities, forestry, etc. • Different regional implementation structures. • Implement actions appropriate for region. • Share information with each other and the implementation committee. • Identify tools, models, training, standards, etc. that require industry-wide consistency and share them with the implementation committee. • Secure funding for the implementation of regional activities. 	<ul style="list-style-type: none"> • Provide training to help local business participate in procurement processes and grow their businesses. • Use occupational standards and tools to assess local workers and implement training. • Promote the B.C. natural gas industry to labour supply pools within the region. • Educate regional stakeholders about the B.C. natural gas industry, its activity and careers.

Strategy Framework

The strategy framework provides a conceptual structure for the strategy and action plan defines the overall approach to achieving the vision and guides the mission.

Two high-level approaches will help ensure the natural gas industry has the right skills in the right place at the right time. Each approach includes three key strategic components required to effectively achieve the desired outcome.



Strategy and Actions

The following outlines the strategy and actions prioritized by industry and regional stakeholders as high or high-medium priority for increasing qualified workers for B.C. natural gas industry activity.

<p>1.0 Strategy Communicate up-to-date labour market and career information.</p>
<p>1.1 ACTION: Produce regular, realistic labour market and career information for the B.C. natural gas construction and operations. <i>(Immediate)</i></p>
<p>RATIONALE Labour market information is a key input into informed decisions about careers, training, job search, recruitment strategies, etc. The natural gas sector as a whole is not well understood and LNG export—a new industry for Canada— is even less known to potential workers. In addition, the B.C. natural gas industry is evolving. Multiple projects have been announced but are in various stages of approval, timelines are being adjusted, etc. This action focuses on providing the most current information about the workforce needed by the dynamic natural gas industry in B.C.</p>
<p>DESIRED OUTCOMES Regular reporting of up-to-date, realistic labour demand-supply information for the B.C. natural gas construction and operations industry to inform decisions made by job seekers, career decision-makers, communities, training institutions, etc.</p>

SUPPORTING ACTIONS

- Develop and implement a plan to communicate LMI to targeted audiences.
 - Different audiences require different communication and dissemination tactics.
 - Leverage existing communication mechanisms, such as websites, instead of creating new ones.
 - Provide labour demand information to job seekers, employment centres, schools, education and training institutions, etc.
 - Provide regional labour supply information for northern employers.
- Conduct a dissemination campaign across B.C. and targeted areas across Canada.

IMPLEMENTATION CONSIDERATIONS

- It is anticipated that regional implementation groups would use B.C. natural gas LMI and career information to assist with their work.
- Petroleum HR Council developed a modeling system for projecting B.C. natural gas construction and operations direct labour demand for the *Labour Demand Outlook for B.C. Natural Gas Industry to 2020*.
- Petroleum HR Council has a well-developed petroleum specific careers website CareersinOilandGas.com
- www.workbc.ca is the Government of B.C.'s labour market information website that provides occupational and regional information.

1.2 ACTION:

Develop labour demand information on the employment opportunities associated with the contracted services (indirect jobs) required to support natural gas activity. (*Immediate*)

RATIONALE

The *Labour Demand Outlook for B.C. Natural Gas Industry to 2020* projects direct employment associated with the development of a LNG export sector in two scenarios. However, there also will be a number of employment opportunities created within the sectors that provide contracted services to the natural gas industry. As a result, there will be a number of additional opportunities for local and regional residents to participate in the economic development coming to the area. Sectors that typically provide contracted services include marine, camp and accommodation services, transportation, etc. This action focuses on quantifying and communicating job opportunities within these contracted sectors.

DESIRED OUTCOMES

An understanding of the indirect jobs associated with the investment by the B.C. natural gas industry to inform decisions made by job seekers, career decision-makers, communities, training institutions, etc.

SUPPORTING ACTIONS

- Identify the services typically contracted by the natural gas industry for construction and operations.
 - The existing natural gas industry, the oil sands sector and the Australian LNG sector are likely to provide insights into the broad range of contracted services required to support B.C.'s natural gas sector including LNG export projects.
- Develop a methodology for projecting quantitative labour demand information.
- Produce labour demand information and validate with relevant industries.

IMPLEMENTATION CONSIDERATIONS

- Once developed, this labour market information will become part of the regular natural gas construction and operations LMI updates.

<p>1.3 ACTION: Produce industrial construction workforce projections for northern B.C. to 2025 to provide insights into the level of competition construction of natural gas projects may face. <i>(Immediate)</i></p>
<p>RATIONALE</p> <p>Northern B.C. is facing unprecedented capital investment in major industrial projects over the next decade, including billions in natural gas related expenditures. Proponents of B.C. LNG projects have identified access to the required workforce is critical to the feasibility of projects moving forward. Northern B.C.'s existing construction workforce is nowhere near what will be required – even if only some projects move forward. This action item focuses on quantifying construction labour demand across all industrial sector during the construction phase associated with natural gas investment.</p> <p>In addition to providing the industry with an understanding of construction workforce requirements, this action will provide job seekers information about the opportunity to maintain employment within the industrial construction sector within the region. An understanding of the potential for a long-term sustainable career within the industrial construction sector will help to attract workers to the industry.</p>
<p>DESIRED OUTCOMES</p> <p>An understanding of the total industrial construction workforce required to 2020 for major capital projects planned for northern B.C. More than one scenario for construction activity may be produced.</p>
<p>SUPPORTING ACTIONS</p> <ul style="list-style-type: none"> • Leverage existing construction labour demand modeling systems to project workforce requirements to identify the services typically contracted by the natural gas industry for construction and operations. • Utilize the dissemination strategy developed for communication of up-to-date LMI to circulate key findings from the research conducted in this action item.
<p>IMPLEMENTATION CONSIDERATIONS</p> <ul style="list-style-type: none"> • The Construction Sector Council (BuildForce), BC LMI and/or other labour market modeling organizations are likely to have the capacity to produce labour demand projections for major industrial projects planned for northern B.C.
<p>1.4 ACTION: Develop and implement a mechanism for regular communication between industry and training organizations regarding training requirements. <i>(Immediate)</i></p>
<p>RATIONALE</p> <p>With the uncertainty around the timing and number of natural gas related projects, there must be regular, proactive communication between industry and training providers about occupational requirements, to ensure training is focused on the occupations and skills required by industry.</p>
<p>DESIRED OUTCOMES</p> <p>Training institutions are fully aware of the natural gas industry's construction and operational training requirements so proactive decision-making and planning can occur.</p>
<p>SUPPORTING ACTIONS</p> <p>The availability of up-to-date industry-validated LMI and career information and skill and qualification requirements supports this action.</p>
<p>IMPLEMENTATION CONSIDERATIONS</p> <ul style="list-style-type: none"> • Northern Lights College has been designated as the Oil and Gas Centre of Training Excellence for B.C. • The oil sands sector has established a similar mechanism: Oil Sands Learning and Education Network.

2.0 Strategy Address the barriers to local labour force participation in natural gas related employment, especially within under-represented groups.

2.1 ACTION:

Support the adoption/expansion of school-to-work mechanisms (e.g. dual credit programs) across B.C. to enhance high school graduation rates and youth participation in natural gas related employment. (*Immediate*)

RATIONALE:

Increasing high school graduation rates in B.C., and in the north in particular, is fundamental to growing the regional workforce's participation in the province's natural gas industry. Work-based training and dual credit programs for high school students have proven to increase high school graduation and effectively transition youth into work, apprenticeships and/or post-secondary training. Features of successful programming include:

- Business model that relies on the collaboration and coordination of the secondary schools, school boards, industry, post-secondary institutions and Aboriginal and Métis community groups.
- Combines secondary school, post-secondary studies and work-based training.
- Dual credits and work-based training available for a wide range of careers including trades, technologies, etc.

The Northern Opportunities school-to-work transition program was featured in the natural gas labour supply research. The program is built around four pillars:

1. Community Mobilization and Partnerships – Mobilize the community around the idea of enhancing student achievement and success in trades and technology, literacy and lifelong learning.
2. Learner Services – Identify and implement a variety of methods for supporting students including financial incentives, parental engagement, peer mentoring, counseling and other services designed in a manner that recognizes diversity of students and their needs.
3. Educational Offerings – Develop a number of educational offerings for the trades/technology pathway that are relevant and flexible. Student will be able to plan a program that includes:
 - Secondary education and graduation with a B.C. high school diploma;
 - Post-secondary training and diploma, with options for pursuit of further education; and
 - Work experience and related skills development.
4. Information and Marketing – develop a range of media and promotion techniques to build a positive image of trades and technology career choices for young people and their families.

DESIRED OUTCOMES:

A program for B.C. high school students that:

- Encourages them to stay in school as a key prerequisite to sustainable employment;
- Allows students to stay at home to train for sustainable employment in the community;
- Promotes in-demand jobs including those related to natural gas construction and operations; and
- Encourages broad stakeholder collaboration on regional workforce solutions.

SUPPORTING ACTIONS:

The northwest region currently does not offer a comprehensive school-to-work transition program. There are a number of successful programs already operating in B.C. that other school districts can use to design and implement their own program.

Northern Opportunities, already established in northeast B.C., is currently developing an implementation manual to facilitate the expansion of the program to other regions.

This action was also a recommendation in the training plan for the Northwest Workforce Table.

IMPLEMENTATION CONSIDERATIONS:

This action requires significant on-the-ground support from a collaborative, multi-stakeholder implementation team. Industry participation is crucial.

<p>2.2 ACTION: Develop and implement an entry-level “Working in the Natural Gas Industry” program to increase participation of under-represented groups including Aboriginal Peoples, women and immigrants into in-demand natural gas occupations. <i>(Immediate)</i></p>
<p>RATIONALE: Research indicates that increasing labour force participation rates in northeast and northwest B.C. is one potential solution to regional labour and skills shortages. Currently, youth, new Canadians, women and Aboriginal Peoples are under-represented in many of the in-demand natural gas occupations for a number of reasons, including limited knowledge of industry and career opportunities, types of skills required and the balance between home responsibilities with working; and lack of prerequisite high school courses and access to training. Programs have proven to increase the number of women, youth, new Canadians and Aboriginal Peoples in trades, technology, engineering and science occupations by addressing some of these foundational barriers.</p>
<p>DESIRED OUTCOMES: A program that promotes and educates under-utilized labour supply pools about career options within the natural gas sector and addresses barriers to participating in sustainable employment opportunities.</p>
<p>SUPPORTING ACTIONS: Leverage best practices already developed and implemented for targeted groups in trades programming.</p>
<p>IMPLEMENTATION CONSIDERATIONS:</p> <ul style="list-style-type: none"> • Programming would need to be customized to address systemic barriers of each of the under-utilized labour supply pools. • This action would help to establish an industry-validated curriculum that could then be implemented by appropriate organizations in each of the regions. • Opportunity to involve the B.C. Women in Energy Network, Aboriginal Skills and Employment Training (ASET) holders and other Aboriginal training organizations, youth employment agencies, education institutes and immigrant-serving agencies. • Northern Lights College has been designated as the Oil and Gas Centre of Training Excellence for B.C.

3.0 Strategy Develop the skills and qualifications required for natural gas construction and operations and increase the local pool of qualified talent.

<p>3.1 ACTION: Develop and implement an enhanced apprenticeship training model and strategy for natural gas related construction projects and ongoing operations. <i>(Immediate)</i></p>
<p>RATIONALE The shortage of certified trades will be one of the greatest workforce challenges facing the expansion of the B.C. natural gas industry. The existing apprenticeship model is limited by:</p> <ul style="list-style-type: none"> • Too few employers/sponsors; • High rate of incompleteness; • Ineffective transition from front-end, institution-based training to work-based apprenticeship to fully certified tradesperson. <p>In addition, the small service companies that are critical to the construction and operations of natural gas projects may not be able to commit to a four-year apprenticeship due to seasonal and project-based contract work. Further, there are regional workers, many laid-off or underemployed from other industries, with relevant work experience and competencies who could be assessed, trained and certified in an expedited manner.</p>
<p>DESIRED OUTCOMES</p> <ul style="list-style-type: none"> • An alternative apprenticeship sponsorship model that reduces the administrative burden for employers and improves support for apprentices. • Improved linkages between institutional entry-level/foundations, trades training and apprenticeships. • Accelerated certification for skilled workers with relevant work experience through prior learning assessment and targeted gap training. • Enhanced entry for under-represented groups, such as Aboriginal Peoples, immigrants and women.

SUPPORTING ACTIONS

The B.C. Natural Gas Skills & Qualifications Transferability Matrix can assist with assessing skills and competencies of skilled workers from other industries for potential trades certification.

There is an opportunity to leverage the experience and expertise of the Australian National Apprenticeship Program, which has already developed an enhanced apprenticeship model and program for the resource sector.

IMPLEMENTATION CONSIDERATIONS

ITA has funded RTO to complete implementation planning and to scope the feasibility and key components of an enhanced apprenticeship model and strategy. The B.C. Natural Gas Workforce Strategy Implementation Committee will work closely with RTO to understand the opportunity for the natural gas industry.

3.2 ACTION:

Develop tools, materials and dissemination plan to support the application of an expanded B.C. Natural Gas Skills & Qualifications Transferability Matrix. *(Immediate)*

RATIONALE

The B.C. Natural Gas Workforce Strategy Committee commissioned the development of a document that outlines similar skills and qualifications required by occupations across a number of industries including natural gas construction and operations. The purpose of the work was to assess the potential for workers to move across industries recognizing that the ability for workers to move between positions, industries and regions will result in a more effective labour market.

The initial work focused on seventeen in-demand occupations for natural gas operations and construction and their transferability between six industries including military, pulp and paper, lumber manufacturing, construction, mining and oil and gas.

Review by the Committee identified potential next steps for the B.C. Natural Gas Skills & Qualifications Transferability Matrix:

1. Expansion of occupations to include direct and in-direct construction and operations - potentially up to 60 occupations.
2. Production of tools and materials to support the application of the matrix taking the needs of employers, employment counselors, training institutions and job seekers into account.
3. Develop and implement a dissemination plan.
4. Identify other occupations to assess for skills and qualification transferability across industries.

DESIRED OUTCOMES

- A set of tools and materials that promotes the application of skills and qualification transferability by employers, employment counselors, training institutions and jobs seekers.
- Employers, employment counselors, training institutions and jobs seekers are using the tools and materials to support the movement of workers between industries as a strategy for addressing labour supply/demand gaps.

SUPPORTING ACTIONS

The information contained in the B.C. Natural Gas Skills & Qualifications Transferability Matrix is foundational to some of the other actions in this strategy including the dissemination of career information, development of competency-based skills assessments and tools and the potential to accelerate upskilling and qualification attainment by focusing on gaps.

IMPLEMENTATION CONSIDERATIONS

Tools, materials and dissemination activities will need to be customized for each targeted audience.

<p>3.3 ACTION: Develop occupational standards and assessment tools for labourer and helper roles, including essential skills and core industrial certification requirements, to increase worker transition across various employment opportunities. <i>(Immediate)</i></p>
<p>RATIONALE</p> <p>There is high demand for labourers and helpers for the construction of natural gas related projects. This is an occupation that many in the local labour force could qualify for through shorter-term training and certification. Recognizing the potential employment opportunity for the local labour force, including Aboriginal Peoples, a number of training organizations are already conducting training programs. However, current training and certification does not promote sustainable employment or facilitate the transferability of labourer and helper roles between projects and industries, because they are not built on an industry-wide consensus of the occupational standard and/or certification required.</p>
<p>DESIRED OUTCOMES</p> <p>Common, industry-validated occupational standards for trades labourer and helper roles would provide consistency across training programs and a recognized certificate of competency that would facilitate mobility between projects and employers.</p>
<p>SUPPORTING ACTIONS</p> <p>This action also requires methods of assessing competency against the occupational standard.</p>
<p>IMPLEMENTATION CONSIDERATIONS</p> <ul style="list-style-type: none"> • Construction Craft Worker (Labourer) has now been designated nationally as a “Red Seal” trade with a national occupational standards framework. • Funding is available through the Industry Training Association (ITA) if the program includes the development of an industry-recognized occupation standard and certification. • A number of regional training organizations currently provide, or plan to provide labourer and helper training for the local labour force. This would help standardize training and develop an industry-recognized certification. • The “boot camp” training model¹³ has proven to be very effective for training trades labourer and helper roles in northwest B.C.
<p>3.4 ACTION: Research and disseminate information on entry level requirements for employees in natural gas and industrial construction sectors. <i>(Immediate)</i></p>
<p>RATIONALE</p> <p>The natural gas and industrial construction sectors are imposing increasingly rigorous, basic entry-level requirements for persons seeking initial employment. Requirements can include minimum education attainment levels, safety certifications (e.g. survival first aid, H2S Alive, fall protection), driver licenses, and operators certificates. Additionally, alcohol and drug testing prior and during employment are becoming more prevalent.</p>
<p>DESIRED OUTCOMES</p> <p>A compendium by sector and subsector, in the case of natural gas (e.g. upstream, midstream and downstream), of the entry-level employment requirements that can assist individuals who are seeking employment to better prepare and qualify themselves.</p>
<p>IMPLEMENTATION CONSIDERATIONS</p> <p>Industry safety associations and organizations such as Enform for upstream oil and gas and the BC Construction Safety Alliance will be a good source of information and potentially the logical mechanisms to compile the required information</p>

¹³ Refers to a comprehensive and streamlined approach to providing participants with the skills, knowledge and certifications required to qualify for employment in trades labour and helper roles.

3.5 ACTION:

Compile existing competency-based skills assessments and develop competency-based tools that currently do not exist for high-demand occupations. Provide “gap” training. *(After FID)*

RATIONALE

A number of uncertified workers in northern B.C. have skills and experience transferable to occupations that will soon be in demand due to natural gas investment. This is especially true of the northwest region of the province that has seen significant economic downturn in recent years, including the closure of pulp and paper mills, sawmills, a petrochemical manufacturing plant, etc. In many situations, workers and contractors from these industries were not required to have certification, nor did they expect to ever be out of work in an environment where lack of certification would hinder their employment. As a result, there are workers currently underemployed or not working at their full capacity from a skill and experience perspective.

DESIRED OUTCOMES

An expedited upgrading and certification process for skilled and experienced workers who are currently underemployed, to make them eligible for natural gas related construction and/or operations work.

SUPPORTING ACTIONS

- It is likely that a number of existing competency assessment tools can be used or modified for the natural gas related construction and operations in-demand occupations.
- Once such tools are developed, a program to transition downsized or under-employed workers could be put in place.
- The BC Natural Gas Workforce Steering Committee has developed the B.C. Natural Gas Skills & Qualifications Transferability Matrix to help determine the transferability of workers from other industries into natural gas.
- The Petroleum HR Council developed a Labour Market Transition Program that transitioned unemployed workers into petroleum occupations using skill transferability assessments and gap training.

IMPLEMENTATION CONSIDERATIONS

- Regional implementation groups could use competency-based assessments and tools to develop regional training programs that address assessed gaps in the local labour force.
- British Columbia Trucking Association received funding through the Employer Innovation fund to develop and pilot a Truck Driver Skill and Experience Assessment tool to evaluate the equivalency of foreign credentials and qualifications for the knowledge, skills and abilities deemed important by B.C. trucking employers.

3.6 ACTION:

Develop and implement a post-secondary LNG operator training program. *(After FID)*

RATIONALE

The greatest occupational demand in the LNG export facilities will be for LNG operators. As a new industry to Canada, there currently is no operator training program for LNG export operations. The development and implementation of an LNG operator training program would provide an opportunity for locals with the appropriate prerequisites to train for employment at LNG plants operating in the region.

This action will require a critical mass of LNG export operations facilities. It is important to recognize that during start-up of LNG export facilities, owners will need to hire operators with a mix of experience and not all operators will come from the local region. Over time however, there will be capacity to absorb more new LNG operators that have been trained in the region.

DESIRED OUTCOMES

An industry-recognized training program that qualifies students for LNG operator roles.

SUPPORTING ACTIONS

It is likely that at least two LNG plants will be required to make this action a worthwhile endeavor. If only one plant is constructed, it is likely that the LNG operating company will address operator training requirements internally.

IMPLEMENTATION CONSIDERATIONS

- Existing gas plant, process operator and/or power engineering programs may contribute to a LNG operator training program.
- Best practices related to LNG plant operations training can likely be leveraged from other jurisdictions including Australia, Qatar, Malaysia, etc.

4.0 Strategy Develop the capacity of local businesses to participate in the natural gas related economic growth.

4.1 ACTION:

Provide training to help local businesses participate in procurement processes and grow their business. *(Immediate)*

RATIONALE

Both the construction and natural gas industries rely heavily on contracted services. If local businesses are not aware of the goods and services required by these industries, nor how to effectively participate in the procurement process, construction and natural gas companies will go outside the region to secure what they need.

In addition, there will likely be opportunities for local businesses to grow, by increasing staff positions and offering employment to the local labour force.

DESIRED OUTCOMES

Regional business owners have the capacity to effectively grow and manage their businesses and benefit from natural gas investment in the region. This includes the effective recruitment and retention of local workers.

SUPPORTING ACTIONS

Likely requires educating regional businesses about the types of goods and services that will be required by natural gas construction and operations sectors. In addition, education and support for those starting or growing sub-contracting businesses is necessary in order to ensure their success and see fulfillment of opportunity.

IMPLEMENTATION CONSIDERATIONS

Northern Development Initiative Trust (NDIT) is already running effective “boot camps” for business owners in northwest B.C. and may provide an opportunity for program expansion.

5.0 Strategy Source and relocate workers from other parts of B.C., Canada and the world to natural gas operating regions.

5.1 ACTION:

Conduct information sessions in southern B.C. and across Canada in regions with higher unemployment rates for in-demand occupations. *(After FID)*

RATIONALE

The labour supply/demand research conducted by the B.C. Natural Gas Workforce Strategy Committee clearly indicated that the local labour force in northern B.C. cannot support the employment growth expected in the region. In addition to the investment expected from the natural gas sector, the mining, transportation, forestry, power and construction (both residential and industrial) sectors are also projecting investment and employment increases in the north. Northeast B.C. continually registers the province’s lowest unemployment rate and is already experiencing labour shortages.

At the same time, there are communities/regions in B.C., Canada and other countries where the economic downturn has resulted in a highly skilled and qualified, but unemployed, labour force.

A lack of understanding of what northern B.C. communities have to offer in terms of lifestyle, employment opportunities, etc. is a barrier to attracting workers.

DESIRED OUTCOMES

Effective mechanisms for connecting labour supply in other parts of B.C., Canada and the world with employment opportunities driven by natural gas related investment in northern B.C.

SUPPORTING ACTIONS

- Identify locations across B.C., Canada and within other countries with potential relevant labour supply.
 - Include First Nations communities.
- Develop and share tools that help showcase northern B.C. communities as attractive locations.
 - Feature quality of life aspects.
- Work with agencies that help new Canadians to learn about natural gas career opportunities and how to conduct an effective job search.
 - Leverage current work, such as using community snapshots to target immigrants.
 - Consider community integration as well.
- Use the B.C. Natural Gas Skills & Qualifications Transferability Matrix to communicate the opportunity for workers to move between industries.
- Include a recruitment drive once the final investment decision has been made for projects.

IMPLEMENTATION CONSIDERATIONS

- While it was recognized that attracting new residents to northern communities is an important strategy for addressing labour supply/demand gaps created by natural gas investment in B.C., the priority of the regional implementation groups is to develop locals first. Therefore, the work associated with this action falls within the mandate, role and responsibilities of the broader implementation committee.
- Many of the communities in the centre of natural gas development and activity already have profiles. In addition, community snapshots for immigrants are currently being compiled for the B.C. Ministry of Jobs, Tourism and Skills Training.
- The Petroleum HR Council conducts environmental scans of supply pool opportunities that will support targeting potential workers.
- May be able to leverage recruitment drives, trade missions etc. organized by groups such as British Columbia Construction Association (BCCA), economic development councils, B.C. government, etc.
- Four projects, funded by the Employer Innovation Fund managed through the Immigrant Employment Council of B.C., have goals related to this action item:
 - Prince George Chamber of Commerce is conducting a community outreach campaign that aims to recruit and retain skilled new immigrants and their families to Prince George.
 - The B.C. Construction Association is creating comprehensive and interactive resources that demonstrate best practices for engagement, recruitment, assessment and retention of immigrant employees in B.C. The focus of the resource will be on northern B.C. given the great demand for skilled labour.
 - The Kitimat Chamber of Commerce is designing and delivering workshops in a number of northern B.C. communities to inform employers about ways to use a competency-based approach for hiring new immigrants.
 - Initiatives Prince George, in collaboration with local employers, community agencies and educational institutions, will be showcasing Prince George's jobs, housing, schools and settlement services to help encourage full family relocation to the city. The project also involves a virtual career fair.

6.0 Strategy Offer work arrangements that support workers to rotate into the region for permanent work; offer work arrangements that support temporary relocation for short-term labour demand in the region.

6.1 ACTION:

Research best practices for sourcing the workforce required to support the development of major natural resource projects including the relocation of workers, minimizing the use of fly-in/fly-out, rotation work assignments, and temporary workers. *(Immediate)*

RATIONALE

Despite the fact that industry's first choice is to hire locally, the labour supply/demand research conducted by the B.C. Natural Gas Workforce Strategy Committee clearly indicates that the local labour force will not support the employment growth expected in the region. Reality is that the industry will need to implement all types of sourcing strategies including attracting workers to relocate to the area, use temporary workers for temporary work, and implement fly-in/fly-out work arrangements for permanent work. Many of the global major natural resource development occur in remote, sparsely populated areas. Some examples include mining in Australia and Northwest Territories, oil sands development in Alberta and LNG development in Australia. The goal of this action would be to identify proven practices that have been implemented in other regions as well as key learnings about practices that had negative consequences.

DESIRED OUTCOMES

A solid understanding of the best practices related to sourcing the workforce required for natural resource development including attraction and relocation strategies, the use of permanent rotational assignments and staffing for temporary work. Key objective would be to provide industry and communities with information to help minimize the potential risks and drawbacks associated with all types of workforce sourcing strategies and work arrangements.

IMPLEMENTATION CONSIDERATIONS

Some related research has been conducted by University of Northern British Columbia.



Sourcing from All Labour Supply Pools

As the natural gas labour supply research indicated, workers will need to be sourced from all potential labour supply pools to address labour demand for B.C. natural gas construction and operations. The table below illustrates how each of the actions identified in the B.C. Natural Gas Workforce Strategy and Action Plan supports the broad worker attraction, retention and workforce development required.

Action	Primary Labour Supply Pool Targeted						
	Youth	Aboriginal Peoples	Women	Workers from Other Industries	New Canadians	Workers from Outside the Region	Temporary Workers
Produce regular, realistic labour market and career information for the B.C. natural gas construction and operations.	•	•	•	•	•	•	•
Develop labour demand information on the employment opportunities associated with the contracted services (indirect jobs) required to support natural gas activity.	•	•	•	•	•	•	•
Produce industrial construction workforce projections for northern B.C. to 2025 to provide insights into the level of competition construction of natural gas projects may face.	•	•	•	•	•	•	•
Develop and implement a mechanism for regular communication between industry and training organizations regarding training requirements.	•	•	•	•		•	
Support the adoption/expansion of school-to-work mechanisms (e.g. dual credit programs) across B.C. to enhance high school graduation rates and youth participation in natural gas related employment.	•	•	•				
Develop and implement an entry-level “Working in the Natural Gas Industry” program to increase participation of under-represented groups including Aboriginal Peoples, women and immigrants into in-demand natural gas occupations.	•	•	•	•			

Action	Primary Labour Supply Pool Targeted						
	Youth	Aboriginal Peoples	Women	Workers from Other Industries	New Canadians	Workers from Outside the Region	Temporary Workers
Develop and implement an enhanced apprenticeship training model and strategy for the natural gas sector construction projects and ongoing operations.	•	•	•	•	•	•	
Develop tools, materials and dissemination plan to support the application of an expanded B.C. Natural Gas Skills & Qualifications Transferability Matrix.				•	•	•	
Develop occupational standards and assessment tools for labourer and helper roles.	•	•	•	•		•	
Compile existing competency-based skills assessments and develop competency-based tools that currently do not yet exist for high-demand occupations. Provide “gap” training.				•	•		
Develop and implement a post-secondary LNG operator training program.	•	•	•	•	•		
Provide training to help local businesses participate in procurement processes and grow their business.							
Conduct information sessions in southern B.C. and across Canada in regions with higher unemployment rates among in-demand occupations.		•		•	•	•	•
Research best practices for sourcing the workforce required to support the development of major natural resource projects including the relocation of workers, the use of fly-in/fly-out, rotation work assignments, and temporary workers.	•	•	•	•	•	•	•

Implementation of Priority Actions

While there are a number of LNG export facility and pipeline projects announced for B.C., no final investment decisions (FIDs) have been made by the companies involved. In addition, all projects will go through a rigorous regulatory process prior to final approval.

These factors make it difficult to know exactly when construction will start and when projects will be operational. This is a challenge from a workforce strategy perspective – especially one with a priority objective of developing the local labour force to meet the employment needs of the natural gas industry.

With this in mind, the following guidelines are suggested for implementation of priority actions:

- Actions to be initiated immediately include those that:
 - Address barriers to employment;
 - Have a “development” phase and therefore require lead time prior to implementation;
 - Develop information, standards, tools etc. that are foundational to other actions; and/or

Deliver workers to current upstream natural gas operations in-demand jobs.

- Actions to be implemented once a positive FID is made.
- Actions to be implemented once construction starts to focus on ongoing delivery of workers to natural gas related construction and preparation of workers for LNG operations employment.
- Actions that can continue once LNG projects move into operations.

Action	Initiate Immediately	Implement Once		
		Positive FID Made	Construction Starts	Ongoing Operations
Produce regular, realistic labour market and career information for the B.C. natural gas construction and operations.	Ongoing	Ongoing	Ongoing	Ongoing
Develop labour demand information on the employment opportunities associated with the contracted services (indirect jobs) required to support natural gas activity.	Development phase and ongoing	Ongoing	Ongoing	Ongoing
Produce industrial construction workforce projections for northern B.C. to 2025 to provide insights into the level of competition construction of natural gas projects may face.	Development phase and ongoing	Ongoing	Ongoing	Ongoing
Develop and implement a mechanism for regular communication between industry and training organizations regarding training requirements.	Development phase and ongoing	Ongoing	Ongoing	Ongoing
Support the adoption/expansion of school-to-work mechanisms (e.g. dual credit programs) across B.C. to enhance high school graduation rates and youth participation in natural gas related employment.	Development phase	Ongoing	Ongoing	Ongoing

Action	Initiate Immediately	Implement Once		
		Positive FID Made	Construction Starts	Ongoing Operations
Develop and implement an entry-level “Working in the Natural Gas Industry” program to increase participation of under-represented groups including Aboriginal Peoples, women and immigrants into in-demand natural gas occupations. <i>(Immediate)</i>	Development phase			
Initially focused on current employment opportunities	Ongoing	Ongoing	Ongoing	
Develop and implement an enhanced apprenticeship training model and strategy for the natural gas sector construction projects and ongoing operations.	Development phase	Ongoing	Ongoing	Ongoing
Develop tools, materials and dissemination plan to support the application of an expanded B.C. Natural Gas Skills & Qualifications Transferability Matrix.	Development phase	Ongoing	Ongoing	Ongoing
Develop occupational standards and assessment tools for labourer and helper roles.	Development phase	Training Initiated and Ongoing		
Compile existing competency-based skills assessments and develop competency-based tools that currently do not yet exist for high-demand occupations. Provide “gap” training.		Compile and Develop		
Training Initiated and Ongoing	Ongoing	Ongoing		
Develop and implement a post-secondary LNG operator training program.		Development phase	Training Initiated	Ongoing
Provide training to help local businesses participate in procurement processes and grow their business.	Currently in-place and ongoing	Ongoing	Ongoing	Ongoing
Conduct information sessions in southern B.C. and across Canada in regions with higher unemployment rates among in-demand occupations.		Promote current upstream operations employment opportunities	Ongoing	Ongoing
Research best practices for sourcing the workforce required to support the development of major natural resource projects including the relocation of workers, the use of fly-in/fly-out, rotation work assignments, and temporary workers.	Research initiated	Communicate to industry and communities		

Conclusion

The natural gas related investment planned for northern B.C. is unprecedented within the province. From industry's perspective, it is rivaled only by the planned investment and development of the oil sands. The corresponding employment opportunity for the northern region and the province as a whole is tremendous. However, no one solution will ensure that the workforce required to fulfill the LNG opportunity is available, skilled and productive. As this document outlines, multiple strategies and actions on the local, regional, Canadian and international front are required to see the fulfillment of the natural gas related opportunity and benefits.

This tremendous benefit to the economic and social wellbeing of the regional population will not be realized without significant effort. There is a strong desire by all stakeholders involved – industry, government and local communities – to ensure the local labour force and business sector benefit first from natural gas investment in northern B.C..

However, time is of the essence and there are too many potential barriers to wait until the construction of projects is underway before developing local workers and businesses. Immediate implementation of actions in this document is required in order to overcome the issues that have prevented portions of the labour force from participating in regional

employment. If the regional labour force is not ready for employment when industry is ready to hire, industry will be forced to bring the majority of workers from outside of the region.

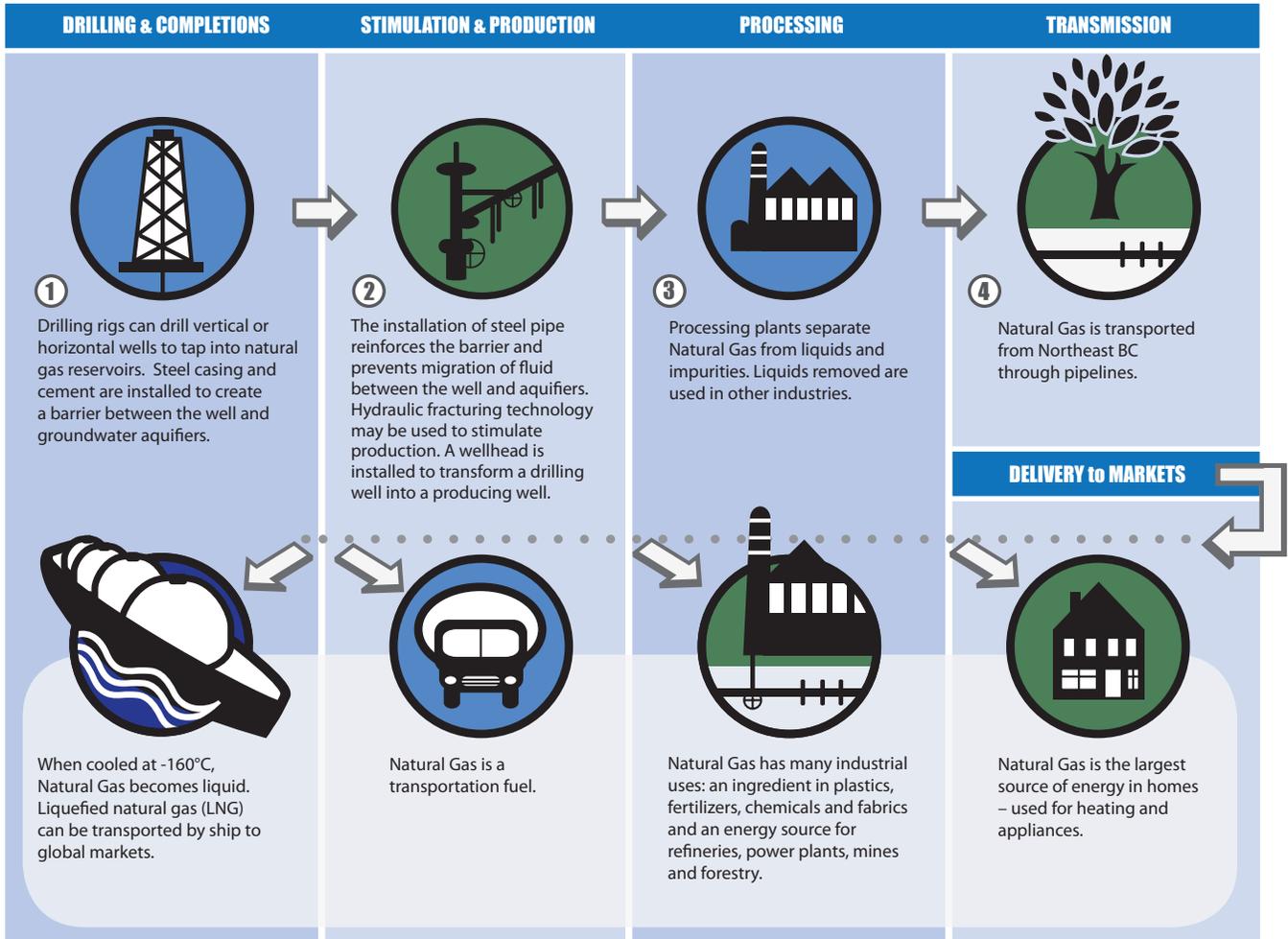
The construction phase is likely to require workers from across Canada and the world to ensure timely completion of projects, which is critical given the global race to provide LNG to fast-growing Asian markets.

The comprehensive actions in the B.C. Natural Gas Workforce Strategy and Action Plan will help industry, government and northern B.C. communities achieve the goal of bringing prosperity to northern populations through sustainable employment.



Appendix 1: Overview of the B.C. Natural Gas Industry

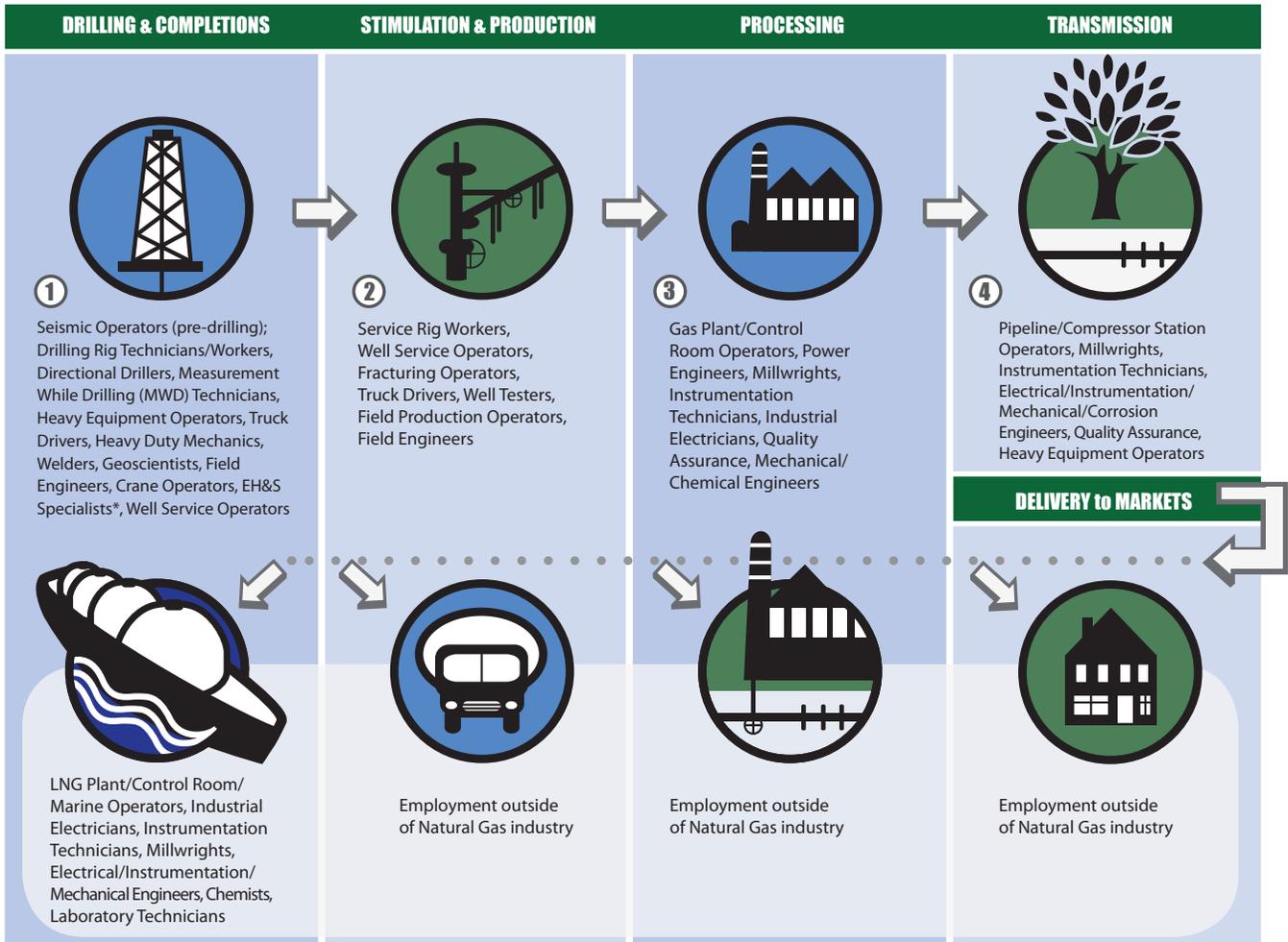
OVERVIEW OF THE BC NATURAL GAS INDUSTRY



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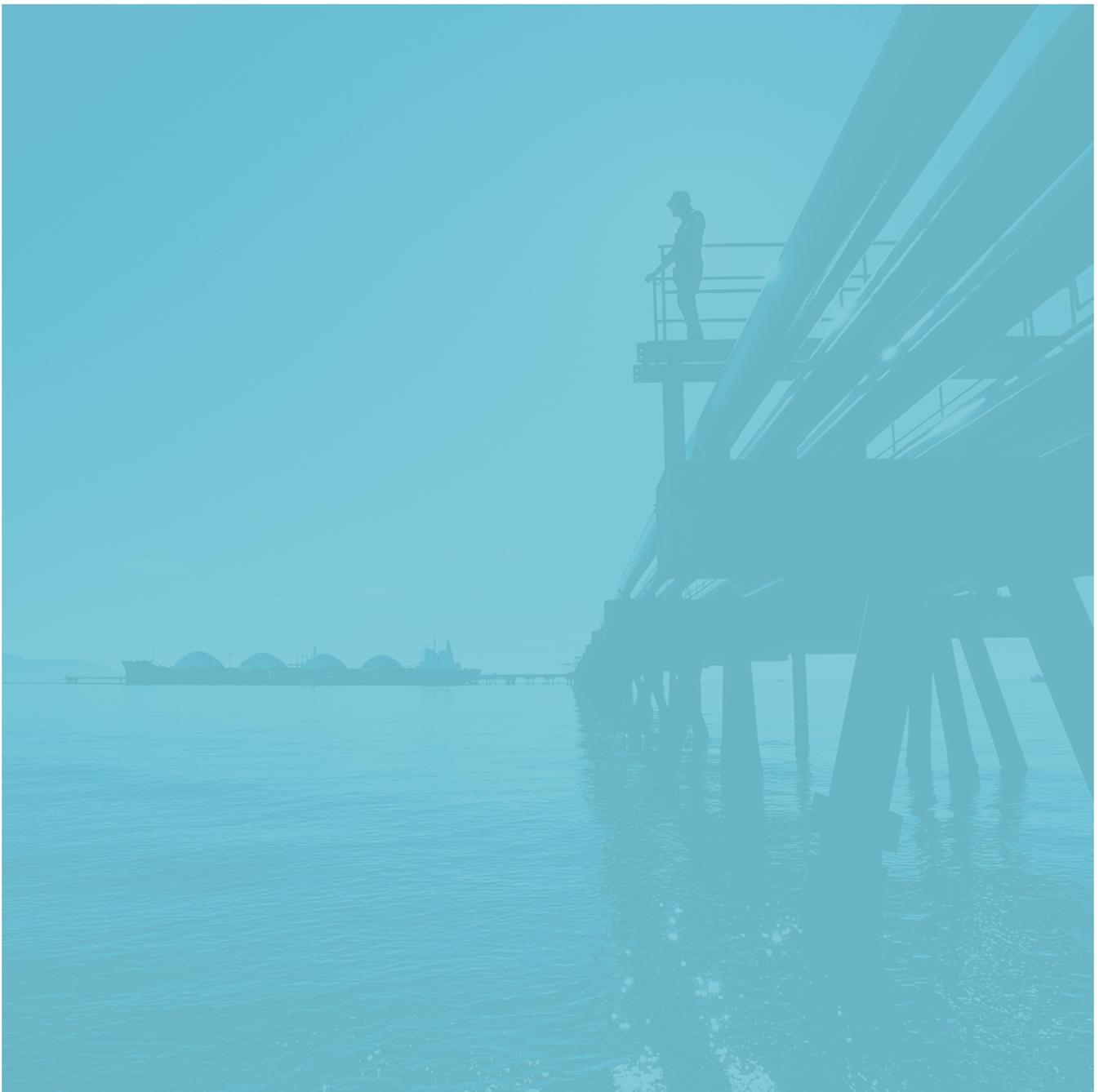
Appendix 2: Key B.C. Natural Gas Industry Occupations

Key BC Natural Gas Industry Occupations



* These specialists are needed in every phase.

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B.C. Natural Gas Workforce Strategy and Action Plan

PRODUCED ON BEHALF OF THE
B.C. Natural Gas Workforce Strategy Committee
July 2013