

The Premier's Liquefied Natural Gas Working Group: Final Report

Prepared for the Honourable Christy Clark, Premier

& the Honourable Shirley Bond,

Minister of Jobs, Tourism and Skills Training and Minister Responsible for Labour



Prepared by the Premier's LNG Working Group

March 31, 2014



**BRITISH
COLUMBIA**

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I. INTRODUCTION:

On September 9, 2013, the Honourable Christy Clark, Premier, convened an unprecedented meeting between herself and the Honourable Shirley Bond, Minister of Jobs, Tourism and Skills Training and Minister Responsible for Labour, with leaders of the organized labour movement, including Jim Sinclair, President of the British Columbia (B.C.) Federation of Labour, and Tom Sigurdson, Executive Director of the B.C. and Yukon Territory Building and Construction Trades Council. Also in attendance were representatives of many of the unions representing a variety of trades in the private sector, including, but not limited to, electrical workers, insulators, plumbers and pipefitters, operating engineers, and painters.

One of the objectives of the meeting was to outline the province's vision for Liquefied Natural Gas (LNG) as a generational opportunity to improve the state of the province's economy and improve the lives of the citizens of the province. In addition, the Premier intended to engage the labour movement in the challenge of ensuring the training and workforce opportunities associated with LNG go to British Columbians first. As a result, the Premier proposed the establishment of a government/industry/organized labour/First Nations working group to work together, under specific Terms of Reference (see Appendix I), to focus on how to work together to solve some of the complex challenges associated with the LNG opportunity.



The Premier's challenge was accepted by the represented members from organized labour, industry, and First Nations with all groups recognizing the significance of the economic opportunities at stake for British Columbians in terms of economic development, and creating a skilled workforce that can help to develop a myriad of other projects that are critical to B.C.'s future success.



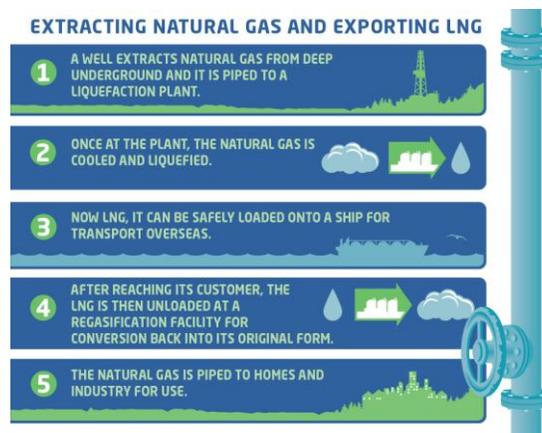
This unprecedented Working Group was established with representation from the groups identified below. Appendix II provides detail on each of the representatives for the organizations listed below.

Government	Industry	Labour	First Nations
Ministry of Jobs, Tourism and Skills Training and Minister Responsible for Labour (Labour Division and Labour Market and Immigration Division)	Progress Energy Canada Ltd. and Pacific NorthWest LNG	United Association of Journeymen & Apprentices of the Plumbing & Pipefitting Industry of U.S. and Canada, Local 170	Haisla Nation
Ministry of Finance (Public Sector Employers' Council Secretariat)	Chevron Canada Ltd. (Kitimat LNG)	B.C. and Yukon Territory Building and Construction Trades Council	
Ministry of Advanced Education (Strategic Policy and Planning)	BG Canada (Prince Rupert LNG)	B.C. Federation of Labour	
Ministry of Natural Gas Development (LNG Task Force)	Shell (LNG Canada)	B.C. Government and Service Employees' Union	
	Spectra Energy	Construction & Specialized Workers' Union, Local 1611 (Labourers)	
	TransCanada	Sheet Metal Workers' International Association, Local 280	

II. BACKGROUND AND CONTEXT:

The LNG Opportunity:

Over the past year, much has been written in a variety of forums about the LNG opportunity that exists in B.C. LNG has the potential to be the start of a new industry, leading to the biggest energy development projects in B.C.'s history. The opportunity has the potential to reshape B.C.'s economy as well as transforming its labour force, leaving a legacy for skills development, and providing high paying employment opportunities for generations to come.

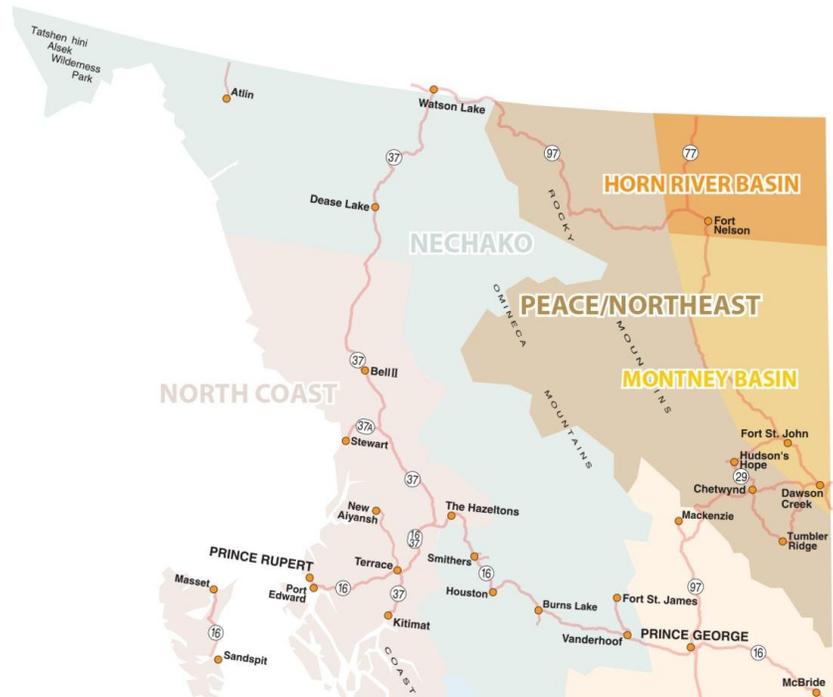




British Columbia is an attractive location for potential LNG investments and facilities given its proximity to Asia, large and stable reserves of natural gas and a strong and predictable regulatory regime. By leveraging these advantages, there is an opportunity to realize significant increases in provincial government revenues while at the same time creating thousands of high paying jobs with transferable skills.

As of March 2014, 13 LNG export facilities have been proposed or announced in B.C., representing multiple joint venture partnerships with international, domestic, and First Nations interests. The full value chain for these projects includes the development of natural gas resources in northeastern B.C., construction and operation of natural gas pipelines to the northern B.C. coastline, and the construction and operation of LNG facilities.

Most of the proposed project sites are centered on the northern B.C. coastline. Four projects have been proposed within the District of Kitimat, two in the Port of Prince Rupert, and two LNG proponents have signed sole proponent agreements that provide the companies with the exclusive right to negotiate a long-term tenure for an LNG facility at Grassy Point. Two other sites have been proposed outside of the northwest – one near Squamish and the other in Campbell River. Several new proposed projects have yet to determine a site. As of March 2014, 11 companies had applied to the National Energy Board for a licence to export LNG with seven licences granted. Finally, as of March 31, 2014, there have been two LNG facilities proposed for domestic use purposes – fuelling the transportation sector, marine sector, and heavy machinery (see Appendix III for details).



Further detail on the LNG opportunity can be found in the references included in Appendix IV.

The LNG Challenge:

LNG development exists within a global market that is defined by both the competition to establish long-term supply contracts with foreign markets by providing LNG at a competitive cost and the requirement to attract a skilled labour pool that is essential to bringing LNG to market. The labour market, both domestically and internationally, is highly competitive. LNG as an industry has various projects that are seeking to attract skilled and trained labour, and there is also a level of competition external to the LNG sector that sees other major industrial projects within B.C., Canada, and around the world also working to attract and secure many of the same skilled workers. Adding to these challenges are other considerations that include the federal and provincial environmental assessment and permitting processes, the development of a clear and competitive fiscal framework for the LNG value chain, and the importance of gaining necessary support for the projects from First Nations, local communities and other stakeholders.

Further, attracting and retaining the required skilled labour (whether unionized or non-unionized) remains one of the largest challenges for the LNG industry. This includes engaging under-represented communities in the north of the province through to encouraging an even more mobile workforce that is able to transition from project-to-project as necessary. In light of the workforce challenges, the Working Group unanimously supported the principle of ensuring that as many British Columbians and Canadians as reasonably possible benefit from the skills training and employment opportunities that the full LNG value chain (upstream, pipelines, and LNG facilities) presents. The Working Group discussed the importance of the mobility of labour across B.C. and Canada to the success of the LNG opportunity. The Working Group also discussed the challenges associated with the use of temporary foreign workers to develop the LNG opportunity such that there was agreement to understand the lessons and best practices from other projects as a way to limit their use, but also to plan accordingly for their use if and when needed.

Top 10 Construction-Related Jobs with the Greatest Demand

- 1. Steamfitters & pipefitters**
- 2. Construction traders helpers & labourers (including riggers)**
- 3. Welders**
- 4. Concrete finishers**
- 5. Heavy equipment operators**
- 6. Carpenters**
- 7. Truck drivers**
- 8. Purchasing agents & officers**
- 9. Gas fitters**
- 10. Crane operators**



* Sourced from the B.C. Natural Gas Workforce Strategy and Action Plan July 2013

Major Projects Underway in B.C. – Now and to 2023:

The Working Group understands that the development of a new LNG industry is not occurring within a vacuum. Specifically, between now and 2023, there are a variety of major projects either underway or in the planning phase. Many of these projects will compete for the same skilled tradespersons and other skilled occupations – all at a time when B.C. already is facing challenges linking southern B.C. workers with northern B.C. jobs, which is compounded by an actual shortage of skilled workers needed to perform the work. Also of note is that many of these projects will be occurring at the same time, albeit in different phases, which presents a potential opportunity for the sequencing of labour.

To provide some context to what this will look like, the Working Group reviewed the workforce needs estimated for major projects in northern B.C. provided by the Ministry of Jobs, Skills Training and Tourism and Minister Responsible for Labour (JTST). The Ministry updates this information periodically and, as of February 2014, provided the following description for major projects across all sectors and all regions of the province:



between 2013 and 2023, there are an estimated 47 projects planned worth more than \$500 million each, representing an expected total investment of \$165 billion (more information on major projects is available [here](#)). Each of these projects, like LNG projects, has a construction phase and an operations phase so will require significant skilled labour at various points during construction (although it should be noted that not all projects may come to fruition).

In addition to the planned LNG facilities and their associated upstream activities in B.C., there are several types of major projects that will be undertaken in B.C. and other jurisdictions in western Canada concurrently over the next ten years (thus, the competition for access to skilled labour). Key active sectors set to expand with project development include hydro-electricity (e.g., Peace River Site C Dam, Northwest Transmission Line, and Kemano Tunnel), oil and gas (e.g., Cabin Gas Plant, Fortune Creek Gas Plant, and Dawson Liquids Extraction Project), mining (e.g., Quintette Coal Mine, Red Chris Porphyry Copper/Gold, Avanti Kitsault, and Blackwater Gold), and other projects (e.g., Rio Tinto Alcan Kitimat Modernization Project and Prince Rupert Port Expansion). While construction timing will fluctuate, each project will be competing for highly qualified skilled and less-skilled labour at roughly the same period in time.

What is significant is that the peak years are as early as 2016 and 2017 (subject to final investment decisions) when thousands of construction jobs are projected to be needed. While many of these jobs will be tradespersons such as pipefitters, welders, electricians, carpenters, and millwrights, there will also be a need for skilled labourers as well as workers in a variety of occupations, including engineers, transportation and logistics, operators, technologists, and technicians (e.g., oil and gas well drillers), and management/supervisory personnel.



Labour Supply Conditions in Northern British Columbia:

The next component of the LNG challenge relates to the labour supply conditions, particularly in northern B.C. This is a key risk factor for the LNG proponents for a number of reasons. The large number of job opportunities in the north, including for LNG, present a challenge when one considers the size and make-up of the workforce in the northern part of the province. In general, the labour market in the north features a much smaller population than in the southern areas of the province. According to data provided by the Labour Market and Immigration Division of JTST, the northern B.C. labour force is estimated at 80,000 people which is 3.7 percent of the provincial labour force.

According to the same data, the median age in the north is 37 compared to the rest of the province which has a median age of 41. The northern workforce has a lower percentage of immigrants (9 percent compared to 29 percent provincially) yet a higher percentage of First Nations (28 percent compared to 5 percent provincially). In the north, unemployment for First Nations people with a trades or apprenticeship certificate is 21.9 percent and 8.3 for non-First Nations people. There is also an opportunity to address the workforce challenges of northern B.C. when one considers that there will be 25,000 new entrants to the labour market over the next decade as children graduate from the K-12 system. Further, there is the challenge of the mobility of labour as employers aim to facilitate the movement of people to where the work is (in this case northern B.C.). This challenge is not unique to B.C. as it exists across Canada and other developed nations.

Essential skills training for many British Columbians may be required to ensure access to this work. In order to maximize local hiring for LNG projects, this training needs to start well in advance of construction.

The Workforce Needs to Build an LNG Facility:

To understand the estimated workforce needs required to construct and operate one LNG facility and related infrastructure (upstream facilities and pipeline), the Working Group reviewed a theoretical model based on some of the past experiences of the Working Group's industry representatives. This model takes a five-year view, and assesses the pre-construction, construction, and operational phases. In doing this, it creates an approximation of the number and types of trades that are needed in each year and in each phase of a project. The aim of this approach is to create a framework that can be extrapolated to estimate the needs of multiple LNG facilities and pipelines, regardless of the number of projects that are realized, as well as the numbers and types of skilled labour that would be needed at any given time in construction. As final investment decisions are still pending for proposed projects, this approach was seen to be more flexible to determine labour needs and to inform how to maximize the existing workforce (and thus determining approximately how many more workers could be needed).

It is instructive to go one step further and analyze the needs to build one LNG facility. One of the LNG proponents shared detailed conceptual/approximate data to the Working Group showing the craft trade breakdown for the building of a hypothetical LNG facility. The LNG facility is for two "trains" producing a total of 8.5 million metric tons of LNG per annum. Note that a "train" is an LNG plant's processing unit which liquefies and purifies the natural gas.



On-Going Work on LNG: "B.C. Natural Gas Workforce Strategy and Action Plan":

In March 2012, the B.C. Natural Gas Workforce Strategy Committee was formed to review workforce needs related to LNG projects. Comprised of industry, government, First Nations, and the Resource Training Organization, the Committee issued a [Strategy and Action Plan](#) in July 2013 which highlighted high-level strategies and specific actions it views as being required to build capacity within industry, labour supply partners, and communities to address current and future LNG-related construction and operations workforce requirements.

The Strategy and Action Plan also examines the potential labour supply that will be available for the construction and operation of LNG facilities. One of the key observations is that 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" (from page 3 of the Strategy and Action Plan). The paper then identifies a series of actions designed to increase local talent (e.g., by addressing barriers to local labour force participation and by developing skills and qualifications in local labour pools) and to attract and retain talent from other locations (e.g., by relocating workers from other regions and/or jurisdictions). The Strategy and Action Plan informed the Terms of Reference for the Premier's LNG Working Group.

III. TERMS OF REFERENCE: PROPOSED STRATEGIES AND SOLUTIONS:

As noted above, following the Premier's meeting with private sector union leaders on September 9, 2013, Terms of Reference (TOR), which had been proposed at the meeting, were finalized and agreed by the Working Group (see Appendix I). An initial meeting was held on November 12, 2013 in Vancouver, followed by two meetings in each of December 2013 and January 2014. The purpose of the first meeting was to set the context for the task of the Working Group, including a presentation on the labour market challenges associated with the LNG opportunity. The two December and two January meetings focused on the TOR and the plan for the development of the interim report which was submitted on January 31, 2014. The two February and two March meetings focused on the development and content of this final report.

It is important for the acceptability of this final report by each participating organization to comment on how the Working Group approached its analysis of the TOR and the solutions and opportunities they present. There was unanimity on how to approach the task and the Working Group wanted to have an open and frank exchange of ideas. To support that dialogue, the Working Group agreed on the following principles. The first principle was that no idea or solution would be attributed to any member of the Working Group or representative organization. The second principle was that the interim report would not include specific recommendations or advocate for proposed solutions and opportunities. There was agreement that this final report would be the place for any recommendations or actions for consideration and implementation by government, industry, organized labour, and First Nations. Third, any recommendations or actions within the final report are expressly acknowledged as being non-binding on any members or organizations within or beyond the Working Group.

There were other important notions discussed in the Working Group's meetings. First, there was agreement that the industry representatives would provide as much information as possible to facilitate open discussion, but there would not be any disclosure of proprietary information. In addition, industry representatives were not asked to do anything to harm their competitive or negotiating position (in any respect). As noted in the meetings, there is a shared desire and some measure of agreement to work together on certain elements of how to address the skills training and workforce challenges presented by the LNG opportunity. There is also a very clearly expressed desire amongst all members of the Working Group that the LNG opportunity in relation to workforce needs should benefit as many British Columbians as reasonably possible. It was viewed by the entire Working Group that LNG facilities should be built and operated, where practical, by as many workers living within local communities and from within B.C and Canada as possible, followed by foreign workers either through immigration or foreign worker pathways. The Working Group viewed its structure and function as providing the opportunity to lay some of the groundwork for these shared objectives.

The Working Group agreed that the TOR should be split into three distinct groups by reviewing the first paragraph as TOR #1, paragraphs two and three together as TOR #2 (due to the linkages between them), and the final paragraph as TOR #3.

The interim report contained a summary of the discussion of a number of possible solutions and opportunities identified by the Working Group to each of the three TOR, along with a series of questions about each solution or opportunity. The thinking of the Working Group prior to the completion of the interim report would be that we would work on examining the utility of each of the solutions and opportunities to determine which would be priorities for the final report and which would fall away. However, in the meetings after the finalization of the interim report, it became clear to the Working Group that each of the categories of possible solutions and opportunities have significant value and should be pursued to the extent possible. In addition, what also became clear was the commitment from each of the Working Group participating organizations, notwithstanding the TOR noting a final report due on March 31, 2014, to continue to work together beyond this date. There is no question that the participating organizations have different mandates, priorities, and stakeholder interests – yet, over the term of our work together, there was clearly growth in the commitment to work together, both within groups (e.g., industry participants) and across groups (e.g., organized labour with industry). While each of the organizations took their participation seriously and were careful to note areas of concern, they were all surprised by the number of issues on which they agreed in relation to the TOR and the importance of making progress not only in this March 31, 2014 final report – but beyond and into the future for the benefit of all British Columbians.

Before proceeding with specific strategies and solutions related to the TOR, there is one over-arching recommendation that the Working Group identified as being fundamentally important to realizing a successful LNG industry and creating actual LNG-related jobs for British Columbians. As indicated above, the Working Group was established in September 2013 with this final report due on March 31, 2014 which effectively makes the Working Group time-limited. However, there is agreement that structure is necessary going forward, not only to follow-up on the recommendations in this report, but also to maintain and enhance the positive relationships and significant progress that has been achieved to date.



The Working Group agreed that this structure needs to have equal representation from industry (including contractor associations), organized labour, First Nations, and governments (provincial and federal). In addition, the group agreed that this structure needs to be established as quickly as possible after March 31, 2014. The Working Group noted that without the creation of a structure prior to July 2014, there will be significant limitations in relation to being able to continue collaborating on issues related to skills training and workforce planning to support the construction and operation of LNG facilities. The Working Group is of the view that a fragmented and uncoordinated approach to the skills training and workforce planning issues could inhibit the success of LNG projects, creating ineffective approaches to training and a risk of an increase in costs.

In addition, a challenge relates to the coordination and collaboration of LNG workforce activities. There are many LNG workforce-related initiatives underway or starting in B.C., including the B.C. Natural Gas Workforce Strategy Committee and the Canadian Apprenticeship Forum. LNG workforce planning and strategy development should be coordinated and linked by stakeholders to maximize LNG opportunities. The precise structure and membership along with issues of funding and Terms of Reference would be determined at a later date.

- ✓ **Recommendation #1:**
- ✓ **Develop a structure with equal representation from industry (including contractor associations), organized labour, First Nations, and governments to participate and enable the skills training and workforce planning issues leading to employment in the LNG opportunity on an on-going basis after March 31, 2014. The structure, membership, and Terms of Reference should be established no later than July 1, 2014 in consultation with the members of the Premier's LNG Working Group. In addition, the structure should be established in coordination with other LNG workforce activities already underway.**

TOR #1: *Propose strategies and solutions to fill skills gaps via new entrant skills training and upgrading skills of current members as identified in the B.C. Natural Gas Workforce Strategy and Action Plan.*

This TOR recognizes that there are labour and skills gaps that exist to construct and operate LNG facilities – regardless of the final number of facilities constructed in B.C. As noted above (on page 6), the Strategy and Action Plan has developed a number of action items that are important to facilitate building the necessary capacity and labour supply. Skills gaps will exist for apprenticed labour, other occupations, and skilled labour. This TOR also notes that skills gaps could be filled with new entrants to the labour force and by upgrading the skills of current members of the workforce (including those outside the membership of private sector unions). The Working Group has identified potential strategies and solutions in three categories to support this TOR – training; education and career path mapping; and planning for apprenticeships and skilled labour.

Training

A significant gap identified by the Working Group is the need for training. As outlined above, there are labour supply challenges to meet the workforce needs for both the construction and the operation of LNG facilities. It also takes significant time to attract, recruit, train (both technical instruction and on-the-job), and certify a worker in a trade. In addition, there are barriers to entry into certain trades and other occupations that limit access and barriers that delay completion of training. These barriers include requirements for a driver's licence, accommodation, and living expenses while training.

Recognizing that final investment decisions by LNG proponents are pending and that construction and operation may not come to fruition for a number of years, the critical point that the Working Group emphasizes with respect to training is that the planning for training needs to begin immediately. The importance of beginning training now is not just to have a robust and qualified workforce in place to meet demand, but to have projects that allow for on-the-job training for those who are still in the learning process (e.g., apprentices). The Working Group also recognized that there are a myriad of training opportunities that exist today that could and will be leveraged into the overall plan for staffing proposed LNG projects.

Before training can begin, it is important to know the workforce requirements. As described earlier under “The Workforce Needs to Build an LNG Facility”, we can begin to project the types and numbers of jobs needed and by when they will be needed. The training needs should also take into account the fact that, as noted above, there could be multiple projects on-going over the next several years that may require the same kind of workforce or, opportunistically, may provide some of the necessary workforce because of the timing of completion of certain work on the projects. Training is critical to improve the working lives of British Columbians and Canadians by providing the skills necessary for future opportunities like LNG. While not focused exclusively on apprenticeship training, the Working Group also noted the importance of examining what a realistic goal for apprenticeship training numbers might be. As noted above, the necessary training does pertain to skilled trades (apprenticeship) and to other occupations and skilled labour.



Another training challenge is that LNG facilities deal with flammable and combustible hydrocarbons. As a result, it is important that the workforce be properly trained and skilled in their safe operation.

- A. The Working Group is of the view that a coordinated and planned approach to training is crucial to the successful development of the LNG opportunity. This means determining what modes of training are needed, identifying potential gaps, and locating potential opportunities already in existence to better those currently in the training system with potential on-the-job learning experiences. At the same time, training needs to start as soon as possible to ensure that there is a large enough and sufficiently skilled workforce in place to support the proponents once they are ready to break ground on a project. The opportunity that exists with training is that while it enables the province to meet the LNG challenge, it can also establish a legacy in how it can result in a skilled workforce for the future.

To facilitate the development of training programs, the Working Group identified the opportunity to develop and share an inventory of workforce needs to support the construction and operation of multiple LNG facilities. The logic of an inventory includes facilitating the transition of workers from one project to another to reduce training needs. In order to do this, the Working Group discussed the importance of establishing one comprehensive and accepted data source (e.g., [BuildForce Canada](#)).

Another opportunity would be to determine the number of training placements already available in B.C. along with the number of people already in training and apprenticeship programs. It would also make sense to determine the role for organizations such as post-secondary institutions and the [Industry Training Authority \(ITA\)](#) in working with industry and organized labour on trades training to meet the LNG opportunity. The ITA is funded by government and leads and coordinates B.C.'s skilled trades system, including the issuance of credentials and the management of apprentices. Note that as of March 31, 2014, the ITA is going through a review of its role and function as directed by Minister Bond on August 21, 2013. There was discussion about the importance of the ITA Apprenticeship Coordinators and the role they can play in increasing the number of successful trades graduates.

The Working Group also identified the importance of engaging First Nations and training institutions to determine what role they can play in training. Finally, it was suggested that the province consider initiating discussions with foreign governments (e.g., Australia, Trinidad) about options to train B.C. workers in the operation of LNG facilities.

- ✓ **Recommendation #2:**
- ✓ **Begin planning and training British Columbians immediately for the LNG opportunity.**

B. The skilled labour needed to construct, maintain, and operate LNG facilities is part of a larger labour pool that may be working on many of the other major industrial projects within B.C. and across Canada. This may result in workers in the skilled trades being mobile as they move from project to project. The need for a mobile workforce also means that workers need to have skills that are applicable to a variety of industries. For example, a pipefitter working on a pipeline may also be able to apply the trade to a mining project with minimal upgrading. With this in mind, there may be potential to better coordinate training across B.C. and Canada recognizing that the workers who perform work in one area may make up the workforce on another project only a few years later. In addition, there may be an opportunity to coordinate efforts by bringing industry resources and expertise together with in-house training and public and private sector training to maximize benefits.

An additional consideration is whether LNG proponents would be willing to offer job opportunities to workers who may move on to other projects with other proponents and/or other industries. It would also be worth discussing whether B.C. can augment, leverage, and/or promote the work already done by other jurisdictions and organizations to create a national inventory of skilled and other job opportunities and/or available apprentices. The Working Group also discussed whether government, industry, organized labour, and First Nations training initiatives can be combined to be more efficient. The Working Group also queried whether it would be possible to leverage industry funds with funds provided by the federal government through the Labour Market Agreement and Labour Market Development Agreements to create and fund industry specific-training programs.



There are likely lessons to be learned from the experience of LNG and major projects in other jurisdictions (including Alberta) so that B.C. can better coordinate workforce training and planning. The Working Group discussed how LNG proponents can engage contractors to manage the design and build of major projects on their behalf. These contractors, also referred to as EPCM (Engineering, Procurement, and Construction Management), engage in work that can include the hiring and management of subcontractors, through to managing procurement, construction work, and permitting. Generally speaking, the EPCM is active in the pre-construction and construction phases (or until an LNG facility becomes operational when the LNG proponent takes it over). As the EPCMs are responsible for managing a huge workforce comprised of thousands of skilled workers, including apprentices, there may be potential for the EPCMs to support the high-level training of various skilled professions, including apprenticeships that in turn can translate to an available workforce that can fill some of the operational jobs once construction concludes.

- ✓ **Recommendation #3:**
- ✓ **Training should be coordinated across B.C. and Canada to maximize the effectiveness of the existing labour pool and lead to employment.**

- C. Prerequisites like education and certification (e.g., driver's licence, first aid) are critical to developing workers who likely will have a higher degree of success once they get into a training program and then onto the job. However, these same requirements can also serve as a significant barrier and even as a deterrent to those who are interested in a career in the skilled trades. These barriers can be even more daunting if it is unclear what is required and how requirements can be obtained. There are programs that provide life skills development for youth from under-resourced communities that have reduced barriers and enabled access to apprenticeships in the building trades (e.g., the [Hammer Heads](#) program established by the Central Ontario Building Trades). [BladeRunners](#) is another example of a program that provides basic skills training and job readiness for at-risk youth (aged 15 to 30) as is the B.C. Construction Association's [Skilled Trades Employment Program](#).

It is also important to ensure the capacity for literacy and essential skills development to support local and regional work-based training and employment for LNG facilities. An example is [SkillPlan](#) a not-for-profit organization based in B.C. that provides learning solutions in the construction industry and in other sectors. SkillPlan works with employers to develop the skills of workers, including literacy and numeracy skills. SkillPlan has a Board of Directors that is made up of employer and union organizations that financially support the organization.

To support this work, it would be helpful to identify the prerequisites for entry into trades training along with any barriers other than job placements to entry into trades training. The next challenge would be how to address these prerequisites and barriers for those who are interested in seeking training in the trades.



- ✓ **Recommendation #4:**
- ✓ **Identify and remove barriers to entry into training while supporting literacy and essential skills development to support local and B.C. work-based training and employment.**

D. It is well known that government provides significant funding in a variety of ways as an investment in training – from the K-12 system to advanced education and to the ITA. At the same time, other groups within industry and organized labour provide various degrees of funding and training support, all with differing results. There may be an opportunity to leverage resources by bringing industry resources and expertise together with in-house training and public sector training to maximize benefits. In discussing the issue of investing in training, the Working Group noted the importance of identifying ways to more effectively invest in training and determining how successful investments in training could be leveraged. The objectives are to make sure the right kinds of training are being delivered in ways that maximize results, to identify opportunities for industry to participate in training, and to learn from the training expertise and experience of the building trades unions.

✓ **Recommendation #5:**

✓ **Increase the efficiency and effectiveness of the investment in training by leveraging successful government, union, and private training programs.**

Education and career path mapping

The discussion around this principle focused on how to ensure people are aware of the career opportunities that exist around LNG, whether it is youth still in school or those in trades training now or those in industries where work is ending.

A. High schools, colleges, and cultural centres are the best placed institutions for identifying people who have potential interests in the trades and in non-apprenticeable trades. Apprenticeship programs could start as part of some high school curriculums and high school counsellors and technology educators could serve as key contacts. Colleges provide the technical training that is required to complete apprenticeship programs or other programs to match workers to job opportunities. Multi-cultural organizations and immigrant service providers can be resources for engaging people who have experience in the trades in other countries about working in B.C. Campaigns aimed at these institutions present an outreach opportunity to the potential LNG workforce. The Working Group also discussed how career fairs provide an opportunity to engage people interested in the LNG opportunity; however, too often career fairs happen without industry participation and/or with no organization in attendance to actually offer tangible employment opportunities.

In addition, it is important to target technology education classrooms and career education coordinators in high schools and technical institutions for support and marketing. Teachers in technology education programs at all levels can provide coordinated training and mentorship opportunities. Technology programs within all educational institutions may be the most fertile recruiting grounds for the LNG

opportunity. The students in these programs are already actively engaged in learning about the trades and technical occupations and in many cases may be working towards an apprenticeship designation. There could be benefits from engaging the technology education teachers in these programs as well as career education counsellors to promote the LNG opportunity and to help prepare students for a career in the sector.

✓ **Recommendation #6:**

- ✓ **In conjunction with recommendation #7, industry, governments, organized labour, and First Nations should partner to conduct campaigns and career fairs in high schools, colleges, and cultural centres on the LNG opportunity.**

B. One of the biggest challenges facing major projects is finding ways to attract the workforce to where the work is actually located. Many of the training institutions and opportunities are located in southern B.C. which is away from the location of the work. However, programs like Northern Opportunities afford the chance to train in the north and stay in the north. [Northern Opportunities](#) is a partnership of three northeast B.C. school districts, Northern Lights College, First Nations, and industry that provides “young people with a seamless learning pathway from secondary school to post-secondary training leading to career success.” There may be an opportunity to expand this program into the northwest of the province. In addition, the [Coastal Pathways Partnership](#), a program in the northwest that provides skills training initiatives and projects that benefit the Northern Coastal region, could be expanded. One of the objectives would be to enable employers to take people from these programs and match them to job opportunities.



At the same time, there are relatively untapped labour pools such as some First Nations communities that may be well placed to realize benefits from participating in the LNG opportunity. Another challenge is ensuring that those prepared to enter the workforce understand the types of careers available for skilled and certified labour. An opportunity exists to create awareness in northern and rural B.C. communities about how to pursue meaningful employment and/or a career in the trades. A further opportunity would be to identify other cost-effective programs available that would accelerate young people’s connection to the workplace, such as the [Aboriginal Training and Mentoring Association](#).

✓ **Recommendation #7:**

- ✓ **Promote awareness of job opportunities in B.C., including work-based training with a focus in rural, northern, and First Nations communities.**

Plan for apprenticeships and skilled labour

Creating a body of skilled workers is one of the more important legacies that the LNG opportunity can create for British Columbians. Apprenticeship programs often take four or more years to complete. Of this, roughly fifteen percent of the time is spent in technical training, which is learning offered in an institution like a college or a training facility. The other 85 percent is hands-on learning as apprentices engage in on-the-job learning with more experienced mentors who are able to teach apprentices about the trade. One challenge that has been identified is those in apprenticeship programs find it difficult to get the on-the-job experience. At the same time, industry, which often is responsible for offering the jobs, does not have access to information about those people who are in apprenticeship programs and are seeking employment opportunities. It is also important to recognize that the LNG proponents do not have apprenticeship placements available at this time. As noted above, the outstanding review of the ITA will be an important piece in the planning for apprenticeships and skilled labour.

Similar to apprenticeships, creating trained and certified workers in other skilled professions (e.g., engineers, technologists, and truck drivers) requires planning and coordination to ensure they are available when needed.

- A. The Working Group discussed the importance of establishing an inventory of individuals currently in apprenticeship programs who are seeking employment and an inventory of other non-apprenticeship skilled workers seeking employment. The challenge is to determine how to gather this data and whether there is a role for the ITA or the province (e.g., [WorkBC](#)). In addition, the building trades unions are engaged in the training of apprentices and have the ability to share information. The opportunity exists to provide individuals in apprenticeship programs with access to better information about work placements and on-the-job training opportunities.

The Working Group also noted the importance of identifying journeypersons in the system who are available to provide mentoring and on-the-job training to apprentices. Without an adequate supply of journeypersons, the ability to train and certify apprentices can be severely restricted. It is not clear if a natural ratio of journeyperson-to-apprentices that balances the quality of training, productivity, safety, and labour costs can be created.



- ✓ **Recommendation #8:**
- ✓ **Establish an inventory of individuals currently in apprenticeship programs and other non-apprenticeship skilled workers seeking employment. Include in the inventory journeypersons who are available to provide mentoring and on-the-job training to apprentices.**

B. The Working Group discussed whether it is possible to increase apprenticeship spaces and other skilled worker positions in B.C. by leveraging other projects, including public infrastructure projects. These projects have the potential to provide opportunities to apprentices by providing the on-the-job training they need to complete their certification. Once apprentices are certified, these workers could potentially transition to other major projects like the construction and operation of LNG facilities. An assessment would be required as to whether government or other public works projects provide suitable opportunities to employ apprentices or other skilled workers. In addition, an assessment must be made as to whether it is possible to have a minimum number of apprentices on certain public infrastructure projects or other non-public projects, including LNG construction (while noting that such work is likely to be performed by third party contractors). Specifically, the Working Group agreed to aspire to a goal of having 25 percent overall of the apprenticeable trades workforce on LNG-related construction projects.

The Working Group also discussed other opportunities for apprentices and noted that government should consider having a minimum number of apprentices on public infrastructure projects.



The Working Group also discussed whether funding for apprenticeships and training to support the LNG opportunity can come from industry and/or government. In addition, there was some discussion about a need for investment in facilities to house training opportunities.

- ✓ **Recommendation #9:**
- ✓ **Aspire to a goal of having 25 percent overall of the apprenticeable trades workforce on LNG-related construction projects and whether funding for apprentices can come from industry and/or government. In addition, government should consider having a minimum number of apprentices on public infrastructure projects.**

C. Some private sector unions have very high apprenticeship training completion success rates. Some of the private sector unions have joint training boards that include representatives from employers and organized labour that collaboratively coordinate and deliver training. Included in these apprenticeship training programs are annual investments in the millions of dollars. There are lessons to be learned from the approach that unions are taking which could be applied with success to other institutions. In addition, it should be noted that there are specific projects in place that have established training and employment benefits for First Nations communities.

Another of the strategies identified by the Working Group is to consider re-locating training to areas where jobs are needed. Enabling training to occur near worksites may encourage workers to stay in the area after completion of training and may reduce the likelihood of those workers returning to other areas of the province. If done in conjunction with LNG facility and infrastructure development, training near work locations could encourage the permanent redeployment of workers and their families into northern and rural B.C. once training is completed. A model to consider is the UA Piping Industry College of B.C. (UAPICBC) which supplies highly trained and qualified journeypersons and builds capacity in skilled labour in the construction industry in B.C. The model begins with promoting and advocating for careers in the trades followed by individualized action plans and monitoring for students to ensure their success. The UAPICBC has a significant network of employer and training partners which allows flexibility and expansion across the province. In addition, the UAPICBC offers apprenticeship training in plumbing, sprinklerfitting, steamfitting, and welding in two locations in northern B.C. (Fort St. John and Kitimat)

An opportunity exists to review how the profile of northern training institutions can be enhanced, including by identifying a role for private sector unions to enhance the profile of these institutions. Further, consideration could be given to whether there are training opportunities that could be shifted to different locations in B.C.

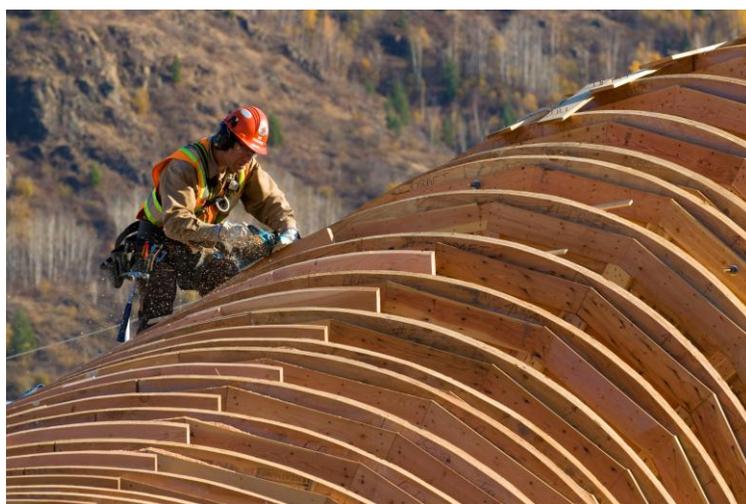
- ✓ **Recommendation #10:**
- ✓ **Review the approach used by private sector unions with respect to apprentices and by First Nations with respect to training to determine if their approach can be improved or applied more broadly.**

TOR #2: *Propose roles for private sector unions in recruiting members from southern British Columbia to the north to ensure British Columbians are first in line for these positions. Propose roles for private sector unions in accessing skilled workers from across Canada and the United States.*

This TOR is based on the recognition that private sector unions have experience and a track record of success in the mobility of its members to projects within regions and across jurisdictions, including into Canada from the United States. The Working Group has identified potential strategies and solutions in five categories to support this TOR – identifying organizations that have delivered via a mobile workforce; improving the perception of rural and northern B.C.; making LNG jobs attractive; understanding the role of private sector unions in training; and supporting workers from other jurisdictions to stay in B.C.

Identify organizations that have delivered by way of a mobile workforce

The development of LNG facilities is not the first development in B.C. to be constructed by way of a mobile workforce. There are examples of projects that have been completed or are currently underway in B.C. that have unionized and non-unionized workforces made up, in part, of workers from other areas of the province and indeed other jurisdictions. For example, the Kitimat Modernization Project (KMP) at Rio Tinto Alcan is a US\$3.3 billion project underway to modernize the aluminium smelter and is being constructed by way of a Project Labour Agreement with 16 building trades unions. At the peak of construction in the summer of 2014, there may be just over 3,000 workers. In the fall of 2013, there were just over 2,000 workers, with 92 percent from Canada. One in three of the workers were local (including five percent First Nations of which the majority are from the Haisla Nation). The balance of the workforce was made up of 42 percent from elsewhere in B.C., 17 percent from elsewhere in Canada, and eight percent from outside of Canada (exclusively workers from American building trades local unions with the same qualifications as Canadian workers). While KMP is a modern example, the use of Project Labour Agreements and mobile workforces have a significant history of use in B.C. stemming back to the 1960s with, for example, large-scale hydro-electric infrastructure development. This model continues today under the Allied Hydro Agreement. Local labour will only ever meet a portion of the skilled labour needs of a specific project such that there is need for a mobile workforce, particularly during peak construction periods. The pipeline industry is another example of success in using a mobile workforce, even though Project Labour Agreements are not the norm for the industry. Instead, the Pipe Line Contractors Association of Canada administers 10 collective agreements with the four pipeline craft unions and utilizes a co-operative joint labour/management panel (Canadian Pipeline Advisory Council) to discuss issues that affect the industry as a whole. This has led to successful and efficient use of mobile labour for decades. Much can be learned from organizations that have had success delivering projects using a mobile workforce.



There is also a role to inventory and determine best practices of trades training and mobility programs already available in Canada. One such program is [Helmets to Hardhats Canada](#) that, in partnership with Canada's building trades unions, offers apprenticeship opportunities to former members of the regular or reserve force of the Canadian Forces to transition into the construction industry. There also may be lessons available from the Canadian Forces or U.S. military in training workers and keeping their workforces mobile.

Another key role for private sector unions in delivering worker mobility is to ensure any barriers in accessing skilled tradespeople outside B.C. are addressed. Whether it is identifying any changes needed to the trades-focused inter-provincial Red Seal certification (Interprovincial Standards Red Seal Program) or clarification of regulated occupations or certifications and licensing across provincial and territorial borders, private sector unions can play a role in identifying challenges to enabling mobility of tradespeople and other skilled labour groups.

- A. It is clear that there are projects that have been completed by employing a mobile unionized workforce. The challenge is to identify as many such projects as possible to determine what lessons can be learned from the use of a mobile workforce. This may include developing an understanding of the advantages and disadvantages of a Project Labour Agreement. Further, when it comes to a mobile workforce, there are issues related to addressing qualification and certification with workers from outside B.C. whether they are in the trades or other skilled (non-trades) occupations. An objective is to maintain high levels of trades qualifications including Red Seal certification.

- ✓ **Recommendation #11:**
- ✓ **Explore and analyze projects that have used a mobile workforce. In addition, it is important to identify and resolve the barriers to worker mobility in relation to trades qualification and certification.**

Improve public perception in order to attract and retain workers to rural and northern B.C.

With approximately 70 percent of B.C.'s population living in the southwest corner of the province and a misunderstood or incomplete perception of rural and northern B.C., new strategies and approaches are needed to attract workers to these opportunity-rich areas. How these strategies are developed and who they involve requires more examination and involvement by a broader range of stakeholders, including examining approaches like having private sector unions encourage their members to temporarily leave southern B.C. to go north for work. It is important to ensure the migration of workers does not impact other projects, especially commercial and institutional, in southern B.C.



- A. The Working Group discussed whether there is a role for organized labour, industry, First Nations, or others in an advertising strategy about work and life in rural and northern B.C. It was noted that private sector unions have successfully encouraged their members to work and live in such areas.

There are opportunities for worker mobility as workers finish industrial and commercial construction projects in southern B.C. or as work in certain industries or projects winds down to be transitioned to work in other areas of the province on different projects. Targeting these areas should enable those already (or about to become) unemployed with the necessary experience and skills to be transitioned into similar work to support the LNG opportunity. A further opportunity to understand worker mobility opportunities would be engage in a discussion with other jurisdictions that have managed the same issues (e.g., Fort McMurray, the Northwest Territories, and Newfoundland). Finally, it is important to determine if there is a role for government, northern communities, and/or industry to encourage people to move to work and life in the northern parts of the province.

- ✓ **Recommendation #12:**
- ✓ **Target areas of opportunity by focusing on workers finishing construction or other projects in all areas of the province.**

Make LNG construction and operations as attractive as possible to workers in B.C. and other jurisdictions

As noted earlier, the LNG opportunity comes at a time when there is competition for skilled labour. This competition will require that industry identify the attractiveness of the employment opportunities. There is a need to compile and document best practices on working and living conditions to maximize the potential that the LNG opportunity offers, including those that will encourage workers to want to construct and/or operate an LNG facility, particularly in northern and remote B.C. In addition, recognizing that the construction and operation of an LNG facility will likely be conducted by large portions of a workforce from outside the geographic area of the facility, attention should be paid to a variety of issues including access to the work.



- ✓ **Recommendation #13:**
- ✓ **Explore best practices within the LNG sector and other competing industries with respect to the conditions necessary to attract a mobile workforce.**

Develop a plan to support workers from other jurisdictions to stay in B.C.

For skilled labour from other jurisdictions seeking work in B.C., there is an opportunity for government, industry, organized labour, and First Nations to support them in staying in the province on a more long-term basis. In addition, the pool of skilled landed immigrants in southern B.C. should not be overlooked. Approximately 85 percent of landed immigrants in B.C. have some post-secondary education. With attraction strategies and the recognition of skills and training (i.e., foreign qualification recognition (FQR)), they can supplement other skilled labour pools to support LNG development. The Ministry of Jobs, Tourism and Skills Training and Minister Responsible for Labour has initiated a project to identify barriers to FQR in key LNG occupations and to develop an action plan. It may also be possible for LNG projects to need to recruit immigrants as permanent residents through the Provincial Nominee Program. It is important to identify the barriers for workers from other jurisdictions to stay in B.C. and the ways they can be reduced.

✓ **Recommendation #14:**

✓ **Develop a plan to support workers from other jurisdictions to stay in B.C.**

TOR #3: *Development of a protocol for the use of temporary foreign workers in B.C. as a way to ensure economic development is not impeded by skills shortages but conducted in a way to maximize British Columbian and Canadian access to jobs. The protocol would recognize that local workers, including those from First Nations communities, have priority access to jobs, followed by provincial, national, and international workers.*

Temporary Foreign Workers (TFWs) have a presence in B.C. and throughout Canada. TFWs gain access to work in B.C. through a program administered by the federal government. The TFW Program has come under public scrutiny recently due to allegations that TFWs are taking jobs in place of Canadian, and specifically British Columbian, workers.

These concerns are counter-balanced by, as noted earlier in this report, the legitimate workforce needs associated with the LNG opportunity and other projects planned between now and 2023. Simply put, B.C. does not have the labour supply to meet the challenge – and that is the challenge the Working Group was established to address, in addition to the work of the B.C. Natural Gas Workforce Strategy Committee. As a result, it is reasonable to conclude that at some point, it is possible that TFWs in some capacity will be needed to enable B.C. to meet the LNG opportunity. The challenge for the Working Group – collectively and each individual organization – is to begin planning in advance of the need and design a protocol that will enable the use of TFWs but that will also ensure that their use is a last resort. As the TOR clearly states, and as the Working Group unanimously agreed, the priority is to ensure that qualified local workers have priority access to jobs, with a radiating priority out to the rest of B.C. and Canada before using TFWs and those emigrating to B.C. by way of the Provincial Nominee Program or the federal Skilled Worker Program.

On a couple of occasions during the meetings of the Working Group, the discussion of the use of TFWs challenged the participants to balance the interests of their respective organizations and the language of TOR #3. Industry's interest with respect to TFWs generally means having the flexibility to employ the necessary skilled labour at the right time in either the construction or the operation of an LNG facility. For organized labour and First Nations, their interest with respect to TFWs generally means that all parties have done everything reasonably possible to ensure first access to British Columbians and Canadians for the jobs (skilled and unskilled) presented by the LNG opportunity. Government's interests with respect to TFWs generally means ensuring the balance between funding an education system (K-12, post-secondary, and ITA) that produces the workers of the future and access to TFWs for employers only when the necessary skills are not available in British Columbia or Canada at the time they are needed.

Within the interests outlined above, the elements of a protocol consistent with the language of TOR #3 begin to crystallize. The Working Group is of the view that if progress can be made on moving forward after March 31, 2014 on most of the preceding recommendations, including the structure to continue dialogue on skills training and workforce planning issues related to the LNG opportunity, then that will pave the path to ensuring as many British Columbians and Canadians as possible are trained and have access to jobs brought about by the LNG opportunity.

To support the development of a protocol, it is important to ensure that all stakeholders understand how the federal TFW Program works, including the steps that must be undertaken before an employer is able to gain access to TFWs. It is also important to review projects where the use of TFWs has been successful – that is, the circumstances of their use are clearly defined. For example, the Working Group identified the Kitimat Modernization Project (KMP) at Rio Tinto Alcan, which allows for the use of TFWs, as a project from which lessons can be learned. In addition, there is a need to understand the role of the provincial government in working with the federal government on issues related to the use of TFWs, especially as the TFW Program undergoes review and change by the federal government. Finally, it is important to ensure that when and if the use of TFWs is needed, that mechanisms are developed to ensure they are trained and certified to the same level (or a reasonable equivalency) as Canadian workers to enable their safe and efficient functioning – and of course to ensure the safety of others with whom the TFWs are working.

- ✓ **Recommendation #15:**
- ✓ **Further refine and develop a process for the use of Temporary Foreign Workers in the context of an overall strategy that identifies the workforce needs of the LNG opportunity and immediately begins a skills training plan to develop as many British Columbian and Canadian workers as possible to meet those needs. The structure contemplated in Recommendation #1 will be seized with the responsibility to refine and develop a process for the use of Temporary Foreign Workers.**

IV. NEXT STEPS AND CONCLUSION:

The opportunity presented by the possibility of the construction and operation of multiple LNG facilities in B.C. is exciting and promising. However, the opportunity also presents a significant skills training and workforce challenge recognizing that B.C. does not currently have the necessary workforce available and ready to support it. Great work has been undertaken already – and is in fact on-going – by the B.C. Natural Gas Workforce Strategy Committee to develop actions to address the challenge. The Premier’s LNG Working Group, established in September 2013, has met and considered several specific issues that are in addition to the work of the Committee. The Working Group has, with the expertise and knowledge of industry, organized labour, and First Nations, identified a number of strategies and solutions, based on the Terms of Reference established by the Premier, that have the potential to address the LNG workforce challenge. Premier Clark and Minister Bond, we are pleased to submit our final report to you.

Respectfully submitted by the Premier’s LNG Working Group.

Appendix I: Terms of Reference Premier's LNG Working Group

Working Group to be composed of representatives from Government, Labour and Industry as determined by the Premier's Office in concert with other partners.

For Discussion:

Propose strategies and solutions to fill skills gaps via new entrant skills training and upgrading skills of current members as identified in the B.C. Natural Gas Workforce Strategy and Action Plan.

Propose roles for private sector unions in recruiting members from southern British Columbia to the north to ensure British Columbians are first in line for these positions.

Propose roles for private sector unions in accessing skilled workers from across Canada and the United States.

Development of a protocol for the use of temporary foreign workers in B.C. as a way to ensure economic development is not impeded by skills shortages but conducted in a way to maximize British Columbian and Canadian access to jobs. The protocol would recognize that local workers, including those from First Nations communities, have priority access to jobs, followed by provincial, national, and international workers.

Proposed timelines:

Working Group formed by September 30, 2013.

Interim Report by January 31, 2014.

Final Report by March 31, 2014.

Appendix II: Working Group Participants and Meetings

The Working Group met in person in Vancouver on November 12, December 5 and 17, 2013, January 13 and 24, February 13 and 27, and March 14 and 20, 2014.

Government	Industry	Labour
Trevor Hughes (chair), Assistant Deputy Minister, Labour Division, Ministry of Jobs, Tourism and Skills Training and Minister Responsible for Labour. Supported by Jennifer Goad and Nathan Nankivell .	David Keane , Vice President Policy and Corporate Affairs, BG Canada. Supported by Andrew Burton , Kathleen Williams , and Rick Wojcik .	Jim Sinclair , President, B.C. Federation of Labour. Supported by Michael Gardiner and Joe Barrett .
Rob Mingay , Assistant Deputy Minister, Labour Relations, Public Sector Employers' Council Secretariat, Ministry of Finance.	Bruce Wells , Director of Project Planning and Execution, TransCanada. Supported by Kiel Giddens .	Tom Sigurdson , Executive Director, B.C. and Yukon Territory Building and Construction Trades Council.
Scott MacDonald , Assistant Deputy Minister, Labour Market and Immigration Division, Ministry of Jobs, Tourism and Skills Training and Minister Responsible for Labour. Supported by Keith Godin .	Sarah McCullough , Director External Affairs and Communications, Spectra Energy.	Joe Shayler , Business Manager & Financial Secretary, United Association of Journeymen & Apprentices of the Plumbing & Pipefitting Industry of U.S. and Canada, Local 170. Supported by Jeff Chapman .
Susan Brown , Executive Director, Strategic Policy and Planning, Ministry of Advanced Education.	Rod Maier , Manager External Relations & Communications Kitimat LNG, Chevron. Supported by Elio Artuso .	Mark Olsen , Business Manager/Secretary-Treasurer, Construction & Specialized Workers' Union, Local 1611 (Labourers).
Kursti Calder , Director, Labour and Economic Planning, Ministry of Natural Gas Development. Supported by Brian Hansen .	Susanne Kajner , Director, HR & Corporate Services, Progress Energy Canada Ltd. Supported by Tessa Gill , Pacific NorthWest LNG Ltd.	Jud Martell , Training Co-ordinator, Sheet Metal Workers' International Association, Local 280.
	Marc Maesele , LNG Plant Project Manager, Shell. Supported by Ron Harry .	Dan Bradford , Past Vice-President, B.C. Government and Service Employees' Union.

First Nations
Taylor Cross , Deputy Chief Counsellor, Haisla Nation. Supported by Matthew Clayton .

In addition, on December 23, 2013, the Working Group chair, Trevor Hughes, met with the chair of the B.C. Natural Gas Workforce Strategy Committee, Geoff Stevens. There was a discussion about the mandates of the two groups and opportunities to share ideas and initiatives moving forward in support of the LNG opportunity.

**Appendix III: Status of Liquefied Natural Gas (LNG) Projects in B.C.
as of March 31, 2014**

LNG Export Facilities					
LNG Project (Location)	Proponent	Volume (MTPA)	National Energy Board Export Licence	B.C. Environmental Assessment Office	Canadian Environmental Assessment Agency
Discovery LNG (Campbell River)	Quicksilver Resources Canada	Being assessed	Not Submitted	Not Submitted	Not Submitted
Douglas Channel Energy/BC LNG (Kitimat)	Douglas Channel Energy Partner-ship, Haisla Nation, Golar LNG, LNG Partners LLC	1.8	Approved	n/a	n/a
Kitimat LNG (Kitimat)	Apache Corp and Chevron	10	Approved	Certificate Issued	n/a
LNG Canada (Kitimat)	Shell Canada, KOGAS, Mitsubishi and PetroChina	24	Approved	Substituted EA* Pre-Application	
Pacific Northwest LNG (Port Edward)	PETRONAS, JAPEX, Petroleum Brunei, India Oil Corp.	18	Approved	Coordinated EA* Pre-Application	
Prince Rupert LNG (Port of Prince Rupert)	BG Group	21	Approved	Coordinated EA* Pre-Application	
Woodfibre LNG (Squamish)	Woodfibre Natural Gas Limited	2.1	Approved	Substituted EA* Pre-Application	
Triton LNG (location TBD)	AltaGas Ltd and Idemitsu Canada Corp	2.3	Under Review	Not Submitted	Not Submitted
WCC LNG Ltd. (location TBD)	Imperial Oil, ExxonMobil Canada	30	Approved	Not Submitted	Not Submitted
Aurora LNG	Nexen	24	Under	Not Submitted	Not Submitted

LNG Export Facilities					
LNG Project (Location)	Proponent	Volume (MTPA)	National Energy Board Export Licence	B.C. Environmental Assessment Office	Canadian Environmental Assessment Agency
(Grassy Point near Prince Rupert)	(subsidiary of CNOOC), INPEX Corp, JGC Corp		Review		
Woodside Energy LNG (Grassy Point near Prince Rupert)	Woodside Petroleum Ltd	Being assessed	Not Submitted	Not Submitted	Not Submitted
Kitsault Energy Project (Kitsault)	Kitsault Energy Ltd.	20	Under Review	Not Submitted	Not Submitted
Stewart Energy LNG (location TBD)	Canada Stewart Energy Group Ltd.	30	Under Review	Not Submitted	Not Submitted

* Substituted EA – projects reviewed by BC EAO on behalf of the federal government to fulfill requirements of both agencies. Ministers from each government make independent decisions based on the single process.

* Coordinated EA – processes are aligned to limit unnecessary duplication between federal and provincial information requirements. Canadian Environmental Assessment Agency leads both these EAs because both projects are proposed to be located on federal lands.

LNG Domestic Facilities					
LNG Project (Location)	Proponent	Volume (MTPA)	National Energy Board Export Licence	B.C. Environmental Assessment Office	Canadian Environmental Assessment Agency
Tilbury LNG Facility (Vancouver)	Fortis BC	Being assessed	n/a	n/a	n/a
Ferus (Vancouver)	Ferus, ENN	Being assessed	n/a	n/a	n/a

Natural Gas Pipelines				
LNG Project	Proponent	Capacity (Bcf/d)	B.C. Environmental Assessment Office	Canadian Environmental Assessment Agency
Westcoast Connector Gas Transmission	Spectra (Facility – Prince Rupert LNG)	4.2	Pre-Application	N/A
Coastal GasLink	TransCanada (Facility – LNG Canada)	1.7 – 5.0	Application accepted Feb 28; review starts March 7	N/A
Prince Rupert Gas Transmission	TransCanada (Facility – Pacific Northwest LNG)	2.0 – 3.6	Pre-Application	N/A
Eagle Mountain – Woodfibre Gas Pipeline	FortisBC Energy (Facility – Woodfibre LNG)	0.22	Pre-Application	N/A
Pacific Northern Gas Looping Project (PNG)	Pacific Northern Gas (Sub-EA Facilities)	0.6	Pre-Application	N/A
Pacific Trail Pipelines	Apache/Chevron (Facility – Kitimat LNG)	1.0	Amendment	N/A

Appendix IV: References and Resources

Premier's Office:

- News release – Action plan released for B.C.'s LNG sector.
http://www2.news.gov.bc.ca/news_releases_2013-2017/2013PREM0081-001146.htm
- News release – B.C. puts LNG on the world stage once more.
<http://www.newsroom.gov.bc.ca/2013/11/bc-puts-lng-on-the-world-stage-once-more.html>

Ministry of Natural Gas Development:

- Liquefied Natural Gas: A Strategy for B.C.'s Newest Industry.
http://www.gov.bc.ca/ener/popt/down/liquefied_natural_gas_strategy.pdf
- British Columbia's Liquefied Natural Gas Strategy – One year update.
http://www.gov.bc.ca/com/attachments/LNGreport_update2013_web130207.pdf
- LNG 101: A Guide to British Columbia's Liquefied Natural Gas Sector.
<http://engage.gov.bc.ca/Inginbc/files/2013/11/LNG101.pdf>
- International LNG in B.C. Conference, May 13 and 14, 2014.
<https://www.Inginbc-register.ca/register>

Ministry of Jobs, Skills Training and Tourism and Minister Responsible for Labour:

- B.C. Jobs Plan.
<http://www.bcjobsplan.ca/>
- B.C. Skills and Training Plan.
<http://www.bcjobsplan.ca/skills/bc-skills-and-training-plan/>

Ministry of Advanced Education:

- News release – Skills training in the oil and gas sectors gets boost.
http://www2.news.gov.bc.ca/news_releases_2013-2017/2013AVED0046-001901.pdf

Resource Training Organization:

- B.C. Natural Gas Workforce Strategy and Action Plan 2013.
<http://www.rtobc.com/Assets/RTO+Assets/About+RTO/BC+NG+Strategy+2013JUL.pdf>