

BC has the Majority of Canada's Natural Gas Reserves

**Estimate of Ultimate Potential for Marketable Natural Gas in the WCSB
Year-end 2014**

Area	Gas Type	Tcf		
		Ultimate Potential	Cumulative Production	Remaining Reserves
Alberta	Conventional	221.5	163.2	240.1
	Unconventional	181.6		
	<i>CBM</i>	3.6		
	<i>Montney</i>	178		
	Alberta Total	403.1		
British Columbia	Conventional	51.6	27.2	547.2
	Unconventional	524.6		
	<i>Horn River</i>	77.6		
	<i>Montney</i>	271		
	<i>Cordova</i>	8.8		
	<i>Liard</i>	167.1		
	British Columbia Total	576.2		
Saskatchewan	Conventional	10.5	7.9	2.6
	Unconventional	2.9		
	<i>Bakken</i>	2.9		
	Saskatchewan Total	13.4		

Notes:
- Determined from reliable, published assessments by federal and provincial agencies.
- For this table, "unconventional" is defined as natural gas produced from coal (CBM) or by the application of multi-stage hydraulic fracturing to horizontal wells.
- The ultimate potential for natural gas should be considered an estimate that will evolve over time. Additional unconventional potential may be found in unassessed shales, such as the Duvernay Shale of Alberta.



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Liquefied Natural Gas exports mean

\$422

BILLION

for the BC economy from 2020 to 2040.

Resource Works

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Burning natural gas releases

45%

fewer greenhouse gas emissions than coal, making it a clean alternative, just like solar and wind.

Resource Works

NorthEastern BC Produces Vast Hydroelectric Power and is home to the Largest Wind Generation Industry in BC



The construction of Site C would create:

- Cost of construction \$8.8 billion
- Approximately 10,000 direct construction jobs
- Approximately 33,000 total jobs through all stages.
- Will generate an estimated \$3.2 billion to provincial GDP, and \$130 million in regional GDP.



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WIND TURBINES

make up British Columbia's first fully operational wind park, located near Dawson Creek. The park produces enough electricity for most of BC's South Peace Region.

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wind farms exist or are planned for N.E. British Columbia. Together they could provide electricity equal to almost half of the new Site C hydro dam.

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+48%

growth was measured in British Columbia's clean-energy technology sector sales since the introduction of the province's Climate Action Plan.*

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The Rocky Creek Wind Energy Project will cost

\$1.5 billion

and partner with First Nations to install up to 200 wind turbine generators south of Chetwynd, B.C.

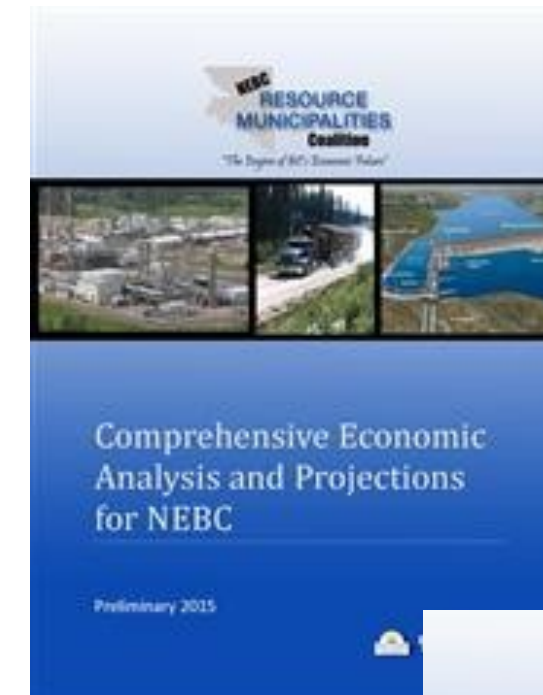
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Resource Works

Social License Must be Granted by Resource Communities Local Citizens and Businesses

- Prime Minister Trudeau has stated that social license must be granted by local citizens and communities as well as First Nations.
- "We are working very, very hard right across the country with municipal leaders, with provincial leaders, to make sure we're creating the social license, the oversight, the environmental responsibility and the partnership with communities to get our resources to market in a responsible way," Trudeau said.
- Resource Communities are:
 - Overwhelmed with proposals and consultation by individual industry proponents seeking Social License for their individual projects.
 - In need of a comprehensive Socio Economic planning process must be instituted by senior governments to enable resource communities to be provided with overall impacts of resource development on their services and facilities.

Major Studies Completed by the Coalition



Impacts of Resource Development on Local Communities



- In the last 2 years over 50 businesses have shut their doors in the Northern Rockies Regional Municipality.
- Business overall in the Northern Rockies Regional Municipality in the same 2 year period is down 60%
- Loss of local expertise in resource development

Companies Closing Doors & Selling Off Equipment



- In Dawson Creek the vacancy rate for apartments and condos have increased to 50% VACANT
- Over 29 businesses in Dawson Creek are FOR SALE

Source Dawson Creek & District Chamber of Commerce

Continental Pipeline and Facility to shutdown: hundreds lose jobs in Fort St. John



- Continental Pipeline & Facility, closed its Fort St. John operations.

Impacts on Citizens and Families

- Major impact of quality of life
- Job loss and relocation
- Reduced work week and EI contribution
- Less industry support for community groups and organizations



Economic Impact Illustration of Petronas and Shell LNG Natural Gas Production Increase in NEBC

LNG Canada Eyes Financial Sign-Off by End-2015

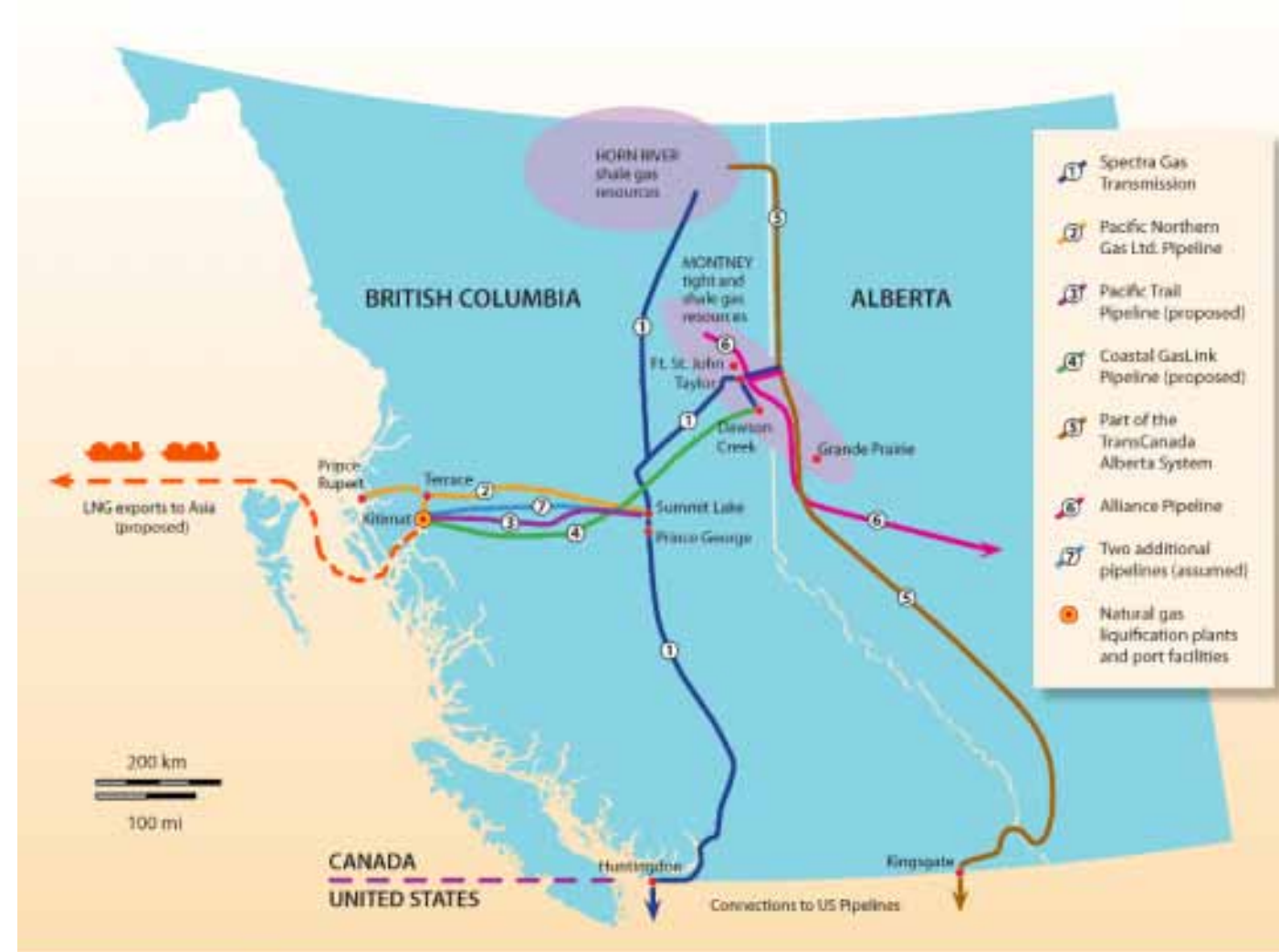
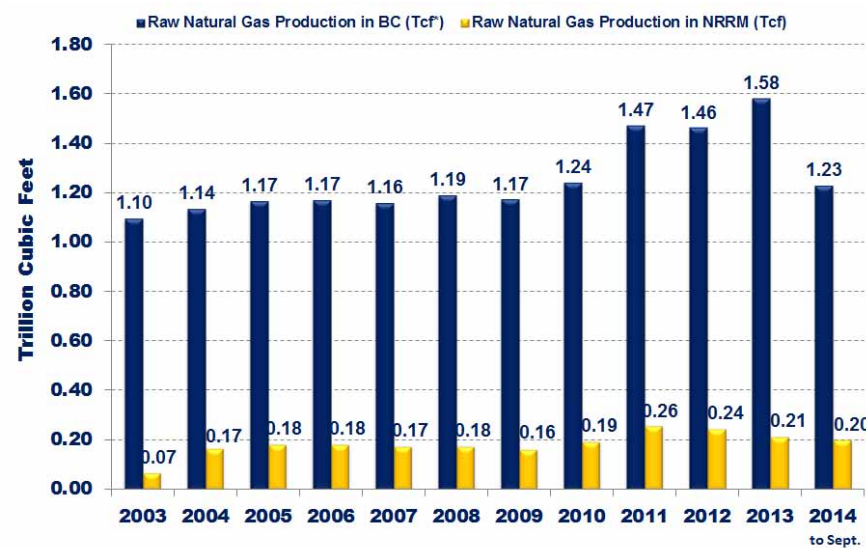
Monday, May 4, 2015

Summary

A Royal Dutch Shell-led consortium is expected to make a final investment decision over construction of its LNG Canada project in British Columbia toward the end of this year, paving way for construction to start as early as 2016, International Oil Daily understands.

Petronas to decide on Canadian LNG project by June 2015

BC Natural Gas Production



LNG Natural Gas Requirements

- 750 million cubic feet is total production of McMahan gas plant
- The size of an LNG production unit (train) varies from plant to plant. Shell is proposing 4 trains with 0.8 BCF/d for each train, while Petronas is proposing 3 trains with 0.9 BCF/d each.
- Petronas NEB application was for 3 trains but could be re-configured
- The 3.2 BCF/d at the LNG facility for the proposed Shell 4 train operation would approximately double BC gas production
- The Shell and Petronas proposal (2.7 BCF/d at the LNG facility), would approximately triple BC gas production.



Preliminary Job Creation & Population Impacts Major Resource Development Projects - Peace River Region 2013-2025

LNG & Natural Gas - Total Job Creation

Geoff Stevens, chair of the B.C. Natural Gas Workforce Strategy Committee

"B.C.'s northeast only has about 14,000 mature workers, said Stevens, meaning the expansion and production to feed five plants would increase labour demands fourfold, including long-term maintenance and operational jobs."

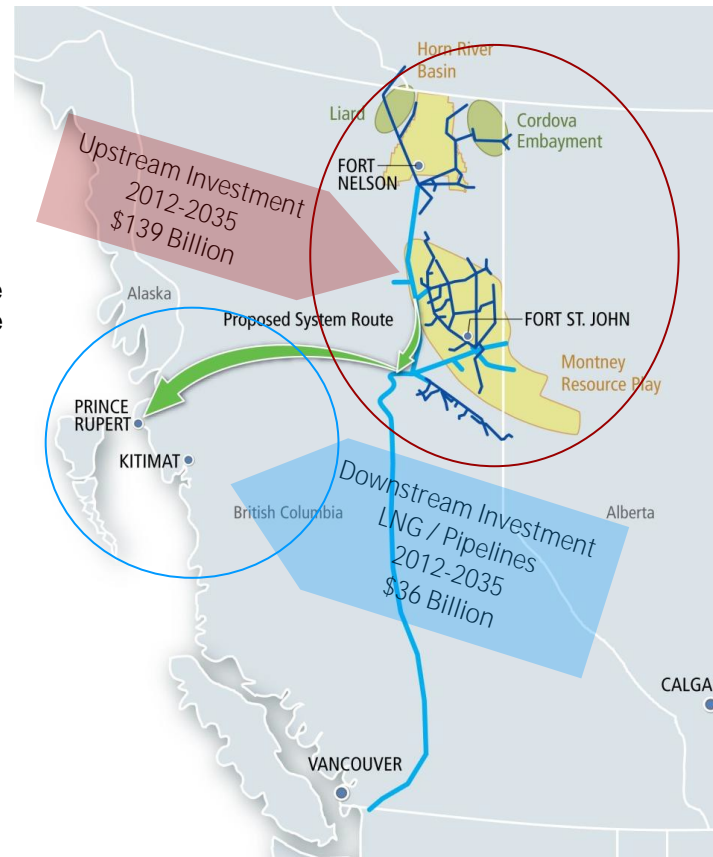
September 16, 2013 - Journal of Commerce - Liquefied natural gas projects will require massive labour force

Conference Board of Canada, December 2012 (based on 20 mtpa)

"Total employment (direct, indirect and induced) in period 2012 to 2035 is 1,295,431 or 54,000 jobs annually."

Grant Thornton, Employment Impact Review, February, 2013 (based on Five plants assumed producing 82 mtpa)

"Total indirect and induced during operations is 75,000 Full Time Employees (FTEs)"



Major Projects Over and Above Natural Gas & LNG would include Site C, Mining & Forestry

Proposed Site C:

- ✓ Construction phase (2014 to 2022) average is 800 person years/ year with a peak of 1,700 in 2019

Proposed **mining projects** in the Peace Region. The following projects are now involved in the Provincial EA process:

- ✓ Carbon Creek Coal Mine
- ✓ Bething Coal Mine
- ✓ Farrell Creek Mine
- ✓ Echo Hill Coal Project
- ✓ Sukunka Coal Mine Project
- ✓ Murray River Coal Project
- ✓ Horizon Mine Project.

For the purposes of this overview projection, it has been assumed of the 600 man workforce proposed for accommodation in the City for the Farrell Creek Mine, 66% would permanently locate within the City of Fort St. John. No other mining job projections have been used to drive population projections.

Fort St John Preliminary Estimate based on annual production of 35.71 mtpa (amount used in the NRRM analysis and is higher than CBC but less than Grant Thornton) the average annual direct jobs in the PRRD could be as follows:

Projection Period	Total Direct Employment (Low Range)	Total Direct Employment (High Range)
2013-2015	1,681	1,681
2016-2020	3,437	6,010
2021-2025	5,557	8,814
2026 -2030	5,363	7,904
2030 - 2035	5,426	7,736

As the population of the City is now approximately 21,000, the population is projected to grow to 28,500 in the period 2016 to 2020 and to almost 30,000 in the period 2021 to 2025.

	LNG Related	Pipelines	Energy	Mining	Total
2013-2015	875	400	809	0	2,084
2016-2020	3,125	1,600	1,217	1,600	7,542
2021-2025	5,208	1,638	370	1,600	8,816
2026-2030	4,113	1,638	240	1,600	7,591
2031 - 2035	4,023	1,638	240	1,600	7,501

20% of all direct jobs would be filled by permanent residents of the Peace Region.

Economic Impacts

BC's Shale Gas Development 2005-2015

Net Cash Expenditures of the Petroleum Industry in British Columbia (Billions of Dollars)			
Year	Exploration	Development	Total Capital Expenditure by Industry
2003	\$1.5 billion	\$2.3 billion	\$3.8 billion
2004	\$1.2 billion	\$2.7 billion	\$3.9 billion
2005	\$1.4 billion	\$3.6 billion	\$4.9 billion
2006	\$1.9 billion	\$4.2 billion	\$6.1 billion
2007	\$2.3 billion	\$3.3 billion	\$5.5 billion
2008	\$4.0 billion	\$3.8 billion	\$7.9 billion
2009	\$2.1 billion	\$3.1 billion	\$5.2 billion
2010	\$2.1 billion	\$4.9 billion	\$7.1 billion
2011	\$1.5 billion	\$5.2 billion	\$6.7 billion
2012	\$0.8 billion	\$4.4 billion	\$5.2 billion
2013	\$1.2 billion	\$4.5 billion	\$5.7 billion
Total	\$20.0 billion	\$42.0 billion	\$62.0 Billion

1. The Oil & Gas industry invested \$62 billion in NorthEastern BC.
2. The Provincial Government received \$20 billion in royalty, land sale bonuses and Provincial property taxes for that period.
3. The Peace Region Municipalities and Rural Areas received an increase of \$100.93 million in additional property tax revenue (Fair Share Grant).
4. The Peace Region Municipalities and Rural Areas received Less than half of 1% of the revenues generated by the economic development in NEBC over the past 10 years.

Development of BC's Shale Gas 2003-2014

Provincial Oil & Gas Revenues from NorthEastern BC 2003 to 2014 (in billions)				
Year	Total Oil & Gas Royalties	Land Sale Bonuses (\$Millions)	Provincial Rural Property Tax Revenue	Total Provincial Revenue 2003-2014
2003	\$1,329	\$647		\$1,976
2004	\$1,500	\$232		\$1,732
2005	\$2,050	\$534	\$9.13	\$2,593
2006	\$1,319	\$630	\$10.11	\$1,959
2007	\$1,273	\$1,047	\$10.00	\$2,330
2008	\$1,460	\$2,663	\$10.89	\$4,134
2009	\$491	\$893	\$11.63	\$1,396
2010	\$402	\$844	\$11.93	\$1,258
2011	\$408	\$223	\$12.99	\$644
2012	\$248	\$139	\$14.46	\$401
2013	\$539	\$225	\$15.80	\$780
2014	\$427	\$383	\$16.83	\$827
TOTAL	\$11.46 Billion	\$8.46 Billion	\$124 Million	\$20.03 Billion

Fair Share Revenue for NorthEastern BC 2003 to 2014 (in millions)			
Year	Fair Share 2005 Base Amount	Annual Increase Taxbase Growth	Total Fair Share Grant
2003			
2004			
2005 **	\$55.00		\$55.00
2006	\$20.00	\$1.00	\$21.00
2007	\$20.00	\$4.08	\$24.08
2008	\$20.00	\$6.55	\$26.55
2009	\$20.00	\$9.40	\$29.40
2010	\$20.00	\$11.17	\$31.17
2011	\$20.00	\$12.17	\$32.17
2012	\$20.00	\$15.32	\$35.32
2013	\$20.00	\$18.19	\$38.19
2014	\$20.00	\$23.05	\$43.05
TOTAL	\$235.00	\$100.93	\$335.93

** 2005 One time grant for historic deficit included in calculation

*British Columbia Oil and Gas Industry Statistics (2003-2014) - Provided by the Ministry of Natural Gas

Economic Impact Illustration of Petronas and Shell LNG Natural Gas Production Increase in NEBC

Impact of 2 LNG Plants

These preliminary population increases are predicated on the mid-range scenario of 40 mtpa which is the equivalent of 2 LNG plants (3 trains each). Under this scenario existing natural gas production in NEBC is increased by 250%.

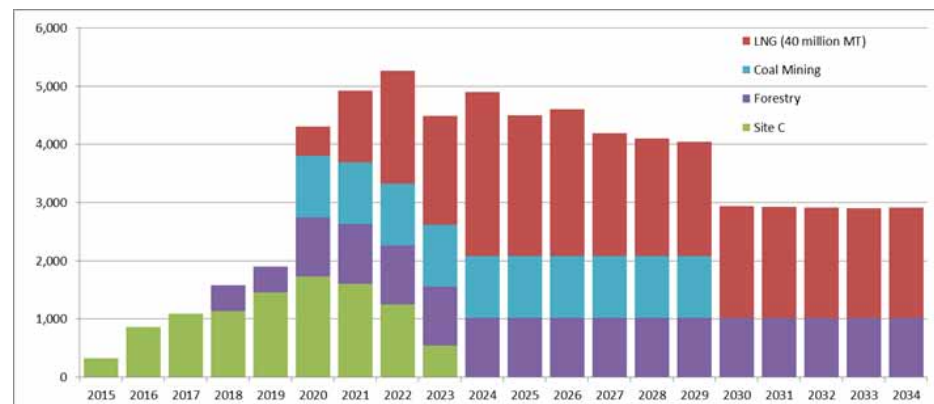
The impact of the large influx of transient workers for Site C and LNG development will have immediate and significant impact on the Greater Taylor and Fort St John area. The current population growth rate of over 3% will accelerate rapidly in response to permanent population growth and the large influx of transient workers which will present immediate and significant challenges to the municipal infrastructure and services in the Greater Taylor and Fort St John area.

The issue of the accommodation and servicing of the large anticipated influx of transient workers needs to be jointly addressed by local governments, the province and industry. The experiences of Fort McMurray should be utilized as planning is initiated on how to best accommodate a large transient workforce which in most cases has significant impacts on municipal facilities and services.

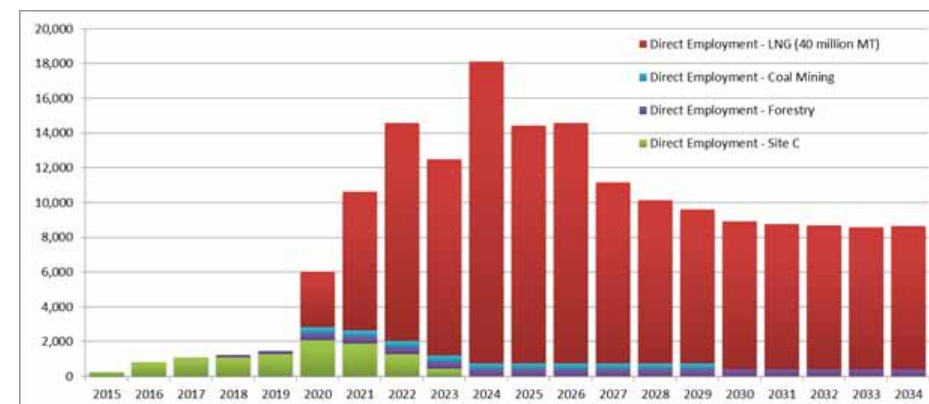
Natural Gas Production Currently and with LNG		
		Total Gas Production
McMahon Gas Plant	750 mcf/day	
Total NEBC Production Today	3.5 bcf/day	3.5 bcf/day
Petronas (Lelo Island - Port Edward)		
2 Trains	2.0 bcf/day	5.5 bcf/day
Expansion to 3 Trains	3.6 bcf/day	7.1 bcf/day
Shell (Kitimat)		
2 Trains	1.7 bcf/day	7.2 bcf/day
Expansion to 4 Trains	3.5 bcf/day	10.6 bcf/day

Economic Growth Projections

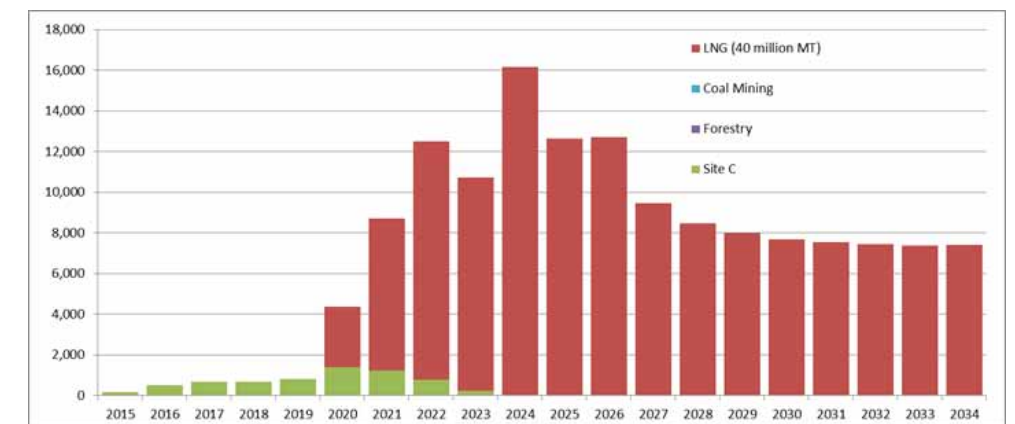
Permanent Population Increase to 2034



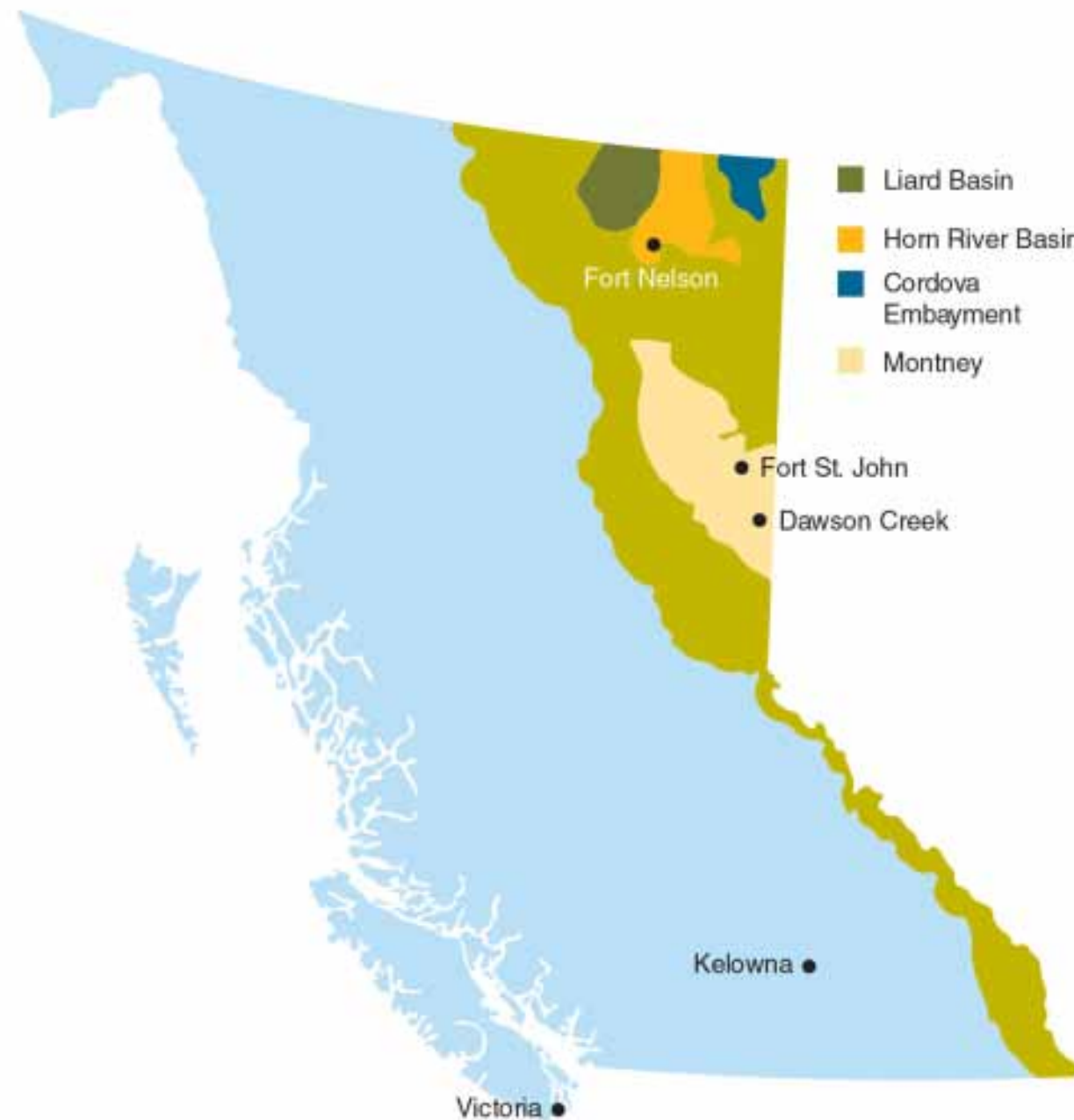
Employment Growth to 2034



Transient Workers Residing in Camps



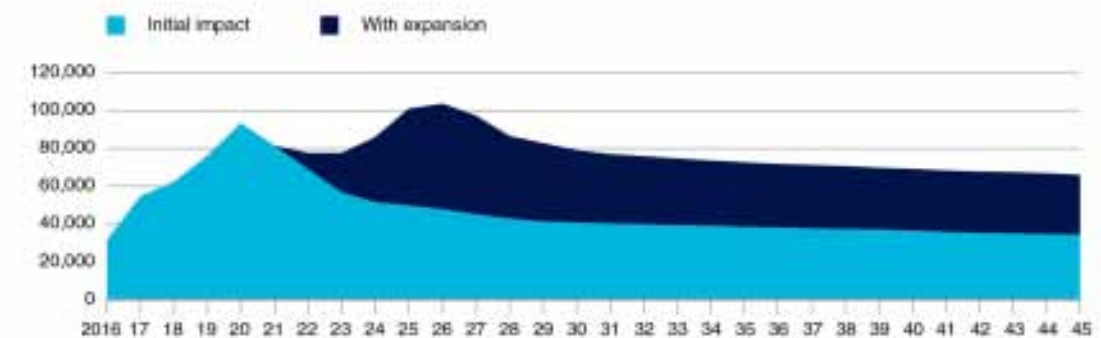
Benefits to Canadians from BC LNG Development



Source: BC Oil & Gas Commission.

- Developing a 30 million tonnes per annum LNG industry in B.C. would grow Canada's economy by an average of \$7.4 billion per year over the next 30 years, of which \$5.3 billion would occur in the province.
- The increased economic activity would raise national employment by an annual average of 65,000 jobs and provincially by more than 46,000 jobs.
- Between 2016 and 2045, the average annual investment required to support a 30 MTPA LNG industry in B.C., across all value-chain segments would average \$7 billion per year, adjusted for inflation.
- These investments will increase Canadian GDP by \$7.4 billion annually over the course of 30 years, with \$5.3 billion of this growth occurring in British Columbia.
- Increased economic activity will lead to growth in employment; on a national level, employment will increase by 65,000 jobs, with 46,800 occurring in British Columbia.
- Annual government revenues, including corporate, personal, and indirect taxes and royalty revenues, would increase by approximately \$6 billion annually, of which \$3 billion would accrue to the provincial government.

Employment Impact of a 40 Per Cent Expansion



Source: The Conference Board of Canada.

Expanding the infrastructure and boosting drilling and production of natural gas production could add another \$5.1 billion per year to Canada's real GDP, \$2.3 billion will accrue to B.C., and the remaining \$2.8 billion will spread across the rest of the provinces and territories. The expansion phase will generate additional 49,000 jobs across Canada, with 28,000 occurring in British Columbia.