

Natural Gas Backgrounder (Draft Document)

Our existing oil and natural gas industry:

1. The New Brunswick oil and natural gas sector is comprised of a wide range of industrial and commercial activities, including refining, natural gas production, transmission and distribution, electricity generation from natural gas, petroleum retail, and related administration, back-office and transportation activities. The sector is an important contributor to New Brunswick's economy, and currently provides direct employment for an estimated 7,500 New Brunswickers in a wide range of retail, administrative, professional, technical and engineering occupations.
2. The oil and natural gas sector provides New Brunswick with some of its highest skilled and highest paying positions. The vast majority of these positions are located in the Saint John, Moncton and Fredericton regions, with both direct and indirect impacts throughout the Province. Major employers include Irving Oil, Exxon Mobil, Enbridge Gas NB, Canaport LNG, PotashCorp, Corridor Resources, NB Power, Emera New Brunswick, Atlantic Hydrogen and the Maritimes and Northeast Pipeline.
3. The Irving Oil Refinery in Saint John is a strong competitor in regional markets. The refinery, Canada's largest, has a capacity in excess of 300,000 barrels per day and accounts for about 64% of Canada's petroleum exports to the United States. This generates over \$10 billion in annual energy exports from our province, our single largest export component (by far). The Canaport LNG terminal, also in Saint John, can deliver up to one billion cubic feet per day of natural gas into the international northeast market. Capital investments here in New Brunswick by our oil and natural gas industries have exceeded \$5 billion over the past decade, supporting contractors and suppliers throughout the province and maintaining hundreds of highly skilled construction jobs.

New Brunswick's long history as an oil and natural gas producer:

1. Oil and natural gas production in New Brunswick dates back to the 1860s with 30 natural gas wells currently in production in the Sussex region, producing 10 million cubic feet per day, and 16 oil wells currently in production in the Hillsborough region, near Moncton.
2. New Brunswick's existing natural gas reserves are estimated to be in the range of 80 trillion cubic feet based on current exploration and development activities in the existing oil and natural gas producing areas of southern New Brunswick. These reserves are recognized as economically significant from a North American perspective, and are in relatively close proximity to the Maritimes and Northeast Pipeline, providing direct access to both Maritime Canadian and New England energy markets, as well as the Canaport LNG terminal (which has the potential to be transitioned to an export facility).
3. It should be noted that SWN Canada's current surface exploration activity is still of a very preliminary nature, and is not included in the current New Brunswick natural gas reserve estimate. SWN Canada has not yet committed to any sub-surface exploration or drilling activity.

Our natural gas development opportunity:

1. The oil and natural gas industry is characterized by large-scale capital investments, often occurring in rural areas. This can act as a catalyst for local and regional economic development, leading to higher incomes, population growth, improved local infrastructure and higher level workforce skills. In many cases, the industry supports a significant economic regeneration of communities and entire regions. Benefits can also accrue to existing local suppliers through procurement opportunities or the establishment of new lines of business.
2. Based on a recent supply chain study completed by Deloitte for Future NB and the NB Business Council, the development of our natural gas resource potential will yield tangible direct economic benefits. The

estimated direct investment opportunity here in New Brunswick is \$13 million per each well drilled and completed, with 206 people required to develop one well.

3. NB-based industries with strong opportunities include equipment rental, transportation, professional services (such as environmental approvals, surveying, permitting, etc), casing, cementation, and pipeline installation. These industries are currently located throughout New Brunswick.
4. The study recommends that NB companies should begin preparing their businesses for these opportunities by building industry knowledge and relationships, pursuing the required quality and safety certifications, developing a good understanding of industry procurement and contracting processes and exploring external partnerships. It should be noted that New Brunswick companies in areas such as engineering, metalworking and fabrication have a long history of building capacity through direct involvement in national and international resource development projects and the establishment of global supply chain networks.
5. The final report also recommends that industry, government and our post-secondary institutions should come together to evaluate the significant workforce implications of this industry's development. In addition, the creation of an expanded oil and natural gas industry here in New Brunswick presents the opportunity to bring home hundreds of skilled New Brunswick workers who are currently working in western Canada, many of whom are commuting on a regular basis to and from their families here in New Brunswick.
6. The investment required for just one moderate drilling program of 50 wells per year over a twenty year period would be \$11-\$12 billion, with government royalties from this project estimated at between \$1.5 to \$2 billion based on current price projections. These royalties will help sustain and pay for our Province's hospitals, universities, schools, highways and social programs.

What access to natural gas can also mean for our economy:

1. Increased oil and natural gas development in New Brunswick would provide a wide range of new economic development benefits to the province, including improved supply chain activities, stable energy prices, industrial development, and investment and growth opportunities for all sizes of existing business.
2. New Brunswick is also well positioned, because of its energy infrastructure, location advantages and access to export markets, to serve as a strategic east coast export terminal for crude oil, refined petroleum products and natural gas. Canadian oil and natural gas producers are particularly focused on developing new markets for our country's energy resources in the rapidly expanding economies of the Asia Pacific region. New Brunswick has year-round, ice-free access to some of these emerging markets, via shorter shipping routes than many other North American ports. The conversion of the Canaport LNG terminal to an export facility would result in a significant capital investment and would provide long-term operational flexibility and sustainability.
3. Future access to new domestic sources of natural gas will also benefit our province's efforts to retain and attract new investments in energy-intensive manufacturing industries, a key competitive issue relative to other North American jurisdictions with access to local natural gas sources. In particular, the Irving Oil refinery, our forestry sector and our manufacturers all require access to reliable and cost competitive supplies of natural gas if they are going to remain competitive over the longer-term. This is particularly problematic given the significant decline in the supply of natural gas from offshore Nova Scotia. Our region is now a net importer of natural gas, with costly pipeline transportation constraints in southern New England. We are now at the end of a very costly natural gas supply, transmission and distribution network, in a region with severe seasonal (winter) natural gas shortages.
4. Southern New Brunswick and the Saint John region has also been shortlisted as a potential location for a number of new and significant resource development and manufacturing investment projects, including a new potash mine and mill, fertilizer production facilities and additional value-added oil and natural gas processing operations. These investments, totaling in the \$ billions, will require access to competitive and secure sources of natural gas before proceeding.

Environmental considerations:

1. The Province of New Brunswick remains fully committed to the responsible development of its oil and natural gas resources, and have released one of North America's strongest set of industry rules. These rules have been peer reviewed and are recognized nationally and internationally as being progressive, effective and environmentally sustainable.
2. The Province of New Brunswick has also introduced the New Brunswick Oil and Natural Gas Blueprint, which provides a path forward with respect to the responsible development of the Province's oil and natural gas sector based on six key guiding principles: 1) Environmental Responsibility; 2) Effective Regulation and Enforcement; 3) Community Relations; 4) First Nations Engagement; 5) Stability of Supply; and 6) Economic Development.
3. Jurisdictions throughout North America continue to safely and responsibly develop their oil and natural gas resources while deriving significant economic and social benefit for their citizens, including the provinces of Newfoundland and Labrador, Saskatchewan, Alberta and British Columbia.

The rules document and NB Oil and Natural Gas Blueprint are accessible on the Department of Energy and Mine's website:

<http://www2.gnb.ca/content/gnb/en/departments/energy.html>

Finally, for an interesting external perspective, the US Chamber of Commerce's web site provides reference to their community shale energy outreach initiative: <http://www.energyxxi.org/shale>.

Here are a few highlights from the US Chamber of Commerce site:

- In 2012, shale energy extraction supported 1.75 million jobs. Shale energy-related jobs will grow to more than 2.5 million in 2015, and to nearly 3.5 million in 2035.
- Shale energy provides a particularly strong "employment multiplier." For every job created in the shale sector, more than three jobs are added in other areas, representing one of the largest employment multipliers in the U.S.
- Americans working in shale-related jobs are paid an average of \$51.00 per hour, more than double the national average of \$23.70 per hour for similar industries.
- Shale energy development is contributing more than \$237 billion to U.S. GDP in 2012. This is expected to increase to \$350 billion by 2015 and will double to \$475 billion by 2035.
- Lower natural gas prices as a result of shale gas production will result in 10 percent lower electricity costs nationwide.
- Savings from lower natural gas prices will add an annual average of \$926 per year in disposable household income between 2012 and 2015. In 2035, this will increase to just over \$2,000 per household.
- New government revenues from shale energy production are benefiting communities across the country by allowing the state and local governments to invest in critical needs such as schools and public safety. By 2020, shale development activities will provide nearly \$113 billion in local, state and federal tax and royalty revenue.
- Shale gas is used to produce the consumer and industrial goods we use every day. If shale projections are realized, the chemical industry alone will generate 17,000 highly-skilled, high-paying jobs. The industry will add another 165,000 jobs elsewhere in the economy from investment due to savings attributed to lower natural gas prices.
- If shale energy development stays on course, U.S. manufacturing companies could employ approximately one million more workers by 2025 due to benefits from affordable energy and increased demand for products used to extract shale gas.
- Thanks in large part to shale energy, net oil imports are expected to decrease by 50% by 2020, reducing America's imported oil bill by \$200 million.