

Presentation to the New Brunswick Commission on Hydraulic Fracturing August 18, 2015

An Alternate Path: Creating Opportunities with Clean Energy and Energy Efficiency

It isn't enough to say we don't want shale gas or other fossil fuel energy projects. It is important to provide alternate solutions - solutions that provide jobs and contribute to our province's economic well being. We believe making a transition to a clean energy economy will create long-term sustainable jobs while reducing the effects of climate change - a win-win situation for all of us.

We would like to begin with a quote from Christine Lagarde, the Managing Director of the International Monetary Fund. "Climate change is the greatest economic challenge of the 21st century... Unless we take action on climate change, future generations will be roasted, toasted, fried and grilled."

As you are aware, climate change is a central and driving part of political planning around the world – growing in importance with each year. Whether now or a few years down the road, we will be leaving fossil fuels behind by necessity. The earlier we make the transition, the less costly and more successful it will be.

As members of this commission, you are in a unique position to create a brighter economic future for New Brunswick, and reduce the impacts of climate change at the same time. Wouldn't you like to be recognized as the catalyst responsible for moving New Brunswick/s economic fortunes into the 21st century by providing the science-based data and economic facts that enabled government to shift its' focus away from fossil fuel development towards the clean energy/energy efficiency economy?

We commend the provincial government for the decision to reinstate Efficiency New Brunswick's home energy retrofit program to reduce energy use and costs for consumers. This program has created significant numbers of jobs for New Brunswickers in the past through incentives to improve energy efficiency,, and will no doubt do so again. This type of program also creates the right conditions for new companies in the energy efficiency sector to thrive.

We encourage the provincial government to expand this program significantly. If the current government were to pursue making every building in our province energy efficient with the same vigour the Alward government pursued shale gas, we would see significant job gains and improvements in our fiscal situation.

As you know, clean energy and energy efficiency are not new and unproven industries. In December 2011, Bloomberg New Energy Finance recorded the **trillionth dollar of investment** in renewable energy, energy efficiency and smart energy technologies since it began keeping records in 2004.

Investors moved USD\$295 billion into renewable energy-generation projects in 2014 alone, an increase of 17% over 2013. Investors poured twice as much money into new renewable-electricity projects than into new fossil fuel projects.

About \$25-billion has been invested in Canada's clean-energy sector in the past five years alone. Employment in this sector is up 37 per cent. The investment in clean energy in Canada since 2009 is roughly the same as has been pumped into agriculture, fishing and forestry combined.

In 2013, Canada was the second-fastest growing clean-energy market in the G20. Investment in the wind sector grew by more than 40 percent, to \$3.6 billion, and Canada's solar sector also spiked, hitting \$2.5 billion in investment—almost 50 percent more than in 2012.

The global clean-energy products market has grown a healthy nine percent over the previous year. For early-mover economies such as Germany, China, and the United States, it's proven a significant generator of wealth, employment, and public revenue. In 2013, these three leaders controlled 40 percent of the clean-technology export market, worth some CAD\$400 billion, and employed 3.6 million people.

Mark Carney, the former Governor of the Bank of Canada, and current Governor of the Bank of England lends his support to the 'carbon bubble' theory that coal, gas and oil assets are at risk of being significantly devalued in the near future. He notes the Global Invest-Divest Coalition of more than 160 institutions and local governments (including the Rockefeller Brothers Fund), as well as more than 500 individuals, have pledged to divest \$50billion from fossil fuel investments within the next three to five years and reinvest in new clean energy sources. The fossil fuel divestment movement is gaining great traction throughout the world.

In its seemingly single-minded pursuit of shale gas opportunities, New Brunswick continues to lose out on tremendous opportunities in the clean energy sector. We are also putting ourselves at significant financial risk by pursuing fossil fuel energy solutions that are expected by many financial experts to become "stranded assets."

New Brunswick cannot afford to take on these very real risks and continue to miss out on the substantial opportunities being created in the development of green energy solutions and energy efficiency.

If the province of New Brunswick were to institute incubators for green energy industries in partnership with our universities in much the same way incubators were set up with the IT industry in the past, New Brunswick would be creating the right conditions for new, innovative companies in the energy efficiency sector to thrive.

This would in turn result in significant job gains in the clean energy sector. .

Vermont, a state with a population about the same size as New Brunswick has chosen to take full advantage of these opportunities. They have embraced renewable energy and created a vibrant

economy in this sector. In fact, Vermont added 1,000 solar jobs in 2013 and was ranked #1 in the number of solar jobs per capita in the US. How did they do this?

The state implemented the Solar and Small Wind Incentive Program in the spring of 2003. The program provides incentives for solar, solar hot water and micro-hydro systems for new equipment purchased and installed in Vermont.

Massachusetts' award-winning clean energy program delivered through the Clean Energy Centre (www.masscec.com/) has consistently generated double-digit job growth: 5,985 firms in the state supported 88,372 clean energy workers in 2014.

Clean energy jobs grew 47% between 2010 and 2014. And, these companies show no signs of slowing down. The Massachusetts clean energy industry was expected to exceed 6,000 employers and 100,000 workers by early 2015.

Clean energy in Massachusetts is responsible for \$10 billion in gross state product (GSP) - roughly 2.5% of the state's total GSP.

We can choose to implement policies that promote similar clean economy initiatives, and benefit quickly from the job creation results rather than concentrating most of our efforts on the fossil fuel industry, which is highly vulnerable to volatile market forces over which we have no control i.e glut on the market, falling prices, fossil fuel divestment movement, etc.

Let's take Efficiency New Brunswick as an example of what can be accomplished through innovative government policy.

How has Efficiency New Brunswick contributed to New Brunswick's economy? The agency provided \$60 million in incentives to help 30,000 homeowners, 402 commercial buildings and 42 industrial facilities become more energy efficient. What were the results of this investment?

The \$60 million in incentives resulted in \$446 million being invested directly back into the New Brunswick economy for building materials, equipment and contracting services. That's a 743% return on investment. Most investors in the stock market would salivate at this high a return on investment.

But that's not all. As a result of the increased efficiencies, an additional \$60.45 million in reduced energy costs is saved every year by these same homeowners, commercial building owners and industrial facilities, money that is now available to be spent in the local economy.

How many jobs has this created? Thirty private sector energy advisors and one hundred and thirty companies were registered as builders with Efficiency NB. Compare this to the handful of direct jobs created by Corridor Resources in its shale gas exploration and development efforts, and ask yourself where you would choose to invest your money if you had a choice. As members of this Commission, you have that choice.

The recent report “What do We Know? The State of Canadian Research on Work, Employment and Climate Change, states renewable energy generation employs an average six people per 10 MW of capacity. Nova Scotia passed regulations mandating utilities to supply 40 per cent of their electricity from renewable, low-impact sources by 2020. The plan is expected to generate roughly \$1.5 billion in investment and 5,000 to 7,500 person-years of employment.

New Brunswick has just under 3800 MW of capacity, almost 300 MW of which is wind. If government policy were to mandate an additional 1,200 MW of renewable energy capacity via a program similar to Vermont’s or Massachusetts’ it could result in the creation of 720 additional direct jobs.

You may be familiar with the Renewable Energy Coop in Lameque, a community led initiative with the Energy Coop, the Caisse Populaire and the Fisherman’s Coop to improve the local economy. This initiative with a small community of 1400 people resulted in:

- 45 MW wind farm (thirty 1.5 MW turbines)
- \$115 million investment by Acciona
- A wind energy interpretation centre that employs ten people seasonally
- Energy supplied to 8,000 homes
- ▶ 68 landowners receiving \$2000/year for 25 years
- ▶ More than 300 local jobs created during the construction phase
- ▶ Renewable Energy Cooperative Lameque receiving royalties of \$4,000/megawatt (\$180,000) per year

Initiatives such as this one could be replicated throughout the province.

Tesla Energy’s recent announcements regarding battery storage are a true game changer. Tesla batteries will enable homes, business, and utilities to store sustainable and renewable energy to manage power demand, provide backup power and increase grid resilience. This will accelerate the move away from fossil fuels to a sustainable energy future.

Tesla is already working with utilities and other renewable power partners around the world to deploy storage on the grid to improve resiliency and cleanliness of the grid as a whole. Why wouldn’t we encourage NB Power to partner with Tesla to create innovative solutions here in New Brunswick? We could be an early adopter and reap the benefits rather than be a late adopter in the sunset fossil fuel industry.

In the past year, management-consulting firm McKinsey & Company said that better and cleaner technologies are underpinning “a new industrial revolution.” Think about the 1970’s when no one had

heard of Silicon Valley. We are at a similar threshold that Silicon Valley was at in the 1970s, only this time it is with energy efficiency and clean energy.

Why would New Brunswick choose to continue to miss out on the tremendous opportunities for economic growth available in this sector, opportunities that are not as susceptible to market conditions (over which we have no control) as the fossil fuel sector?

New Brunswick has seen tremendous success in the information technology sector due to strong innovators taking risks and showing vision and creativity. In fact, Q1 Labs and Radian 6, both companies started right here in New Brunswick, were two of the largest technology company sales successes in North America in recent years. The combined sales of the two companies surpassed \$1 billion.

Let's take the New Brunswick entrepreneurial spirit, innovation and creativity and add a focus on this new industry sector that not only creates jobs, but mitigates the effects of climate change at the same time.

I'm sure you remember Kodak from your younger days. During most of the 20th century Kodak held a dominant position in photographic film, and in 1976, had a 90% market share of photographic film sales in the United States. Yet in January 2012, Kodak filed for bankruptcy protection. Let's not focus our energies on the sunset industry of fossil fuel exploration and development, likely to be the Kodak of our generation.

We can become innovators in the clean energy economy, and join leaders such as Germany, Denmark, Massachusetts, China and the United States, all of whom have proven track records in pursuing energy efficiency and renewable energy alternatives. We recommend four initiatives to help us get started on this new and exciting path:

1. Implement policy with a goal of having every building in the province become energy efficient.
2. Implement a New Brunswick Clean Energy Centre using a model such as the Massachusetts one, which invests in early-stage clean energy companies, supports responsibly sited renewable energy projects and provides municipalities, homeowners and businesses with the tools needed to finance and locate renewable energy projects like wind and solar.
3. Implement policy to generate an additional 1200 MW of power via renewable energy (solar/wind) generation by 2020.
4. Become a partner with Tesla Energy to implement innovative energy solutions in New Brunswick.

New Brunswick could become a leader in the energy efficiency and clean energy sectors that others could emulate rather than grabbing the rope of the sinking fossil fuel industry in a desperate, last ditch effort at repeating the same old, same old in the hopes of a different result.