



**A Clean Break: Resetting the Natural Gas
Distribution System in New Brunswick:
Economic Development & the Public Interest**

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1. New Brunswick Energy Commission & Natural Gas

On April 19, 2011, the New Brunswick Energy Commission released its *Public Feedback Document* comprised of 49 draft recommendations that the Commission is intending to use to structure its progressive 10-year energy plan for the Provincial Government. The Atlantica Centre for Energy (ACfE) offered a series of observations and comments on the Feedback Document in a letter to the commission on April 29th, 2011. The Centre focused its comments on those recommendations that touched upon the content of their previous submission.

A principal component of the Centre's presentation to the Commission during its consultative phase, was that a vital outcome of the Province's energy plan must be to ensure that the province has competitively priced natural gas to serve as an instrument to attract and retain investment and further economic development. The Atlantica Centre for Energy is very supportive of the draft recommendations contained within the report that relate to natural gas. The Centre is encouraged that the Commission has prescribed a series of recommendations in its draft report to foster broader use of this key transitional fuel. The Commission's draft recommendation to the Province to restructure the distribution model for natural gas is the cornerstone of this suite of recommendations. The Commission clearly states that the existing market based system and costly distribution charges serve as a deterrent to using natural gas as an economic development tool.

The objective of this *mini-paper* is to suggest a natural gas distribution framework that puts a primary emphasis on attractive rates for large industry combined with a slower-paced rollout of residential gas would have the broadest public interest for all New Brunswickers. The economic activity and increased taxes would provide tangible benefits from gas for the whole province. The current model benefits a very small percentage of New Brunswickers and has led to very uncompetitive natural gas rates for large users.

With the array of sources of natural gas available in New Brunswick, a restructured system must result in our province having industrial natural gas distribution rates competitive with leading jurisdictions on our continent. Natural gas should be a defining characteristic of the province's economic development value proposition.

2. What the Commissioners said - New Brunswick Energy Commission - *Public Feedback* – p. 8

"New Brunswick has access to natural gas from a number of external sources as well as the potential to produce its own gas. Because of its competitive cost, availability, and low environmental impact, natural gas should be considered the key transition fuel as we move from using other traditional fuels toward more renewable energy sources. Natural gas should be promoted to increase its use by consumers. New Brunswick has the beginning of a distribution system that brings value to the province; the rate of change of the distribution charge, however, has been identified as a deterrent to residents switching to natural gas and to the potential of using natural gas as an economic development tool.

The Energy Commission plans to recommend:

6. The government should make changes to the cost structure of the natural gas distribution system to make natural gas more of an asset to New Brunswick, its residents and companies. Investment decisions in the distribution system have resulted in a debt level that makes future competitive cost of service unlikely even if we produce natural gas. The current pricing approach linking the cost of natural gas to the cost of heating oil and electricity removes any benefit associated with market supply and price conditions.

7. The government should create, in the regulatory framework for natural gas distribution, the flexibility to capture the benefits associated with our location, natural resources and access to natural gas, including increased access to natural gas resulting from the application of new technologies. The government should ensure that the regulatory framework is updated to allow for the use of natural gas in a variety of forms (regular, compressed, liquid) and with different methods of distribution to create a sustainable benefit. The regulations should allow independent distribution service to communities not located on the pipeline route (e.g., district fuel or heat systems); create tools to drive economic development opportunities (e.g., single end use franchises, directed tariffs); and allow host communities with natural gas developments access to that natural gas (e.g., local independent distribution systems in conjunction with gas well development).
8. The government should undertake research to identify different cost-effective methods of using natural gas, such as in a district heat or fuel system, to provide energy options to interested groups, communities or industrial clusters¹

3. ACfE response to NB Energy Commission's Feedback Document – April 29, 2011

NATURAL GAS

The Centre fully agrees that the existing natural gas distribution model is broken and agrees that the local distribution company is crippled with an enormous deferred debt burden that “makes future competitive cost of service unlikely”. The Centre fully supports the government’s need to renegotiate and restructure the natural gas distribution system in the province. The possible distribution solutions offered in this section for regular, compressed and liquid natural gas, as well as the district fuel and heat system options are progressive updates.

The Centre believes that the principal emphasis of a restructuring of the natural gas system for New Brunswick must be on a cost of service model to foster economic development. Single End-Use Franchise agreements should be considered as a component of our economic development strategy. With the array of sources of natural gas that our province has, a restructured system must result in our province having industrial natural gas distribution rates competitive with leading jurisdictions on our continent. Natural gas should be a defining characteristic of the province’s economic development value proposition.

The lesson learned from the past ten years is that our province, with its relatively sparse population and existing home heating infrastructure, cannot quickly develop and support a broad distribution system. That’s reality. Our solution must be achieved through a process that is more evolutionary than revolutionary. It is also vital, in order to avoid repeating the errors of the past, that a prudent line extension policy supported by rigorous business cases be undertaken as we build out our consumer and residential systems.

Putting the our emphasis for natural gas on economic development now benefits all New Brunswickers with the potential of creating investment and tax revenue to support essential government services. Natural gas rates that foster investment will benefit all New Brunswickers, (all 750,000+) whether they reside in communities served by the distribution system or not.

The Centre would also like to offer one word of caution. There is potential to develop commercial quantities of unconventional gas in New Brunswick from data collected in recent years. However this is not a certainty - expectation management on whether there will be a commercial discovery and timing should flavour the final report to government.

¹ April 19, 2011, New Brunswick Energy Commission - Public Feedback Document, p. 8

4. New Brunswick's Natural Gas Distribution System is "Broke" – both structurally and financially.

When the franchise to distribute natural gas was issued over a decade ago, government and officials from the selected distributor, Enbridge Gas New Brunswick (EGNB), were clear that natural gas would have a significant and positive economic impact for the provincial economy and for New Brunswickers.

There has been much discussion in recent years about what went wrong with the system in the intervening years. Lack of regulatory and legislative oversight, distribution pipeline extension policies, overly optimistic projections on the potential of New Brunswick's relatively small market and the general franchise agreement itself have all contributed to the challenged system we have today. Regardless of why things went wrong, the current facts are undeniable. The local distribution company (LDC) is crippled under a huge debt burden - mostly from deferred revenues - amounting to almost \$40,000 per customer.

The company had targeted 70,000 customers in the first 20 years. It currently has 11,000 and by its own forecast will only have 19,000 by the end of the 20 year period. Of even greater concern, the LDC has a rate structure that makes it impossible for New Brunswick to attract large industrial projects that require a significant amount of natural gas.

The Atlantica Centre for Energy believes there is a better way to maximize the benefits of natural gas to foster economic development that ultimately benefits more New Brunswickers.

5. Natural Gas in New Brunswick: Current Context

Fundamentally, there is no reason why New Brunswick should not have competitively priced natural gas as an economic development driver. The Maritimes and Northeast Pipeline (MN&P) and the Brunswick Pipeline infrastructure combine to form a robust distribution backbone. This pipeline infrastructure is already serving large customers in New Brunswick in an efficient and cost effective manner.

The province has a broad diversity of supply. Just 10 years ago, the only gas flowing in New Brunswick was from offshore Nova Scotia and that gas was primarily meant to service the U.S. market. Now there are four different sources: Sable gas, Encana gas (coming onshore this fall), indigenous gas from the McCully field near Sussex and liquefied natural gas (LNG) from the Saint John terminal.

Natural gas should be a competitive advantage for New Brunswick - particularly for large industrial projects. However, the regulatory pricing regime for natural gas has allowed the LDC to charge its small number of large industrial users a price for gas that is higher than all other jurisdictions in North America.²

How is this possible? The primary public policy objective in the early days seemed to have been to roll out distribution infrastructure as quickly and broadly as possible. New Brunswick is a sparsely populated province with very little concentration of population. Even in the urban centres, the population concentration is a fraction of places such as Toronto, Vancouver and Montreal which are 10 times more concentrated than Moncton and more than 20 times more concentrated than Saint John. In Calgary, four times as many people live in high rise apartments compared to Fredericton³. This means that the cost to build out gas distribution infrastructure will be much higher per customer than in other more densely populated communities.

In addition, New Brunswickers - particularly in the concentrated urban centres - are primarily using baseboard electric heating systems. The cost to convert from electric baseboard heating to natural gas is much higher than converting from oil or other heating systems. Even with a regulated lower price for natural gas compared to electricity, the cost of conversion for many households is perceived to be too high.

² Source: KPMG Competitive Alternatives 2010.

³ Based on dwelling characteristics from Statistics Canada 2006 Census.

We now have a natural gas distribution system that has been built by accumulating \$430 million worth of debt and deferred charges and only has 11,000 customers. It passes over 30,000 homes and businesses but has only been able to attract one third of those as customers.

In hindsight, New Brunswick should have adopted a slower rollout of distribution infrastructure. If the primary focus of natural gas policy in the early days had been on the economic development potential from natural gas, the residential rollout would have proceeded at a slower pace, the debt/deferred revenue would have remained manageable and the price of natural gas for large industrial projects would have been more competitive with other jurisdictions.

6. Competitive Industrial Natural Gas Costs: Opportunity Lost

The Atlantica Centre for Energy believes given our economic and demographic challenges, the focus of the province's natural gas policy should be to ensure that the province is equipped with competitively priced natural gas for economic development.

There are a number of single end use franchise (SEUF) agreements in place where the customer can purchase gas directly from a supplier. The delivered price of natural gas for the SEUFs is very competitive with other jurisdictions and has facilitated a number of large industrial projects (such as natural-gas fired electricity generation) that would not be feasible without competitively priced natural gas. The SEUFs pay a transmission charge for the gas and they pay an annual franchise fee to the New Brunswick government but they are not on the LDC distribution system.

Under the current model, all new large industrial projects are required to use EGNB and its deeply uncompetitive rate structure.

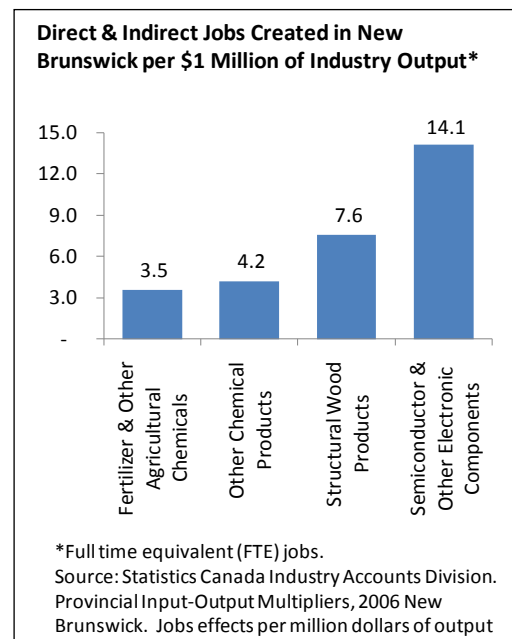
6.1 The economic benefits of energy-intensive economic development

Why does it matter? Large industrial projects can provide significant economic benefits to New Brunswick by creating high paying jobs and by generating tax revenue to pay for our public services. Many of these projects could be opportunities for New Brunswick but fall off the table due to the high distribution costs of natural gas.

For example, the business case for manufacturing polycrystalline silicon (used to manufacture solar panels and other products) in New Brunswick would be strong if the rates for natural gas were competitive to other jurisdictions where these manufacturing plants are currently located. The conversion of potash to fertilizer would be economically viable in New Brunswick with competitive natural gas rates. The wood products manufacturing sector also tends to use large quantities of natural gas.

By not being able to attract these types of projects, New Brunswick is losing out on potentially lucrative economic opportunities⁴. A fertilizer plant in New Brunswick with \$200 million output will create and sustain 700 above average paying jobs in New Brunswick. A structural wood products plant of the same output level will create and sustain over 1,500 jobs for New Brunswickers.

The benefits of these large energy-intensive projects go beyond good employment opportunities. They also generate significant and sustained tax revenues for government. A \$200 million (annual output) polycrystalline silicon manufacturing plant would generate over \$40 million in tax revenue to governments each year. A 400 person fertilizer plant would generate over \$15 million just in personal income taxes paid each year.



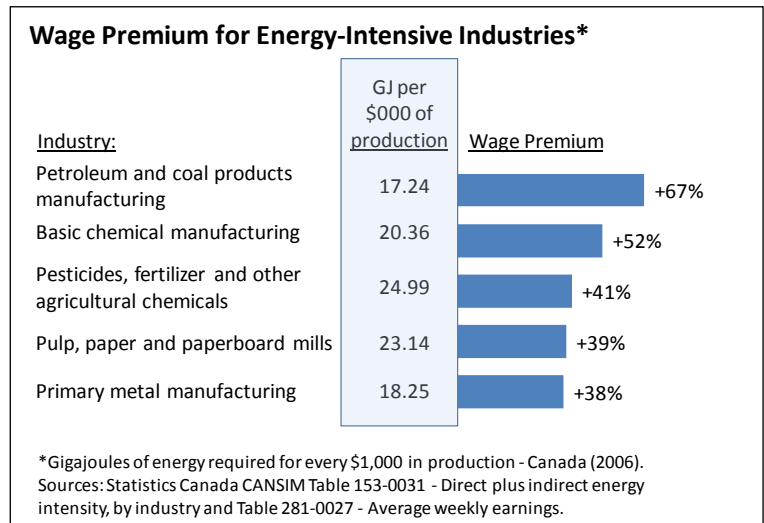
⁴ The data in this section is based on Provincial Input-Output Multipliers for New Brunswick published by Statistics Canada.

Crucially, these tax benefits are spread around New Brunswick to pay for health care, education, roads and other public services. If low cost natural gas can be used to create industrial activity, the economic benefits accrue for all New Brunswick.

Energy-Intensive = High Wage

Another important advantage of energy-intensive industries is they tend to pay well above average wages which in turn generate much higher levels of taxation for governments.

The table shows the wage premium compared to the overall average wage for selected, energy-intensive industries. Petroleum products manufacturing, which uses 17.24 gigajoules of energy per \$1,000 of output has an average wage premium of 67 percent. Fertilizer manufacturing, which uses nearly 25 gigajoules of energy per \$1,000 of output, has an average wage premium of 41 percent.



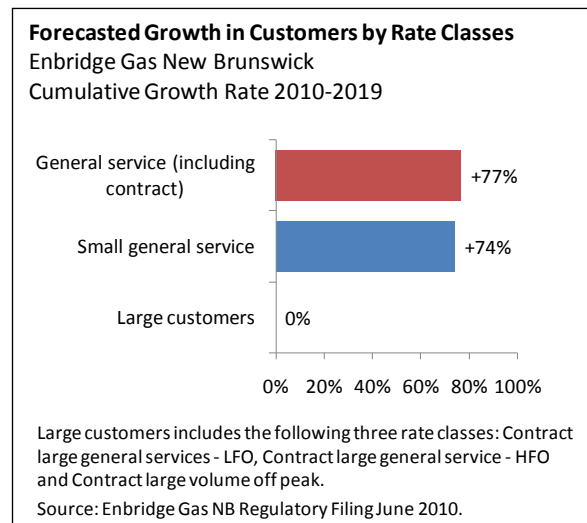
6.2 No Large Industrial Projects in our Future

It is clear the economic development impact from energy-intensive industry projects can be substantial. However, Enbridge Gas New Brunswick explicitly agrees that no large industrial projects using natural gas will be established in the province in the foreseeable future.

In the company's regulatory filing (June 2010), EGNB provided its forecasted growth in customers in its various rate classes. From 2010 to 2019, the company is forecasting a 74 percent increase in its customers in small general service classes and a 77 percent increase in customers in its general service classes (including those on contract services).

However, over the nine year forecast period the company is not forecasting a single new customer in its large industrial rate classes. It is clear from EGNB's own forecasts that New Brunswick will not be able to attract large industrial users of natural gas based on the company's current rate structure.

NB Power is considering the conversion of its Colson Cove generating station to natural gas. This is an important and instructive example. Although existing legislation and regulation does enable a power generation rate class, the rate is unknown. The province would be well served to follow the advice of the NB Energy Commission and develop tools that "drive economic development opportunities (e.g., single end use franchises, directed tariffs)". However, having a competitive industrial rate class has to be a pillar of our natural gas regime if we are to maximize the opportunities associated from natural gas.



6.3 High natural gas costs hurt the New Brunswick business case

Energy-intensive industrial development projects are not viable in a high energy cost environment. For many energy-intensive industrial activities such as wood products, fertilizers, electronics components, etc., the cost of energy can be as high as 20 to 40 percent of the total annual costs of the project.

The table below shows a simple example of the impact of high energy costs on the profit margin of an industrial project. Scenario A shows a typical cost breakdown for an energy-intensive industrial project with an annual revenue of \$100 million. With competitive energy costs, the project is viable with an after tax profit margin of around 10

percent. Scenario B shows the impact of high energy costs on the project. A 50 percent increase in the cost of energy, with no other changes in assumptions, drops the after tax profit margin to 2 percent and wipes out the business case for the project. Even in cases where energy costs are as low as 10 percent of overall costs, a 50 percent energy cost premium will essentially wipe out the business case because that high cost eats directly into the bottom line.

The high cost of natural gas distribution charges is eliminating New Brunswick as a potential location for large industrial projects.

7. A Clean Break: Resetting the Natural Gas Distribution Model

It became clear early on in Nova Scotia that the original gas distribution model would not be viable. The first gas distribution company went bankrupt and the new franchisee is following a far more conservative development path. In New Brunswick, when the deferred revenue account started to accelerate way beyond what was originally conceived, there were no significant changes and that has led to the unsustainable system that is in place today.

	Scenario A Competitive Energy Costs	Scenario B Uncompetitive Energy Costs
Revenue:	\$100,000,000	\$ 100,000,000
Expenses:		
Depreciation	\$ 22,000,000	\$ 22,000,000
Labour costs	\$ 20,000,000	\$ 20,000,000
Raw materials	\$ 10,000,000	\$ 10,000,000
Other overhead	\$ 15,000,000	\$ 15,000,000
Energy costs	<u>\$ 20,000,000</u>	<u>\$ 30,000,000</u>
Total costs	\$ 87,000,000	\$ 97,000,000
Profit before tax	\$ 13,000,000	\$ 3,000,000
Taxation	<u>\$ 3,250,000</u>	<u>\$ 750,000</u>
Profit after tax	\$ 9,750,000	\$ 2,250,000
Profit margin:	10%	2%

The Atlantica Centre for Energy believes the provincial government should move decisively to change the focus of the natural gas distribution model in New Brunswick. Small incremental change will not work. A full reset is required.

7.1 A 'workaround' option is not the solution

It has been suggested by some that the LDC and the EUB develop a 'workaround' solution that would lead to lower rates for the three large industrial users that are currently paying the very high natural gas distribution charges. This is not a good solution as it does not address the root causes of the existing high cost industrial rate regime which would continue to deter investment for projects requiring a large quantity of natural gas.

Another option put forward is that the LDC develop a customized rate for new companies looking to invest in large, energy-intensive projects in the province (for example NB Power's conversion of Colson Cove). Such a process would lack the certainty that investors require when considering a potential location to invest. It too, is not a viable solution because it penalizes New Brunswick industrial companies that are already competing with firms that have manufacturing plants in areas with rock bottom natural gas costs.

7.2 Supporting economic development

EGNB's natural gas pricing regime is designed to generate substantial surpluses from the rates charged to large industrial users to cross-subsidize other rate classes and to contribute disproportionately to the crippling large debt and deferred revenue servicing costs. If large industrial rates were set on a cost-of-service basis⁵, EGNB would likely be able to charge a very competitive rate for large industrial users. If more large users were attracted, it would help stabilize the EGNB business model moving forward.

8. Summary - The Best Interest of New Brunswick

The Atlantica Centre for Energy's objective in producing this mini-paper is to provide the greater policy community with an instrument of information to advance the dialogue with New Brunswick's troubled natural gas distribution system. Principally, the Centre believes that New Brunswick's public interest is best served when natural gas provides the greatest benefits to the widest base of people in the province. A slow-paced rollout of residential gas infrastructure

⁵ Not including debt and deferred revenue servicing. The huge debt piled up by EGNB accounts for a large percentage of the distribution costs.

and a primary focus on the economic development potential from gas is in the best interest of New Brunswickers. The Centre also believes that further professionalizing and resourcing the New Brunswick Energy and Utility Board is vital to ensure confidence in the province's energy regulatory regime.

The Province's negotiation with EGNB is a positive development. It is improbable that the Province will have another opportunity to re-set the system; therefore the Province must have clear objectives for these discussions. Results that are apt to be considered half-measures must be eschewed to ensure the public interest is best served. The Centre understands that these negotiations are complex and challenging for all concerned. The Province must have as an outcome of the negotiation the establishment of a competitive industrial distribution rate. How does the Province define this objective? The Centre would suggest that competitive distribution rates should be compared to jurisdictions with like industries. The enormous debt burden that the LCD carries cripples the system today. What amount of that debt will be allocated to ineffective capital? There are a host of other difficult matters for the Province to consider. The Centre suggests that tackling these matters fully today will result in a more competitive New Brunswick for tomorrow.

About us



The Atlantica Centre for Energy is an industry association dedicated to the sustainable growth and economic development of the regional energy sector. Originally centered in southwestern New Brunswick, the Centre's board has expanded to include leading energy professionals and national professional services companies in Maine, Nova Scotia, Newfoundland & Labrador and Ontario.

The Centre serves as a bridge between corporations and the community to help realize the opportunities associated with the energy sector in Atlantic Canada and the American Northeast. It provides a meeting ground for government, the education and research sectors, and the community at large to foster partnerships and engagement in energy-related issues and policy development.