

Keeping the distribution cart behind the exploration horse:

Why finding more offshore gas is much more important than Completing the national gas grid, including for New Brunswick

Speaking notes for AIMS President Brian Lee Crowley's participation in a panel entitled
Toward a national natural gas grid: challenges and opportunities
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The purpose of this panel is to discuss the completion of the national gas grid, by which I take it that the organizers have in mind the gap that still exists in that grid between southern New Brunswick and Quebec City. David Hay, my esteemed colleague on this panel, has already given you an excellent historical account of how we have come to the point where we find ourselves today, and I have no intention of revisiting that territory. Instead, I want to try an approach that I hope will be a little different from that of the other panelists. I am going to argue that completion of the national grid is actually an objective of little import. There is no absolute value, other than a purely symbolic one of little practical consequence, in completing the national grid for its own sake.

Indeed, the CEO of Trans-Canada Pipeline reportedly said in May at the CAMPUT (Canadian Assn. of Members of Public Utility Tribunals) meeting in Banff that it may become necessary to abandon some existing pipeline assets in the national grid in northern Ontario because they are becoming uneconomic. Much of that routing was chosen, not for sound economic reasons, but for the political optics that they brought – it was sold as “economic development”. Instead it has proven to be a burdensome boondoggle whose costs are being borne by all users of the pipeline system. If the CEO of TCPL is right, we may be moving in the other direction from the theme that this panel suggests – we may be on the eve of dismantling some elements of the national grid because they simply never made any sense. The question is whether the New Brunswick to Quebec City grid connection falls into that category.

As with any other major decision about such an investment, the real question is about what would be gained by completing the national grid, and what we would have to give up in return for these benefits. I will make the case here that the potential benefits — measured for instance in terms of economic development or access to allegedly cheap energy — are few and far between, while the costs — measured in terms of forgone economic opportunities and major offshore investment — are liable to be huge. If we approach this rationally, we will abandon all preoccupation with extending the national grid through the region in question until such time as economics justify such an extension, which will push it off into some pretty indefinite future.

The choices we make on the development of the natural gas grid are going to shape the natural gas world on the East Coast for years to come. If we choose poorly, the

exploration and development activity we have seen will flatten out and decline, and the companies will recoup their existing investments but not risk further investment. Spin-off benefits will dry up. If we choose wisely, we will be an attractive region for international petroleum companies to invest new exploration and development dollars, and we will gain technical expertise and competitive know-how that we can sell far beyond our shores. Time is short for us to make the wise choices.

New Brunswick vs. Nova Scotia? NOT!

Because of the way that Nova Scotia and New Brunswick have clashed over the matter of extending the grid to northern New Brunswick, one might be forgiven for thinking that the two provinces' interests are diametrically opposed. Nothing could be more wrong. We are just having difficulty getting our Maritime heads around what natural gas's real benefits are. New Brunswick launched its application to get the NEB to change its rules for short-term gas export orders, for example, from fear that those benefits would bypass the northern part of the province. That's a legitimate fear, but the means they chose to deal with it were wrongheaded, however understandable they may have been.

The government in Fredericton has decided that the main benefit of the presence of natural gas is the ability to consume it. Logically, then, they decided that by making it much more difficult than before to export the gas to the U.S., the companies would be forced to bring their gas into the hitherto uneconomic markets in the north of the province.

But much of this policy is based on the assumption that consumers there are panting for natural gas. One way of testing this assumption is to ask what has happened in the south of the province, where roughly half the population can get gas simply by picking up the phone.

Embarrassingly for the government, the result has been not a stampede of consumers signing up, but a molasses-like trickle. A few hundred have signed up in the two years since gas became available.

One of the main reasons is that gas is not cheap. When the New Brunswick application was before the NEB, I was on a CBC phone in programme and a gentleman from northern New Brunswick called to say that he wanted the gas because his competitors in the potato-processing industry out West had gas, and that put him at a disadvantage. He had to burn fuel oil, and that meant storage tanks, expensive larger buildings and equipment.

He implied that when the gas came, he could just dump all that. But, of course, he can't. He has invested the money already in his buildings and tanks and equipment. If he just junks them, he throws away the money he's already invested in them. The only way he could afford to do that would be if natural gas were hugely cheaper. But it's not, and he'd have to buy new gas-burning equipment as well as absorbing the cost of hooking onto the local distribution system.

For straightforward business reasons, he'd have to hang on to his old equipment until he'd got the full benefit out of it, just as homeowners want to run down their investment in oil furnaces or electric baseboards before switching. Even then, the decision to switch will depend on the price spread between other already widely available fuels and gas. And the availability of gas will itself help to keep the price of those other fuels low, because they don't want to lose customers to gas. As consumers and distributors in southern New Brunswick have discovered, natural gas is no panacea, and developing a local market will take many slow and painful years.

On the other hand, having the ability to sell gas to the U.S. market is a huge advantage for major gas buyers. Companies in New Brunswick that signed up for a piece of the existing Sable offshore gas are themselves often not ready to burn it, because they have not yet written off their old equipment either, and gas is often not cheaper than alternative fuels. Selling the short-term surplus to American consumers is thus a boon to New Brunswick industries.

Why more is better

But bigger than the benefits of consuming gas, or selling it to U.S. consumers is the benefit that comes from expanding the supply of offshore gas.

By some estimates, the offshore industry has spent less than \$2 billion in exploration development and infrastructure construction to date. Perhaps that's not yet enough, but I note that the NEB states in its recent paper on the region's gas markets that over 4800 companies in Atlantic Canada provided goods and services to the industry between 1996 and 2001, and the vendor list included over 1000 companies from New Brunswick and PEI. That's far more economic benefit than the availability of natural gas in *southern* New Brunswick has generated. But if we get a few breaks and the potential reserves offshore turn out to be real, the spending can reach as much as \$50 billion, or about 25 times what we've already seen.

That's economic activity too large to be contained by just one province in our small region; it will have powerful spillover effects in New Brunswick and P.E.I., as well as in northern New England and eastern Quebec. But it is precisely this impressive potential growth that is threatened if the oil and gas industry becomes convinced that it will not have full access to the U.S. market for the gas it brings ashore.

Why the economics of gas distribution matter

It is, of course, reasonable to believe that Atlantic Canadians should be the primary beneficiaries of their own natural resources. But there are many ways to benefit from natural gas, and having first claim on the resource, or enjoying a below-market price are not the only, or even the best, strategies to pursue.

The question of why we are selling our gas to Americans has already been answered in general terms, but it might be helpful to delve into it in more detail. Stand-alone gas bears

the full cost of production plus the infrastructure costs to get it to market. In the case of the Sable Offshore Energy Project and the Maritimes & Northeast Pipeline, the minimum economically viable production plateau is 560,000 gigajoules (GJ) of gas per day. By comparison, SOEP was asked to reserve, for the first three years of the project, 10,550 GJ/d for the Nova Scotia market — less than 1/50th of the minimum needed to produce the first gigajoule. Therefore, only a large market such as New England can generate the critical mass necessary to justify the investment in infrastructure. In our case the New England market is literally paying the freight. Shippers in New England, who contract for capacity, guarantee the volume of gas necessary for the viability of the line. Producers have undertaken to backstop any shortfall.

Diverting large volumes of gas to the local market and paying only the Canadian transportation toll would mean a decline in transmission revenues (the US toll is lost) and the viability of the transmission facilities would be weakened, *unless the diverted gas were replaced*. The economics of the pipeline depend on selling the near capacity of the line in New England. Therefore, without the New England market our gas would stay in the ground, generating benefits for no one. This, like so many other factors, points up the fact that this region's greatest interest lies, not in squabbling over the distribution of the footling amounts of gas that have already been discovered but, on the contrary, our greatest interest lies in finding more resource, more natural gas.

So why not force local distribution companies (LDCs) to provide the majority of Atlantic Canadians access to the gas distribution network, regardless of the economics, as the quid pro quo for the privilege of selling gas?

The delivery of gas to customers where the cost of gas distribution exceeds its revenue will force subsidization of non-economic users, thereby raising average delivery costs and prices. One might ask what is wrong with this – we subsidize individuals and groups all the time. Why shouldn't we subsidize uneconomic users to create jobs by giving them cheap gas?

Subsidies do indeed benefit those being subsidized, *but at the expense of everyone else*. Say it costs me \$1,000 per year to heat my house with gas at market price. Now suppose the utility charges me \$1,100 for the same gas and uses the \$100 to cover the costs of providing subsidized service to non-economic users. Wouldn't this create some extra jobs?

It sounds good until we look at the larger picture. Without artificial cross-subsidization, I have gas to heat my house and \$100 to spend on other goods and services. With cross-subsidization, I just have the gas. Therefore, the jobs and income I would have created by spending the \$100 are lost. Yes, jobs have been created in the gas industry by artificially subsidizing some users. But experience shows that such misallocation of resources and economic inefficiencies – taking into account their combined effects across the economy, not just within the subsidized industry – almost always destroy more economic value than they create.

Even within the industry, the effects are perverse. By definition, not all users can be subsidized. At \$1,100 per year for unsubsidized users, there will be fewer people willing to switch to gas. People also respond to higher prices – they buy less. Subsidies affect more than value and prices. They can jeopardize the viability of the distribution system.

Why less (cost) is more (gas)

Let me return to the question of the challenge of increasing the supply of gas for a regional exploration and development industry facing high costs. Here are some comparisons that may help you to situate our industry relative to other O&G basins around the world. This is vital because we cannot understand this industry unless we see the degree that we are in competition with others for the industry's scarce resources.

Exploration is the most essential part of the industry. Without successful exploration, there is no production, no royalties and no jobs. And the fact that we have successfully explored for and brought on stream one producing field, with one more slated to come on stream in a couple of years but currently under review, is only the beginning of our potential. But unless we continue to encourage exploration and the production of more natural gas, the economic opportunities that the gas represents for us will be significantly diminished. Unless we are growing, we are dying.

Remember that Deep Panuke, for example is only slated to have a production life of 11 years, and the Sable reserves have recently been downgraded by as much as 40%. If we want to build a viable long-term industry with the infrastructure to capture more of the production and development phase work, we have to be finding a lot more gas. That will help to improve the economics of extending the network through to outlying regions, but more importantly, it will improve the economics of the industry overall, because the cost of much infrastructure associated with the oil and gas industry is characterised by high fixed costs and extremely low marginal costs. Among other things, according to the NEB, “the costs of managing supply and transportation become more significant on a per unit basis when there are smaller volumes involved.” Put the other way, the larger the volume of gas being explored for, developed and shipped, the lower the unit costs of production, the greater the profitability of the industry, and the more investment the region attracts to discover and develop new resource. This is the classic virtuous circle.

But it is proving exceptionally hard to create that virtuous circle here, because this is an exceptionally high cost region to work in.

There is huge work to be done to find out the true extent of gas available offshore. The number of wells drilled in the Scotian shelf is numbered in the low hundreds, and the number of **explorations** wells is literally a handful. On the other hand, 40,000 wells have been drilled on the shelf of the Gulf of Mexico and over 300,000 in Western Canada. We are still largely ignorant about the extent of our resource, and a very great deal of exploration is going to be needed in order to find, as we hope the very significant resources that are needed to sustain a viable industry here for years to come.

But according to the NEB, “Success [of exploration] rates are typically low in a new basin; hence exploration and development in offshore Nova Scotia is high risk. Producers indicate that costs are high (10-25% higher than the Gulf of Mexico), seismic is difficult to interpret and lead times for development are long. High costs are due to a number of factors, including climate and oceanographic conditions, as well as poor economies of scale due to a lack of a sustained level of activity. Shallow waters on the Scotian Shelf cost from \$40 to \$80 million to drill, while costs for deepwater wells range from \$70 million to \$120 million,” and we have now had far too many dry holes. The cost of wells elsewhere is:

Western Canada: \$.5-1 million
Columbia (onshore) up to \$1.5 million
Libya, onshore \$4-5 million
Gulf of Mexico (offshore) around \$6 million
North Sea \$30 million

And make no mistake – exploration companies are searching world wide for opportunities today. There are two simple facts of life in this business: One is that there are too few exploration and development dollars chasing too many opportunities. The second is that O&G companies exist in a competitive environment in which low cost opportunities will be exploited first. These are not charities – they are businesses, and they make their money by satisfying demand and keeping their prices competitive with others.

Remember that, in addition to the cost factor, oil-prone basins such as the North Sea and the Gulf of Mexico attract the bulk of the risk capital because being able to produce both oil and gas is more attractive than just gas alone, and the infrastructure costs of bringing gas to market can then be shared with petroleum. Not so here.

Again, arguing that we limit the export of natural gas at this stage in order to “force” distribution into otherwise uneconomic regions is an indulgence that will only result in an uncompetitive industry whose high costs will make already marginal exploration and development highly unlikely. We are far better off reaping the full market value of the resource at this stage, and struggling to lower, not to raise our costs, and encouraging a highly competitive and expanding exploration and development industry.

Further expansion of distribution will come, but that is a much later stage of development. And we could lard the cost of distribution expansion onto the taxpayer rather than, say, the pipeline and distribution companies, but then you face the problems I touched on earlier of the irrationality of the pattern of redistribution that results, plus the extra tax burden in a region that already staggers under an uncompetitive tax burden at a time when the most successful jurisdictions on the continent are using their competitive tax regime as the chief tool in their struggle to attract new investments.

What it all adds up to

In summary, this is a high cost, high-risk region whose potential is little understood and expensive to explore. It is transporting small quantities of gas to market, making unit transportation costs high. The region has access to many competing fuels that are highly substitutable for gas, and gas is no energy or economic development panacea. The real potential of gas to promote prosperity lies in greater exploration and development and the bringing on stream of much larger supply. At this moment to allow the politics of bringing gas to unserved areas at the expense of making the development of the offshore less economical, is the worst kind of trade-off — minimum short term gain for maximum long term pain.

Thank you.