

InfoNorth

Industry Perspectives on Barriers, Hurdles, and Irritants Preventing Development of Frontier Energy in Canada's Arctic Islands

by Christopher Harrison

BACKGROUND

The Canadian Arctic Islands and intervening channels are known to be rich in hydrocarbon resources. The combined Hecla and Drake Point discoveries of Sabine Peninsula on Melville Island have recoverable and marketable natural gas reserves estimated at almost 9 trillion cubic feet (Tcf). Proven reserves for the western Sverdrup Basin, drilled and delineated by industry exploration between 1969 and the early 1980s, are 17.5 Tcf gas and 1.9 billion barrels (bbl) of oil while total resources for Sabine Peninsula and western Sverdrup basin are estimated at 44 to 50 Tcf gas and 3.5 to 5.5 billion bbl oil (Chen et al., 2000). The Canadian Energy Research Institute (CERI) has recently released a report (Chan et al., 2005) which indicates that transportation of proven Melville Island gas is economically viable for development scenarios involving either liquefied natural gas (LNG) tanker shipments to the eastern seaboard of North America or compressed natural gas (CNG) vessels to a Mackenzie Valley pipeline. In spite of these findings, however, there is still significant industry reluctance to develop the gas resources of the Arctic Islands.

This paper describes specific industry concerns with the development of Arctic Islands resources. Data were gathered during telephone interviews with exploration and development managers representing six medium-to-large domestic and multinational energy companies operating on the Arctic frontiers of North America. The issues discussed were identified in a Natural Resources Canada study entitled "Reducing the Geoscientific, Environmental and Regulatory Barriers to Exploration, Transportation and Development of Energy in the Arctic Islands." The approach taken for each interview was to provide some historical background on the topic, explain the purpose of the interview, and then ask respondents' opinions on which issues are most significant in accounting for the failure to renew exploration in Canada's Far North and the lack of progress on developing existing proven reserves.

It became apparent with the first interview that some issues, such as the lack of development infrastructure and

certain regulatory problems, could be considered true barriers to energy development in the Arctic Islands, but other issues were viewed as either hurdles or mere irritants. It also became very clear that the potential solutions available to government scientists and regulatory agencies cover a broad spectrum. The paper concludes with specific recommendations for future work.

ENVIRONMENTAL ISSUES

Transportation Infrastructure

Lack of transportation infrastructure was cited by all of respondents as the most significant barrier to energy development and renewed exploration in the Arctic Islands. In so far as the distance to market, hostile climate and related working conditions for development, short shipping season, and ongoing ecological risks are the root cause of the lack of infrastructure, then this issue can be readily identified as the dominant environmental issue. Since the transportation of oil by tanker from the Bent Horn field on Cameron Island has been proven feasible, the present transportation issue relates primarily to the movement of what is often referred to as "stranded gas." This gas includes proven reserves that fill the large Drake and Hecla gas fields of Sabine Peninsula on northern Melville Island and the various other pools of western Sverdrup Basin. The CERI report of Chan et al. (2005) was viewed as a useful starting point for addressing the transportation feasibility issue. However, several respondents felt that a full technological analysis of all the transportation options is still required. Similarly, there is still no clear understanding as to whether stranded Arctic gas would be moved by pipeline, LNG or CNG tanker, or by some combination of the above methods. A minority view is that even the use of submarine technology cannot yet be ruled out.

The lack of infrastructure will sideline all exploration and development in Canada's Far North as long as there are other frontier areas that can link to developing infrastructure (i.e., new pipelines) and provide a return on

investment within 5 years for medium-to-large size domestic companies and within 15 years for the largest multinational corporations. For the latter group of companies, the accessible Arctic frontiers at present include parts of Arctic Russia, the Barents Shelf, West Greenland, the Brooks Range Foothills, and the North Slope of Alaska. Since the Beaufort-Mackenzie Basin is only now seeing renewed exploration interest by a few of the largest companies, in spite of growing expectations of a new pipeline to the region, the implication is that industry currently views infrastructure and development in the Arctic Islands as highly unlikely within the next 15 years. This situation will remain unchanged unless there is serious consideration of the many regulatory issues associated with frontier exploration and development.

Ecological Sensitivity

An issue for renewed energy development in the Canadian Arctic is the potential for unfavourable press. To paraphrase one respondent, “Why would I want the name of our company dragged through the mud by hostile media and unforgiving investors?” The risk of images showing oil spilled on ice or oil-soaked sea birds is sufficient reason for all medium-size companies and many of the larger players to avoid any areas perceived as ecologically sensitive. Several respondents noted the continued moratorium on critical transportation access routes, including Lancaster Sound, which lies at the eastern end of the Northwest Passage and remains the key to access for potential tanker traffic between Arctic Islands gas sources and markets on the eastern seaboard or in western Europe. Of course, this essay is concerned with the transportation of stranded gas and, while there are certainly ecological risks associated with moving any commodity by ship through environmentally sensitive waterways, it is fair to say that the risks are not the same for gas in any form as they are for crude oil.

While most respondents considered ecological sensitivity to be a true barrier, others considered it a hurdle that is part of doing business in the world’s frontier areas. Another view was that what may appear to be a mere hurdle prior to initiating frontier development can become an insurmountable barrier as the process of development proceeds. The example of the Mackenzie Valley pipeline is frequently cited as a case in point. Consideration of ecological sensitivities along the pipeline route has created ever lengthening delays in development, many of them unforeseen. Many in industry consider the Mackenzie Valley pipeline development as a litmus test for Canadian frontier energy development in general. The process so far has been filled with difficulties, brought on in large part by a defective and ambiguous regulatory process. This situation does not bode well for the chances of gas development in the Arctic Islands, particularly when one also considers that the world is filled with sensitive ecosystems, many of which are administered by governments that accept these risks and yet encourage resource development.

Several respondents indicated that the largest corporations are less sensitive to “bad press” concerning ecological issues and that certain foreign national petroleum companies can, supposedly, afford to ignore outcries from unsympathetic media sources. If this is true, then Arctic gas may be shipped to market only when there are development agreements in place between the territorial governments and the largest offshore companies.

REGULATORY ISSUES

Lack of Regulatory Process

Our interviews indicated that environmental issues, as described above, are enough to prevent all medium-size companies and many larger ones from also having to consider the other barriers, hurdles, and irritants associated with Arctic energy development. Companies that identify the regulatory regime as part of the problem have firsthand experience on developments such as the Mackenzie Valley pipeline project. Apparent lack of regulatory process has been cited as the most significant problem. Partners in the Mackenzie Valley pipeline project point to the proliferation of official governing bodies, land claimants, non-government interest groups (NGOs), lawyers, and regulatory process “consultants” as contributing to the problem. The federal body responsible for setting regulatory process is described by one of our respondents as an agency “flying by the seat of its pants.”

The regulatory problem is understood to be a product of the fallout from Canada’s former National Energy Program (NEP). When the Canadian government withdrew from the business of supporting Arctic exploration after 1984, it also adopted a hands-off approach to future development in the region, leaving emerging frontier energy companies to deal directly with both Native land claimants and a vast array of non-industry stakeholders. The companies legitimately felt that some of this negotiation was not their responsibility and were, until recently, willing to stop pipeline construction planning until the federal government took responsibility for settling outstanding land claims, sovereignty, and royalty-sharing agreements (to name just a few of the issues).

While it is too early to assess the significance of the apparent change of federal policy concerning involvement in the energy development process, it is clear to some industry respondents that the Canadian government’s views on energy development are highly ambiguous. While the federal government recognizes that frontier energy production will bring economic benefits to Northerners and all Canadians, competing interests such as the need to protect sensitive ecosystems and traditional lifestyles of Northerners are considered equally important. While national governments in the circumpolar area may continue to wrestle with these issues, some nations, most notably Denmark and Norway, also realize that a stable, long-term

regulatory policy and process will encourage new energy development in the North.

Sovereignty and Revenue Sharing

Sovereignty issues were viewed by several respondents as a barrier to renewed energy development in the Far North; others considered them to be an irritant. International sovereignty issues, specifically, were viewed as a future development problem for the Canadian Arctic Islands. The example of the dispute with the United States over transportation access to the Northwest Passage was cited as an early symptom of a potential future struggle to establish sovereignty over offshore resources. Other examples include the recent new claim of France to a larger share of the continental shelf and its resources south of St. Pierre and Miquelon on Canada's East Coast and the continuing moratorium on exploration in the western Beaufort Sea associated with the disputed offshore international boundary between Yukon and Alaska.

Territorial sovereignty issues are also seen as a future problem for Arctic energy development. Several respondents noted that the boundary between Nunavut and the Northwest Territories passes through the Hecla gas field of northern Sabine Peninsula. In planning for territorial partition in the late 1990s (when Nunavut was created from within the eastern part of the former Northwest Territories), this division may have seemed a reasonable compromise for the sharing of resources between the two new administrations. The decision now guarantees that there will be disputes over ownership and royalty payments when production facilities are planned to draw gas from one side of the pool or the other.

Right of access to production royalties will also become apparent when a development decision is made. Non-government organizations, which at present have not expressed an interest in these resources, will claim a partial right to compensation or a percentage of royalty payments when the value of the resource is more generally known.

A significant task for the federal government is to settle the major sovereignty issues in the Arctic Islands and to establish revenue-sharing agreements involving the territories and the identifiable NGOs. This process should be viewed as a fundamental part of developing and maintaining a stable and unambiguous regulatory regime: one that clearly states the rules of engagement for future investors in Canada's North.

Investment Climate

Poor investment climate was viewed by some respondents as a barrier to energy development in the North; others viewed this problem as a hurdle or, for smaller companies, as yet another set of exploration irritants. Two aspects of the problem were identified.

The lack of tax incentives for northern exploration was cited as one example of an unfavourable investment climate. In the 1970s and early 1980s, the federal government heavily sponsored Arctic exploration as part of its national

energy policy. When these subsidies were withdrawn, after the National Energy Program ended in 1984, the ability to explore in the North also ended. It is clear, therefore, that favourable tax regimes can encourage frontier development. However, the downside to the previous attempt at this type of government intervention in the energy business—that is, the controlling of high energy prices for the short-term benefit of consumers—is still viewed with anger and resentment by the energy resource sector (and by the public in general) throughout western Canada. The obvious solution to this dilemma is for federal and territorial governments to consider an enlightened regime of tax incentives that are not linked to downstream energy price controls. The resulting improvement of investment climate will send a message to investors that Arctic Canada is open for business. The corollary is that a clearly stated regulatory regime will establish specific social and environmental rules of engagement for the anticipated new business.

The second detrimental aspect of the investment climate noted by our respondents was the dominance and favoured status attached to investment trusts in Canada. While these vehicles for investment may suit an increasingly conservative generation, now dominated by greying and retiring baby boomers, investment trusts cannot place investment funds in high-risk opportunities such as Arctic energy development. The solution to this problem is for the federal government to recognize that higher-risk investments are important for the long-term economic health of the country and modify the tax regime to reflect this fact.

Ownership

PetroCanada, through its acquisition of Panarctic Oils Limited, is now the principal leaseholder of all the "significant discovery licences" (SDLs) in Canada's Arctic Islands. In the 1970s and early 1980s, Panarctic managed a significant proportion of the exploration and successful drilling of the best Arctic Islands prospects. Apart from the federal government, which was the largest investor in Panarctic, there were hundreds of additional shareholders, including many small and medium-size companies and also individuals. The proportionate interest of each of these investors varies between SDLs. According to one respondent, the total number of investors in the Panarctic discoveries is close to 400. The highly divided nature of the Arctic Islands SDLs has been noted as a development issue by most respondents, but a determined large company would consider it more an accounting headache than a barrier to renewed exploration and development.

One respondent suggested adjusting the regulatory process to encourage development of stranded gas reserves where credible technical reports have shown these reserves to be economically viable. The encouragement to SDL leaseholders and associated investors could take the form of a "maintenance charge" paid by leaseholders to the federal regulatory agency. The charges would be waived

when the leaseholders produce detailed technical reports demonstrating the continuing lack of viability of their lease-held reserves. The government could use the maintenance fees collected for successful exploration to fund research that would investigate outstanding transportation, social, and environmental issues associated with moving Arctic gas to market.

GEOSCIENTIFIC ISSUES

All respondents considered geoscientific issues to be insignificant when stacked against the transportation and related environmental barriers to accessing stranded Arctic Islands gas and the ambiguous and unfavourable regulatory environment for Canadian frontier exploration and development. Nevertheless, most respondents also felt that federal and territorial government agencies can do much to promote Arctic energy potential more effectively, using a wide range of geoscientific and related map-based social and environmental data sets.

Promotional Process

One respondent noted that much of the expertise in the Arctic Islands has now disappeared from the Canadian oil and gas exploration business and that, without some significant new stimulus, companies are unlikely to train a new generation of employees in a high-risk frontier region with no foreseeable development infrastructure. While an improved regulatory regime alone may encourage some companies to re-evaluate this policy, it is also important that the federal and territorial governments take a unified but multi-pronged approach to promoting and stimulating new exploration and development. Greenland was cited as a particularly effective example. (1) A government-influenced corporation (TGS-Nopec) undertakes marine seismic acquisition; (2) The federal geological survey (GEUS) generates geoscience data sets tailored to industry needs; (3) TGS publishes the government-generated data and markets, for profit, large thematic and geoscience synthesis datasets (i.e., basin atlases); (4) through an enlightened regulatory regime, the government expresses its desire to preserve habitat and maintain traditional Native lifestyles; (5) TGS undertakes exploration in partnership with the private sector; and (6) TGS continuously promotes new exploration opportunities through high-profile advertising at all major industry conventions (e.g., Association of American Petroleum Geologists) and by sending company teams on promotional tours to prospective industry partners across Europe and North America.

RECOMMENDATIONS

Environmental Issues

Both industry and government should view encouraging research into the feasibility of transporting stranded

gas in Canada's Arctic as a priority. They should begin this process by initiating a dialogue between industry stakeholders and the university research community regarding specific topics of research. Faculties of marine science, engineering, and environmental design would appear to be logical places to start. Research opportunities can be encouraged with modest financial support from industry and the national funding agencies (i.e., the Natural Sciences and Engineering Research Council of Canada).

While social issues and ecological sensitivity are recognized as major concerns for Arctic energy development, it is also well known that not all ecosystems are equally fragile or equally threatened by regulated forms of development. Although there is an industry perception that Arctic ecosystems and related health and safety issues are well known and understood, the relevant information on these topics is scattered. A logical first step to understanding these problems would be studies to identify health and safety baselines and to produce maps of sensitive habitats for a range of significant Arctic flora and fauna. The focus would be on potential transportation routes both onshore and offshore, and on potentially affected communities. Since habitats can also be seasonally sensitive, mapping of habitat sensitivity throughout the year should also be considered. A starting point for this work would be to examine what has been accomplished to date by producing GIS products that link published ecosystem and environmental studies to study localities across Arctic Canada.

Regulatory Issues

A significant barrier to renewed Arctic energy development is a perceived lack of regulatory process. To correct this problem, a careful examination of successful regulatory process in competing foreign jurisdictions around the Arctic would be a useful starting point. Key nations involved in the regulation of Arctic energy development include Denmark and Greenland, Norway, the United States, and Russia. Comparative studies should be carried out in close cooperation with the significant Canadian regulatory agencies, but the principal territorial stakeholders should also formally acknowledge that they support the investigative process.

The federal government must view resolution of sovereignty issues as a high priority. This includes 1) issues involving the United Nations Commission on the Law of the Sea (UNCLOS) in what are currently international waters, and 2) specific international disputes relevant to Canadian Arctic gas, especially the question of access to the Northwest Passage and related uncertainties (if any) concerning access to offshore energy resources located in the inter-island channels of the Arctic Islands.

It is expected that there will be territorial and Native land-claim disputes over revenue sharing derived from future Arctic energy production, particularly where known energy reserves are transected by the Nunavut–Northwest Territories boundary (as in the case of the Hecla gas field on Sabine Peninsula). These questions should be settled

early so that all stakeholders know the value of their resources and can make, or even promote, appropriate development decisions based on this foreknowledge.

The case for an improved investment climate to encourage frontier energy development need not carry the odour of the long-terminated National Energy Program. The main objective should be frontier energy development tax incentives, or justifiable maintenance charges to significant discovery leaseholders, without the artificial price controls to consumers. A second method to encourage frontier development is to reduce or eliminate the tax advantages currently given to Canadian investment trusts and to use some of those advantages in areas that will stimulate higher-risk investments on the frontier.

Geoscientific Issues

The purpose of addressing geoscientific issues is to create a favourable climate for new investment in the Canadian Arctic by coordinating the acquisition, delivery, and promotion of a wide range of specialized geoscience information. Most products can draw on existing scattered data sources and do not require new fieldwork.

CONCLUSIONS

Interviews with geoscience representatives of medium- and large-size Canadian petroleum producers indicate that the principal barriers to development of proven gas reserves in the Canadian Arctic Islands are (1) social and environmental issues that prevent the construction of an appropriate transportation infrastructure and (2) a hostile regulatory regime. This paper recommends that the federal government encourage research on specific technological issues associated with proposed transportation systems for stranded Arctic gas, as well as production of social/environmental and ecosystem maps of potential transportation corridors. Also recommended, as a prelude to regulatory reform, is a careful evaluation of regulatory regimes in other circum-Arctic nations currently shown to be effective. The objectives of regulatory reform should be to:

- 1) establish stable, long-term guidelines for environmental protection and resource development;
- 2) commit to revenue-sharing agreements with Arctic stakeholders,

- 3) resolve emerging and potential international and territorial boundary disputes that may involve Arctic and offshore resources, and
- 4) create a tax regime that encourages high-risk frontier energy development, but does not jeopardize industry support by artificially controlling the price consumers pay for energy.

Respondents to our telephone interviews indicated that geoscience issues were not barriers to the development of stranded Arctic gas. However, it is generally acknowledged that the coordinated acquisition, delivery, and promotion of a wide range of specialized geoscientific information by territorial and federal agencies can have a profoundly stimulating effect on new frontier energy developments, especially when this work is undertaken in a stable and encouraging regulatory regime and where issues of transportation access and environmental hazards are either known or are being assessed.

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Christopher Harrison is a research scientist with the Geological Survey of Canada in Calgary, Alberta. E-mail: charriso@nrcan.gc.ca.