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Scotia Synfuels : a project for
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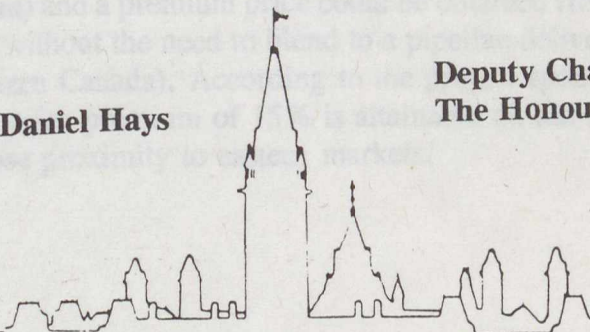
A PROJECT FOR THE 1990s

Third Report of the Standing Senate Committee

on Energy, the Environment and Natural Resources

**Chairman
The Honourable Daniel Hays**

**Deputy Chairman
The Honourable William M. Kelly**





Monday, June 15, 1992

The Standing Senate Committee on Energy, the Environment and Natural Resources has the honour to present its

THIRD REPORT

Your Committee, authorized to study the Scotia Synfuels project, has, in its obedience to its Order of Reference of 10 December 1991, proceeded with that inquiry, which included consideration of testimony from officials of Scotia Synfuels Limited, the Departments of Energy, Mines and Resources and of Industry, Science and Technology, and now presents its final report.

BACKGROUND

The Scotia Synfuels project involves the co-processing of high-sulphur coal and oil to produce a stream of cleaner petroleum products, including naphtha (the primary ingredient in gasoline), diesel/ No. 2 heating oil, and heavy distillates. Pure sulphur is derived as a valuable by-product. Potential markets for the project's output stream include Canadian and foreign refiners, as well as domestic power utilities such as the Nova Scotia Power Commission, which has expressed considerable interest.

The site chosen for the co-processing plant is the former Gulf Canada refinery located at Point Tupper, Nova Scotia, which benefits from considerable infrastructure already in place, including: buildings, roads, storage tanks, waste water treatment ponds and a wharf. The plant would use coal from the Cape Breton Development Corporation (DEVCO), which currently mines in excess of four million tonnes per year and has proven reserves of one billion tonnes, as well as heavy oils from Mexico and Venezuela or residuum from refineries in eastern Canada. The total capital cost for the project stands at \$500 million (in 1990 dollars).

For economic viability, the project relies on the "spread," or the margin between product prices and feedstock costs, to cover operating costs, financing costs and an adequate return-on-equity to its shareholders. The blended coal/oil feedstock is less costly than the heavy oil used in current heavy oil upgraders (the coal component is cheaper than the heavy oil component) and a premium price could be obtained from marketing each product stream separately (without the need to blend to a pipeline delivery system, as is currently being done in western Canada). According to the project sponsor, Scotia Synfuels Ltd., an overall netback price premium of 15% is attainable on the output side, owing largely to the project's close proximity to eastern markets.

Scotia Synfuels Ltd. was formed in 1985 to advance preliminary work undertaken on the project by a consortium during the 1981-85 period. Buoyed by the success of a feasibility study and encouraged by provincial and federal levels of government to test the upgrading technology, the company formed a new consortium with Petro-Canada as partners, and purchased its refinery assets at Point Tupper. Work began on establishing the technical feasibility of a synthetic fuels plant using the co-processing technology. The test results which were produced in the summer of 1989 indicated that the project was technically feasible, generating yields (five barrels per tonne of coal) that were far superior to those achieved, for example, in oil sands operations.

Regarding the project's commercial viability, a study undertaken for Scotia Synfuels by Wood Gundy revealed that the project would be feasible if it could access a number of federal incentives which had been made available to stimulate economic activity in the Atlantic region. These included the 45% Cape Breton Investment Tax Credits (CBITC) and the Atlantic Enterprise Program (AEP) loan guarantee and interest buy-down subsidies. It should be noted that the Synfuels project had been declared eligible for these new incentives by the Department of Regional Industrial Expansion as early as 1985.

On the basis of these positive results, Scotia Synfuels submitted a formal request for federal financial assistance, and in particular the CBITCs. No cash injection was requested to construct the facilities required, but the proponent did ask for annual interest buy-down assistance on a \$260 million loan. In fact, the project proponent was prepared to drop its request for a guarantee on that loan and the interest rate buy-down provisions, in exchange for retail tax relief on petroleum products derived from coal. It was argued that such relief is already in place for such alternative transportation fuels as propane, natural gas and diesel, as well as blends employing ethanol and methanol. Widening the access to tax relief could assist measurably in generating movement towards a more level playing field in the taxation area.

Financing for the capital costs of the project was to be sourced exclusively from the private sector. In structuring the project application in this manner, it was felt that if the market decided in its wisdom that the economic risks of the project were too high and that the initial investment should not be made, the federal government would bear no financial exposure. On the other hand, if the project was to proceed and was successful, the government could stand to benefit from sizeable tax revenues associated with the economic activity generated.

As was noted, the commercial feasibility of the project as then formulated hinged critically on a positive reply to the request for federal regional incentives. Yet this did not happen. The federal government concluded, in November 1990, that the project as then structured was economically unattractive. This conclusion, along with a number of other reasons such as the withdrawal of Petro-Canada as a sponsor of the project, the absence of

substantial private sector financial interest, and the inability of the project to gear up for the 1992 CBITC expiry date, served to conspire against success in receiving fiscal support.

Faced with the federal government's rejection, the project proponents were forced to re-orient their project proposal substantially. In December 1991, a new submission was presented to the federal government by Scotia Synfuels and the Government of Nova Scotia to provide funding for the project's development stage. Under this proposal, the federal government has been called upon to contribute a total of \$14.25 million of up-front financial assistance towards a detailed process design engineering and pilot plant test program, the technical and economic results of which would determine the ultimate viability of the fuels plant.

With respect to the full commercial implementation of the project, the sponsors request only that the project be entitled to a 30% Special Investment Tax Credit (SITC) and that, as was previously alluded to, the federal government provide excise tax relief for the product output. The previous demands for loan guarantees and interest subsidies have been dropped, and capital cost financing will, as before, be met entirely through the private sector.

PROJECT RATIONALE

Without a doubt, Canada is rapidly depleting its reserves of conventional light crude oil. While we currently produce more than we use, new discoveries are not keeping up with production and it is projected that by the end of the decade, almost all established reserves will be depleted. Left to the market alone, Canada will likely once again become a net importer of oil. At the present time, Canada's self-sufficiency in crude oil is about 60% after peaking in 1984 at 83%. Moreover, Atlantic Canada is entirely dependent, and Quebec 75% dependent, upon foreign supplies of crude oil to meet their requirements. Ontario oil refineries may also soon be exposed to insecure foreign supplies, if an application to import up to 300,000 barrels per day of crude through a reversed Sarnia-to-Montreal pipeline (now mothballed) currently before the National Energy Board is approved.

It has often been stated that energy has a pervasive influence on how Canadians live. The country's high fuel consumption per capita for heating and transportation is necessitated by Canada's climate and geographical expanse. In particular, because oil holds a dominant position in satisfying energy requirements and because supply is so heavily concentrated in the Middle East, a region vulnerable to unpredictable and uncontrollable events, it can only be viewed as a strategic resource. As the Energy Options Advisory Committee concluded in its report on Canada's energy policies:

As the pattern of energy continues to evolve, Canada should adopt policies that foster adaptation to change, to ensure reliable supplies of energy in appropriate forms, at competitive prices, where and when they are needed. This approach recognizes the benefits of interfuel substitution capability...¹

The Scotia Synfuels project presents Canada with a modest but important opportunity to reduce our, but more specifically eastern Canada's, excessive dependence on unreliable foreign supplies of oil. The Point Tupper facility would initially produce about the equivalent of 14,400 barrels of oil per day for the transportation fuels and power utility markets of eastern Canada and the northeastern United States. Construction of additional processing capacity could eventually boost its capacity to 50,000 barrels per day. The replacement of foreign oil by indigenous coal from Nova Scotia would represent a savings of between 6,400 and 22,250 barrels of imported crude oil per day for 35 years, on top of the boost the project would provide to that Province's coal industry.

As a new Canadian-owned technology, the coal/oil co-processing unit effectively increases available Canadian light sweet crude reserve at a comparable (or lower) cost per barrel than do conventional methods. The synfuels technology also represents an improvement over the development of frontier and offshore crude oil, which by comparison entail high finding costs, transportation uncertainties and adverse environmental concerns related to exploration, production and transportation.

The coal/oil co-processing plant contemplated at Point Tupper would be a North American first, and it would demonstrate to potential users around the world the effectiveness of a commercial technology which upgrades the world's most inexpensive and least environmentally-acceptable hydrocarbons. A successful Scotia Synfuels project would reinforce Canada's commitment, as recently expressed by The Honourable Jake Epp, Minister of Energy, Mines and Resources, to:

... intensify our efforts to increase the awareness and understanding of coal among Canadians. Coal is, after all, Canada's largest fossil energy resource, and it behooves us to learn how to use it cleanly and efficiently, so that it may fulfil its appropriate role in Canada's energy future.²

¹ Energy, Mines and Resources Canada, Energy Options Advisory Committee, Energy and Canadians Into the 21st Century, 1988, p. 13.

² Notes for a speech by the Hon. Jake Epp, Minister of Energy, Mines and Resources Canada to the annual dinner of the Coal Association of Canada, 19 April 1990, p. 7.

In terms of regional development, the Scotia Synfuels project as is currently constituted offers to create 200 direct jobs at Point Tupper, thereby helping to revitalize a depressed region, and create or sustain 350 indirect jobs associated with DEVCO coal mining. Additionally, the project will induce other jobs that could, according to the project proponents, bring total employment of 2,000 persons to the region for up to 35 years. The new employment which is created will be located in an area where the unemployment rate is currently 20%. By comparison to the Hibernia project, as many or more permanent jobs will be created by Scotia Synfuels Ltd., at only 6% of the capital cost.

The Nova Scotia Department of Industry, Trade and Technology estimates that during the construction phase, a total of 2,687 person-years of employment and household income of \$178.8 million will be created. On the operating side, an annual infusion of \$25.3 million is projected.

Major capital projects of this type also generate substantial additional economic gains in the form of industrial benefits and tax revenues. The Synfuels project is expected to enhance business and employment opportunities throughout the country. On top of this, the federal and provincial governments stand to reap annual corporate taxes amounting to \$800 million from the project, not including personal and corporate taxes from employees and suppliers that will also be due to both levels of government.

Increasingly, environmental concerns have tended to dominate energy policy-making. Important environmental gains could be realized with greater use of the technology which is planned for this project. The use of co-processed fuels offers the benefit of lower air emissions such as SO₂ and NO_x, and could contribute in a major way towards a reduction in the severity of the acid rain problem. This benefit is very substantial when compared to burning coal directly in a coal-fired plant.

In the Synfuels process, SO₂ and NO_x emissions are reduced by 99.6 and 97.1% respectively. Existing technologies that are aimed at reducing SO₂ and NO_x emissions from power utilities concentrate on removing the pollutants during combustion, which involves the circulating fluidized bed system, or post-combustion flue gas desulphurization, which involves the scrubber system, in each case adding limestone. However, the removal of the pollutants with the use of synthetic fuels, prior to combustion, may well prove to be an environmentally more effective route because it avoids costly capital and operating expenses to the power plants that use this alternative fuel. Furthermore, because the synfuels plant will produce pure sulphur as a by-product, there are no associated landfill disposal problems that plague conventional solutions.

A DEVELOPMENT FOR THE 1990s

Notwithstanding the difficulties that the project sponsors have experienced in convincing the federal government of the merits of government support, we believe that serious review of this worthy project proposal is warranted. As has been outlined, the Synfuels project could provide important socio-economic, technological, regional and environmental benefits to Canadians.

A number of developments have occurred since November 1990 to render the project more enticing to federal officials. According to Scotia Synfuels, the economics of the project have been enhanced, with lower feedstock costs achieved through the successful negotiation of a net back-pricing arrangement with the Venezuelan supplier of heavy crude, and higher revenues to be achieved through modifications in project design. Pre-tax rates of return for the project are now deemed by Scotia Synfuels to be entirely adequate when compared with industry norms, even without access to the 30% SITC, for which eligibility has been confirmed by the Department of Industry, Science and Technology.

With the project proposal reconstituted as mentioned above, there will also be less financial risk for the government to face. No longer will the government need to guarantee any private borrowings, nor will annual interest buy-downs be required.

Even if one rejects the economic analysis done for this project by Scotia Synfuels and contained in its most recent funding proposal, and one concludes that the project is not economically attractive given today's climate, economic factors alone should not always dictate our national decision-making. The evidence is quite clear that there are very significant social benefits to the country from this project going ahead. Energy security, regional development issues and environmental factors are important political considerations, and should be incorporated into a comprehensive social cost-benefit study. The Energy Options Advisory Committee provides us with wise counsel on this matter:

Canada's energy should be developed and used to its economic potential, to provide growth and prosperity for Canadians today and in the future. ... Environmental goals should be accorded the same importance as other economic and social goals in the planning, development and use of energy. ... Commitment to research, development and management of technology is critical to enhancing Canada's energy choices and environmental quality into the 21st century.³

³ Energy, Mines and Resources Canada (1988), p. 13, 55, 103.

We believe that the Synfuels project dovetails well with the federal government's prosperity and environmental initiatives. Reconstituted in its current form, the financial risks for the federal authorities have been substantially reduced. It is, simply put, a project for the 1990s. Given the diverse set of benefits that this project could provide, your Committee strongly recommends:

(1) that the Minister of Energy, Mines and Resources instruct his officials to undertake a comprehensive social cost-benefit analysis of the Synfuels project;

(2) that the federal government give serious consideration to the current Scotia Synfuels Limited proposal or, as an alternative, that it propose other favourable funding mechanisms for the project;

(3) that in the interest of being better able to control Canada's energy destiny, that the Government of Canada adopt an energy policy that would embrace federal government funding of energy projects of this type; and

(4) that to enhance its desire to reduce domestic requirements for conventional light crude oil, that the federal government examine the feasibility of providing producers of synthetic fuels from coal with excise tax relief, comparable to that given to producers of alternative fuels such as compressed natural gas, propane and diesel.

Respectfully submitted,

DANIEL HAYS
Chairman

