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GH-6-96

**National Energy Board
Joint Public Review Panel**

NSURB	NSPI
EXHIBIT#	P-9

**SABLE OFFSHORE ENERGY PROJECT
MARITIMES & NORTHEAST PIPELINE PROJECT**

**Written Evidence
of
Nova Scotia Power Inc.**

Introduction

1. Nova Scotia Power Inc. ("NSPI") is an investor-owned utility and is the principal supplier of electricity in Nova Scotia. It has been engaged in the production and sale of electric energy in Nova Scotia since 1919. NSPI's electrical generation, transmission and distribution systems operate throughout Nova Scotia. These operations include approximately 94% of the generation, 99% of the transmission and 95% of the distribution of all electric power in Nova Scotia. NSPI is regulated by the Nova Scotia Utility and Review Board pursuant to the *Public Utilities Act*. At December 31, 1996, NSPI served 384,856 residential customers, 34,016 commercial and industrial customers and 5,899 un-metered service accounts. Seven municipal electric distribution systems, which purchase their electric power requirements from NSPI, in turn served approximately 10,000 additional customers. Stellarton Basin Coal Gas Incorporated, a subsidiary of NSPI, holds 50% of rights to specified lands in Nova Scotia for the purpose of exploration and development of coal bed methane gas reserves.

2. For the year ended December 31, 1996, NSPI's revenue totalled \$739.2MM, of which \$730.5MM was electric revenue. In 1996, 45.6% of NSPI's electric revenue was derived from

residential customers, 49.8% from commercial and industrial customers, and the remaining 4.6% from municipalities and un-metered services. During 1996, electric energy sales were 9,144.1 GWh. During the five years and nine months ended December 31, 1996, NSPI's electric energy sales have grown at an average annual rate of 1.4%.

3. NSPI's generation capacity is 61% coal, 23% oil and 16% hydro. NSPI's regular coal supply is obtained from mines located in Nova Scotia. The heavy fuel oil requirements are purchased on the international spot market. Heavy fuel oil is used primarily at the Tuft's Cove generating station and in small quantities as backup fuel at coal-fired generating stations. Gas turbine generating stations, fuelled by light fuel oil, provide peaking capacity and emergency capacity when other parts of NSPI's generating system are unavailable. Hydroelectric capacity is also used primarily to provide peaking capacity, to meet momentary changes in electric energy demand, and to reduce fuel costs by displacing coal and oil-fired generation.

4. The energy mix both of the Province of Nova Scotia and of NSPI differs substantially from that of Canada as a whole. Natural gas is widely used in many other provinces while no gas is available in Nova Scotia. NSPI's capacity mix noted above is substantially different from the overall Canadian electricity production of 65% hydro, 15% coal, 15% nuclear and the remaining 5% mainly oil and gas.

Summary of NSPI Position

5. NSPI believes that Sable natural gas not only should but can be made available to consumers in Nova Scotia at a delivered cost that enables displacement of alternative fossil fuels. Seeking 90,000 MMBtu/d, NSPI is a major potential customer. While NSPI has signed a precedent agreement with Maritimes & Northeast Pipeline Project ("M&NE") for 90,000 MMBtu/d, NSPI will only purchase gas (and is only obliged to purchase) if the delivered price of gas and its use in NSPI facilities is commercially acceptable. NSPI is concerned that several positions of the proponents, the Sable Offshore Energy Project ("SOEP") and M&NE, including

the discriminatory postage stamp design, the linking of gas sales contracts to commitments to capacity on the M&NE pipeline, the level of M&NE revenue requirement and M&NE laterals' policy might make the delivered price of gas non-competitive with alternate fossil fuels and frustrate the desires and efforts of NSPI to incorporate this Nova Scotian resource in its fuel inventory and make the purchase of gas uneconomic.

6. It is NSPI's position that Nova Scotians should benefit from the Province's natural advantage of proximity to Sable gas. In particular, the price to Nova Scotian buyers should reflect the lower costs of transportation of gas to points within the Province. Unless offshore gas is available from the proponents' pipeline under an appropriate toll structure, Nova Scotians may effectively be denied access to it. While Nova Scotian coal will continue to be NSPI's primary fuel, Sable offshore gas is another important Nova Scotian natural resource. It, along with the Province's coal and hydro resources, should benefit Nova Scotians as one of the cost-effective options for power generation in this province. With respect to pipeline tolls, NSPI believes that Nova Scotians should benefit as follows:

- (a) A reasonable and efficient toll structure for the transportation of gas, which will contribute to lower power generation costs, will assist NSPI in providing customers with electricity at competitive rates; and
- (b) Competitive power rates, which appropriate pipeline tolls will help maintain, can contribute to the economic development of Nova Scotia. Direct access to appropriately-priced gas as an energy source will also help to attract new business and investment to the Province.

7. NSPI takes the position that the National Energy Board ("NEB" or "the Board") and the Joint Public Review Panel ("the Joint Panel") should only approve the SOEP and M&NE projects if:

- (a) tolls on the M&NE Pipeline are determined using point-to-point toll methodology; and
- (b) the NEB Market Based Procedure is applied in a manner to ensure that Nova Scotia customers are able to obtain gas on similar terms and conditions, including price, to the export customers that SOEP and M&NE seek to serve.

Markets for Electrical Energy

8. Markets for electrical energy are becoming increasingly competitive. Many jurisdictions are moving to open their transmission grids to give electric customers access to a variety of sources of generation. These changes are already well advanced in many American jurisdictions and in Alberta. The Reed Consulting Group Report *Assessment of the Market for Natural Gas in the Northeast United States* prepared for SOEP states that "the restructuring of the power market is encouraging development of gas-fired combined cycle merchant plants who are seeking to compete in the developing competitive electrical energy market". The Reed Report indicates that the construction of gas-fired electric power projects have been a major contributor to a dramatic growth in gas demand in the north-eastern United States since 1988, with "growth in gas requirements in the electric power market expected to be significant during the 1997-2006 time frame".¹

9. Electric-on-electric competition has not yet begun in Atlantic Canada. NSPI expects such competition is imminent. As this occurs, incumbent utilities find themselves in competition with utilities and generators in other jurisdictions, as well as with new sources of electric supply in their own jurisdiction. As the competitive electric market evolves, generators that are best able to control fuel costs will be the most successful. Competitively priced natural gas will allow NSPI to displace foreign oil in existing generating facilities through gas conversion; provide repowering opportunities for existing units by the retrofitting of a gas cycle to the existing steam cycle and allow NSPI to consider gas fired combined cycle generators for new capacity.

¹ Assessment of the Market for Natural Gas in the Northeast United States prepared by Reid Consulting Group, Chapter 6

10. Each competitor enters the market place with its own advantages and disadvantages. One important advantage that NSPI has is its proximity to a new source of natural gas supply. NSPI believes it should be given the opportunity to exploit this advantage and strengthen its position in the evolving competitive electrical energy market.

NSPI's Interest in Gas

11. NSPI has a serious and genuine interest in the use of natural gas in Nova Scotia. NSPI's interest in gas is twofold—primarily for its own use in generating electric power in Nova Scotia, and secondly as an alternate fuel source for residential, commercial and industrial customers in Nova Scotia. NSPI operates several generating units that could be fuelled by gas and, because of its potential requirements for large volumes of gas, NSPI can contribute to the creation of a gas market for Nova Scotia. NSPI's total load and diverse plant locations and potential locations could both enable and facilitate the development of a gas distribution network within the province.

12. Natural gas is considered to be an environmentally friendly fossil fuel which can be used efficiently.

13. NSPI has a 350 MW generating station at Tufts Cove, Dartmouth, Halifax Regional Municipality, currently fuelled by imported heavy fuel oil, which can be converted to burn gas. This plant is closest to the provincial load centre. NSPI believes that if natural gas can be made available at Tufts Cove at a competitive price, it will contribute to a reduction in the dependency of Nova Scotia on foreign oil. NSPI's potential gas requirements at Tufts Cove are approximately 60,000 MM Btu/d firm service.

14. NSPI's Tufts Cove plant could be an anchor load for any pipeline lateral bringing gas to metropolitan Halifax, thereby facilitating gas distribution in that part of Nova Scotia.

15. NSPI has a 350 MW generating station at Trenton, Nova Scotia, currently fuelled by coal, which can be converted to burn gas. NSPI believes that if natural gas can be made available at Trenton at a competitive price, it could be effectively consumed at this plant. NSPI could convert one 150 MW unit to burn gas. The converted unit will require approximately 30,000 MM Btu/d firm service.

16. NSPI's Trenton plant could be an anchor load for any pipeline lateral bringing gas to the communities of Trenton, Stellarton and New Glasgow, thereby facilitating gas distribution in that part of Nova Scotia.

17. NSPI will require new generation capacity early in the next century to satisfy load growth. A gas-fired combined cycle plant is one possibility. Combined cycle units combine high efficiency, reliable operations, low capital costs per megawatt, flexible sizing, short construction lead times and environmental benefits. In recent years there has been substantial development in combustion turbine (jet engine) based technology. In the context of electrical power generation, a conventional combined cycle is understood generally to mean the joint operation of a gas turbine and a steam turbine cycle, in which exhaust heat from the gas turbine is used in a heat recovery steam generator to generate steam which is then fed into a steam turbine. Electricity is produced from generators connected directly to both the combustion turbine and the steam turbine.

18. NSPI requires that laterals be built to serve its load and is uncertain of the intent of M&NE to construct any laterals in Nova Scotia. NSPI recently retained Barry Bauhuis of Sunstone Projects Limited ("Sunstone") of Calgary, Alberta, to conduct a pipeline study to assess the technical and economic feasibility of constructing pipeline laterals to the Tuft's Cove and Trenton generating stations. Sunstone's report, filed herewith, provides design, construction and cost advice with respect to pipeline lateral and bypass options. NSPI intends to conduct a further more detailed study of constructing such laterals.

19. NSPI has a genuine interest in the purchase of gas for use in Nova Scotia. NSPI can create a significant gas market in the province and facilitate the distribution of gas to communities that might not otherwise get it.

The Canada-Nova Scotia Offshore Petroleum Resources Accord

20. Canada and Nova Scotia signed the Canada-Nova Scotia Offshore Petroleum Resources Accord ("the Accord") on August 26, 1986. Its purpose is to establish through mirror legislation and ongoing cooperation a unified administrative and fiscal regime for petroleum resources in the offshore. The Accord is the foundation agreement between Canada and Nova Scotia which led to the legislation giving the Joint Panel its jurisdiction.

21. The Accord has among its objects:

"To achieve the early development of petroleum resources in the offshore area for the benefit of Canada as a whole and Nova Scotia in particular;"

"To recognize the right of Nova Scotia to be the principal beneficiary of the petroleum resources in the offshore area, consistent with the requirements for a strong united Canada."²

Further, Article 34 of the Accord states:

"The parties recognize that it is in both the national and the provincial interest to reduce Nova Scotia's disproportionate dependence on oil, particularly foreign oil. To this end the parties agree to encourage the use within Nova Scotia of petroleum resources off the East coast of Canada."

22. Nova Scotians are quite familiar with the disadvantages imposed by geography. Transportation costs to distant market centres and relatively high energy costs are only two such disadvantages. To fulfil their economic development needs, they must be in a position to exploit those natural advantages that they have. Proximity to off-shore petroleum resources should be

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Article 1.01

one such advantage, and the Accord recognizes Nova Scotia's right to the primary benefit of these resources.

23. Approval of the M&NE and SOEP Project, as filed, could have the result that no gas would be consumed in Nova Scotia while all offshore gas would flow to the United States and possibly to New Brunswick. If this happens, the policy objectives as stated in the Accord will not be achieved.

24. Nova Scotia will receive royalties, but these are largely offset by reductions in equalization payments. The Nova Scotia benefits during construction, though important, are transitory. The real benefit to Nova Scotians from offshore gas should be the reduction of the disproportionate dependence of the Province on foreign oil.

25. As a Nova Scotia company, NSPI has a strong interest in the economic development of the Province. We believe the people of Nova Scotia can further their economic development by the use of gas here, but this can only be done at a commodity price and toll structure that makes the purchase economic.

Development of the NSPI Position

26. NSPI retained expert assistance with respect to various issues that are raised by the M&NE and SOEP proposals. Gordon Engbloom of Confer Consulting Ltd. ("Confer") and Peter L. Miles of Peter L. Miles Consulting Inc. ("Miles"), both of Calgary, Alberta, were retained to provide advice on tolling and export issues. As noted, Barry Bauhuis of Sunstone, also of Calgary, was retained to provide design and cost advice in respect of lateral and bypass pipeline options. The positions of NSPI on tolling, export procedures, laterals and bypass were developed with the assistance of the three consultants and we rely on their advice.

27. Confer, Miles and Sunstone have provided written evidence which is being filed as part of the NSPI submission in this proceeding. NSPI endorses the conclusions of each of the consultants.

28. M&NE proposes a Canadian postage stamp toll of approximately Cdn.\$0.59/MMBtu for firm service deliveries from any point on the pipeline between Country Harbour, Nova Scotia and St. Stephen, New Brunswick, a distance of approximately 558 km, and states that the economic and financial success of the project is dependent on that toll not being exceeded.³ Similarly, M&NE and SOEP take the position that project viability depends on the delivery of substantial volumes to United States markets.⁴ NSPI asked Confer and Miles to examine the validity of the positions of M&NE and SOEP in the context of, first, tolling concepts and principles and, second, the NEB export approval procedures.

29. The conclusions of Confer/Miles can be summarized as follows:

(i) M&NE's proposed toll design is economically inefficient and should not be approved by the Board. The postage stamp toll design violates the conditions required to achieve economic efficiency. In particular, with a postage stamp toll such as proposed by M&NE, the price for transportation services paid by shippers is not closely related to the costs incurred in providing such services. The resulting inefficient price signal results in the misallocation both of resources necessary for the pipeline and of natural gas to the potential markets for Sable Island production.

(ii) The Board should also reject the proposed M&NE lateral policy because it also provides economically inefficient cost and tolling treatments which result in misallocation of pipeline resources and natural gas.

³ IR Response 110.8

⁴ IR Response 110.3

- (iii) The Board should approve a "point-to-point" toll design for the M&NE pipeline. A point-to-point toll design is one which incorporates both contracted capacity and distance-of-haul as cost allocation elements upon which to establish tolls. Contract capacity affects the diameter of the pipeline and the diameter affects the cost of the pipeline. Distance-of-haul affects the length of the pipeline and the length affects the cost of the pipeline. Since the cost of a linear pipeline system such as that proposed by M&NE is a function both of the contract capacity to transport gas and of the distance over which gas is transported, using the combination of contract capacity and distance to allocate costs is consistent with cost causation.
- (iv) The Board should approve a lateral policy which provides the users of that lateral with a clear price signal related to the resources associated with the construction and operation of the lateral. Specifically, lateral costs should be recovered through a toll which is incremental to the toll for mainline service.
- (v) A competitive natural gas market does not exist for Sable Island gas and key related markets, in particular the gas market in the Maritime provinces, which Mobil/Shell and M&NE are seeking approval to develop. Production is highly concentrated in a small number of sellers and, since there is presently no gas market, there is no basis for transparency of natural gas prices to exist. Hence there is no market basis for assessing whether the Canadian gas markets are being offered gas on similar terms and conditions, including price, as export customers.
- (vi) To the extent that exports are long-term in nature and an application is made for Licences, the Board's Market-Based Procedure is adequate to

test that the marketing of SOEP gas occurs in a manner consistent with that which would occur in a competitive market.

- (vii) However, the Board's procedures as presently constituted, do not provide for a similar test for short-term exports authorized by Order. In particular, the Board's Market-Based Procedures, including the Complaints Procedure, do not apply to such exports.. These circumstances, in combination with the fact that there is no competitive gas commodity market in Atlantic Canada, imply that there is no mechanism whereby Canadian markets can be reasonably assured of having competitive access to Sable Island gas.
- (viii) As a result, the Board's present authorization procedures should be amended for the circumstances of the SOEP and M&NE applications so that the Board requires that, whether authorized by Order or by Licence, all exports of gas be subject to the disclosure requirements and Complaints Procedure of the Market-Based Procedure for Licences.

Proposed Postage Stamp Rate

30. Under the proposed postage stamp toll of M&NE, the same toll applies to each unit shipped, regardless of the distance of transportation. The toll therefore makes no distinction between gas delivered in Nova Scotia (e.g. to a Halifax lateral exit point 100 km from the origin at Country Harbour) and gas delivered in New Brunswick (e.g. at a hypothetical Saint John lateral exit point 480 km from Country Harbour). The toll also fails to distinguish between gas that is exported and gas that is not. Thus, gas transported 558 km to the U.S. border for export bears the same toll as gas transported 100 km in Nova Scotia. This is made clear from M&NE's cost of service evidence⁵, which considers all shippers to be in a single class. Aggregate costs

⁵ M&NE application, Volume 2, Tab L, *Tolls, Tariffs & Financial Information*, Table L.2

are recovered from aggregate demand, based on the total amount of 530,000 MMBtu/d to be produced by the SOEP.

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31. The proposed toll discriminates against potential users of gas in Nova Scotia and discourages development of the Nova Scotia gas market. The result is contrary to the policy of the Governments of Canada and Nova Scotia as set out in the Accord. Even if the economics of Nova Scotia market development could absorb the discriminatory toll, the consequence would still be a significant subsidy from Nova Scotia customers to customers in New Brunswick and to export customers in the United States.

32. In order to justify the purchase of gas and the construction of facilities to receive and utilize gas, the total cost, commodity plus tolls, must be at a price that would permit the displacement by NSPI of a combination of existing fuel sources. The postage stamp toll as proposed by M&NE makes the economics of purchasing gas much less attractive to NSPI and, indeed, to all Nova Scotians than a toll based on actual cost.

33. The transportation toll which most fairly reflects underlying costs is a point-to-point toll under which the toll per unit shipped is related directly to the distance which the commodity is transported. NSPI urges the Board to order the proponents to design their tolls on a point-to-point basis.

34. The Accord recognizes the right of Nova Scotia to be the principal beneficiary of offshore petroleum resources.⁶ The Governments of Canada and Nova Scotia agree to encourage the use within Nova Scotia of the offshore petroleum resources, including Sable gas.⁷ The toll structure proposed by the applicants is directly contrary to the objectives of the Accord. By requiring Nova Scotia customers to pay a toll greater than the costs attributable to them (and thus

⁶ Accord, Section 1.02(c)

⁷ Accord, Section 34.01


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permitting downstream customers to pay a toll less than the costs attributable to them), the proposed tariff denies Nova Scotia's right to be the principal beneficiary of the resources and, in fact, discourages use of gas within the province. The primary benefit is to export customers, whose transportation costs are subsidized by the toll structure, and it is export use of gas that is encouraged.

35. In fact, the perverse effect of the proposed tolls is twofold. First, Nova Scotia customers would be required to pay a transportation toll higher than would otherwise be necessary. Second, because downstream customers pay a toll lower than would otherwise be necessary, the netback to the gas producers from those customers is artificially increased. To the extent that the price of gas to Nova Scotia could be based on the netback available from export customers, Nova Scotia consumers could be forced to pay a higher price for the commodity than they would if point-to-point tolls were used.

Laterals

36. NSPI believes that laterals off the main inter-provincial pipeline, to supply gas markets within Nova Scotia and New Brunswick, should be tolled on an incremental basis. Laterals to NSPI plants at Tuft's Cove and Trenton, if tolled on an incremental point-to-point basis, would be more economical if the mainline is also tolled on a point-to-point basis. NSPI submits that the \$94MM allowed by M&NE for the construction of laterals on a mainline roll-in toll basis, should be eliminated from the mainline rate base and costs, and that the mainline tolls be adjusted accordingly.

37. NSPI believes that the regulation of laterals off the main inter-provincial pipeline is within provincial jurisdiction. The combination of point-to-point mainline tolls, incremental tolling of laterals and the regulation of laterals by each province, would ensure that Nova Scotia consumers are not subsidizing the construction of laterals beyond its borders.

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38. NSPI is interested to see that laterals are constructed in Nova Scotia, either solely to serve its own requirements or to enable the distribution of gas to residential, commercial and industrial consumers.

Bypass

39. The discriminatory postage stamp toll proposed by M&NE caused NSPI to consider and investigate the cost of constructing its own natural gas pipeline to deliver Sable offshore natural gas to facilities at Trenton and Tuft's Cove. NSPI asked Sunstone to analyze the costs of bypass. A summary report provided by Sunstone is included as part of this NSPI submission. The report describes the pipeline systems and costs required to deliver gas to such facilities. The pipelines have been sized not only to deliver the required gas to NSPI facilities, but also to supply other projected market loads in the Halifax/Dartmouth and Trenton areas. The conclusion is that the M&NE postage stamp toll if approved, would make bypass an economic alternative.

Export Procedures

40. As noted in the NSPI Notice of Intervention, the timing and manner of approval of gas exports is relevant to this proceeding because, to the extent that the projects are dependent on export sales and shipments, it is necessary for the National Energy Board, in fulfilling its economic feasibility and public interest mandates under the *National Energy Board Act*, to determine that these exports would be authorized under Part VI of the *Act*. This raises the question of the applicability of the existing export approval procedures to this project. These procedures, developed in the competitive context of the Western Canada Sedimentary Basin and the markets it serves, may not be applicable to these projects.

41. It is the position of NSPI that the overall public interest of achieving efficient and effective development and use of Sable Island gas requires that all regulatory elements be examined together and cannot be viewed in isolation one from the other. This means that the export authorization process must, at the very least, be addressed in this proceeding.

42. Currently, the NEB discharges its mandate under Section 118 of the *National Energy Board Act* through application of the Market Based Procedure. The Complaints Procedure component of the Market Based Procedure allows the Board to test whether Canadians can obtain gas under similar terms and conditions, including price, to the export customers. The Market-Based Procedure does not, however, apply to short term exports which can be authorized by order without the provision of contractual information. Further, the Market Based Procedure also requires consideration of national public interest factors.
43. The SOEP proponents recognize the responsibility of regulators for "representing the interests of the people of Nova Scotia and Canada in the management of natural resources. These interests include the equitable access to natural gas and other resources..."⁸
44. The SOEP proponents also note that "communities in Nova Scotia and New Brunswick are expected to generate additional market demand as gas supplies become available through new pipeline service to these areas" and that "...many factors influence market demand and actual markets may differ from current forecast, resulting in the need for flexibility in the SOEP Development Plan".⁹
45. As of the writing of this evidence, NSPI has not been able to conclude negotiations for a contract for the purchase of gas from any of the offshore producers. NSPI believes that the Market Based Procedure must be applied to all exports of Sable Island gas in order for the Board to satisfy its obligations under the Act. This is necessary because, in contrast to the situation in Western Canada, there is no competitive market for gas in Nova Scotia. We believe that application of the disclosure requirements and Market-Based Procedure will have the dual goal

⁸ Vol. 1, p.5

⁹ Vol. 1, p.7

of satisfying the requirements of Section 118 of the *National Energy Board Act* and helping to fulfill the objectives of the Accord.

Conclusions

46. NSPI respectfully requests that the Board and the Joint Panel only approve the SOEP and M&NE projects if:

- (a) tolls on the M&NE pipeline are determined using point-to-point toll methodology;
- (b) lateral costs are to be recovered through a toll that it is incremental to the toll for mainline service;
- (c) the NEB disclosure requirements and Market-Based Procedure are applied in a manner to ensure that Nova Scotia customers are able to obtain gas on similar terms and conditions, including price, to the export customers that SOEP and M&NE seek to serve.