

Before the

Nova Scotia Utilities and Review Board

In the Matter of an Application by Efficiency Nova Scotia Corporation
for Approval of its Electricity Demand Side Management Plan for 2012

**EVIDENCE OF
GEORGE FOOTE**

**ON BEHALF OF THE
CONSUMER ADVOCATE**

APRIL 8, 2011

1 **Q. Please state your name, professional affiliation, and address.**

2 A. My name is George Foote, I am a private consultant advising government, non-profit
3 corporations, companies and others with a focus on matters concerning energy and the
4 environment.

5 **Q. On whose behalf are you testifying in this proceeding?**

6 A. My testimony is filed on behalf of the Nova Scotia Consumer Advocate.

7 **Q. Please provide a brief summary of your experience.**

8 A. I have more than 30 years' experience with the Province of Nova Scotia in the areas of
9 energy and environment. Most recently, I have served as Executive Director, Climate Change
10 Directorate, Nova Scotia Environment, a position from which I retired on April 30, 2010. As
11 executive director, I was responsible for developing the government's response to climate
12 change. Under my direction, the Climate Change Directorate developed the province's first
13 Climate Change Action Plan and greenhouse gas regulations for Nova Scotia's electricity sector.
14 In developing this plan and regulations, we co-ordinated our efforts with Nova Scotia
15 Environment staff responsible for other air issues and representatives from about a dozen other
16 government departments concerned with energy and environment issues. We also worked closely
17 with the private sector, including Nova Scotia Power Inc., and non-profit and private sector
18 organizations and associations. My resume is attached as Exhibit A.

19 Prior to joining Nova Scotia Environment, I served as Director of Energy Markets and Climate
20 Change at the Nova Scotia Department of Energy where I was responsible for renewable and
21 alternative energy policy as well as electricity regulation.

22 I have extensive experience with developing and delivering energy efficiency programs on
23 behalf of the Province of Nova Scotia dating to the 1980s and was involved with the
24 development of the 2007 Integrated Resource Plan on behalf of the Nova Scotia Department of
25 Energy.

1 **Q. Have you testified before this Board?**

2 A. No. I have not.

3 **Q. Have you testified before other utility regulatory Boards?**

4 A. Yes. I testified on behalf of the Nova Scotia Department of Energy at the joint National
5 Energy Board/Canada-Nova Scotia Offshore Petroleum Board hearing of the EnCana request for
6 approval to develop the Deep Panuke Natural Gas Project, including its offshore pipeline.

7 **Q. What is the subject of your testimony?**

8 A. My testimony covers the following topics:

9 (a) the proposed budget, energy savings targets and programs for DSM for the year 2012,

10 (b) the proposed budget for multi-sector Enabling Strategies and preliminary cost
11 allocation for Enabling Strategies,

12 c) the manner in which Efficiency Nova Scotia proposes to address participation by low
13 income households,

14 (d) the proposed treatment of free ridership and spill over,

15 (e) the proposed use of Total Resource Test on a program basis and

16 (f) the need to improve data quality and evaluation of forecast energy savings.

17 **Q. Have you reviewed the Company's evidence in this docket?**

18 A. Yes. I have read the evidence filed by the Corporation, including the proposed 2012 DSM
19 plan, and attached reports. I have also reviewed numerous information requests and the
20 responses provided by ENSC.

1 **2012 DSM PLAN TARGETS AND SPENDING**

2 **Q. Please summarize your conclusions and recommendations with regard to the proposed**
3 **budget, energy savings targets and programs for DSM for the year 2012.**

4 A. While somewhat ambitious, the proposed budget of \$43.7 million is in line with the two to
5 five per cent of revenues identified as beneficial to ratepayers, beginning with the 2006 Summit
6 Blue Report.

7 While substantial rate-payer funded DSM spending is still relatively young in Nova Scotia, the
8 proposed budget is significant on a North American scale and the administrator is relatively new
9 and untested as are some of the programs. I would note that the cost per MW of the projected
10 savings in the 2012 plan has risen substantially from that of the 2011 plan, rising to \$352 MWh
11 from \$264 MWh. This would appear to argue for a cautious approach to raising energy savings
12 targets above those proposed by ENSC.

13 The environment with respect to electricity supply and demand is a dynamic one that is affected
14 by energy pricing, government policy, technology development, the availability and cost of
15 energy savings, and project economics.

16 **Q. Do you think the target for program energy savings should be increased beyond that**
17 **proposed in the 2012 DSM Plan.**

18 A. The Integrated Resource Plans provides strategic direction and affirmed the need for
19 significant investment in DSM to meet future energy and demand requirements consistent with
20 environmental legislation and regulation.

21 I believe a more aggressive target for program energy savings would require ENSC to
22 demonstrate that capacity constraints or emission regulations in the short to medium term would
23 require more aggressive action on DSM at this time.

24 Actual net system requirements in 2009 and 2010 came in below IRP forecasts for those years.
25 More aggressive targets for renewable energy have also been put in place by government
26 subsequent to the completion of the 2009 IRP.

1 I would suggest that the targets for DSM in the 2009 Integrated Resource Plan are indicative of
2 the level of savings that are required to address future capacity and regulatory emissions
3 constraints and should be used as a guide in the development of annual or multi-year DSM
4 targets and plans.

5 Based on conversations with Nova Scotia Energy and officials of ENSC, it appears likely that
6 ENSC will be asked to deliver non-electricity DSM programs on behalf of the Province of Nova
7 Scotia, beginning sometime in 2011. The integration of multi-fuel DSM programs will, no
8 doubt, pose a challenge for any organization. An increase in budget above that proposed by
9 ENSC would increase the challenge of absorbing new programs that ENSC already faces as it
10 moves forward as the relatively new administrator of electricity DSM.

11 **Q. Does the reporting of savings from outside 2012 DSM Programs raise any concerns?**

12 Previous DSM plans relied exclusively on customer-funded, incentive-based DSM programs to
13 meet IRP targets. In 2012, ENSC is recording incremental energy and demand from two sources
14 outside of customer-funded DSM programs and crediting them against the IRP targets.

15 This appears to be consistent with The 2009 IRP Update Report, Appendix D, Attachment 1,
16 page 50, states that:

17 “All DSM is assumed to be included in the projection used in the 2009
18 IRP. This encompasses conservation efforts and investments occurring
19 both inside and outside of customer funded DSM programs, including
20 consumer behaviour and investments and energy efficiency codes and
21 standards, other agencies, NSPI, and DSM Administrator.”

22 The 2009 Update appears clear that savings outside administrator run programs are to be
23 included in the two per cent annual DSM target but does not provide guidance or criteria for
24 assessing the inclusion of such savings. The UARB’s *NSPI 2009 Integrated Resource Plan*
25 *Update Report* provides only one non-generic example of potential outside projects that may be
26 included: in the case a specific program, NSPI’s proposed Automated Metering Infrastructure
27 (AMI) project.

28 Aside from questions about verification of the ELI savings, which at this point are preliminary,
29 energy saving projects at large industrials are often completed as part of a plan to make

1 production processes more efficient and reduce all costs. This can lead to increased production
2 and resulting electricity consumption that would erode some of the energy savings.

3 Any discussion of whether to include non-program standards and at what level should not
4 distract the UARB and stakeholders from the main purpose of this process which is to ensure
5 spending proposed by ENSC is rationalized and justified and is at a level appropriate to meet
6 future energy demand while complying with environmental regulation.

7 Savings from non-program sources are relevant to the discussion to the extent that they can be
8 shown to reduce the need for new or replacement generation capacity and can assist in meeting
9 environmental targets.

10 **BUDGET FOR ENABLING STRATEGIES AND COST ALLOCATION**

11 **Q. Please summarize your conclusions and recommendations concerning the Enabling**
12 **Strategies and the proposed cost allocation for multi-sector programs.**

13 A. A budget of \$5.0 million is proposed for eight enabling strategies with \$2.0 million dedicated
14 to education and outreach, \$1.5 million to Development and Research and the remaining \$1.5
15 million to six other identified strategies.

16 Enabling Strategies are expected to support the effective delivery of DSM programs and to drive
17 market transformation by promoting energy efficiency. ENSC states in response to Consumer
18 Advocate IR-18 that it "subscribes to the view that it is generally reasonable for an organization
19 with a long-term perspective to allocate approximately 5-15% of its budgetary effort to
20 dedicated activities that may not produce cost-effective benefits in the short-term, but that are
21 geared toward generating longer-term value." It does not, however, indicate how it determined
22 this range of funding effort to be appropriate other than to indicate that once a decision to
23 proceed with the eight Enabling Strategies was made, their consultants determined the
24 minimum level of effort required for effectiveness.

25 **Q. At which sectors will activities under Enabling Strategies be targeted?**

26 A. As described in ENSC evidence and ENSC's responses to Information requests, it is apparent
27 the Enabling Strategies are really multi- sector strategies. For example, the Education and

1 Outreach component has two purposes: 1) to build support for DSM by informing all customers
2 of its value and 2) to distribute information to customers on ways to conserve energy and
3 encourage participation in DSM programs. It is apparent that these efforts will be directed at all
4 customers and all programs.

5 **Q. Where will the effort and energy savings occur with respect to Codes and Standards?**

6 ENSC has outlined in response to IR-4 from the Consumer Advocate that it proposes to work on
7 codes and standards that could affect products sold and new construction across all sectors. As
8 part of its response to MULTEESE IR-6, ENSC provided a copy of a memo from Dunskey
9 Energy Consulting to Chuck Faulkner of ENSC. The memo includes a table on Page 2 entitled
10 *INCREMENTAL NET standards energy savings (GWh)* which showed that the savings from yet
11 to be implemented codes and standards are expected to come increasingly from the commercial
12 and industrial sectors going forward. One can infer from this table, that much of the work and
13 expenditure on Codes and Standards under Enabling Strategies will be undertaken in the
14 commercial and industrial sectors.

15 **Q. What about spending on development and research, fuel substitution, and renewable**
16 **heating?**

17 In response to IR-6 from the Consumer Advocate, ENSC indicated that opportunities exist in
18 both the residential and non-residential sectors with respect to development and research, fuel
19 substitution, and renewable heating.

20 There is, however, no attempt to quantify the potential future savings from Enabling Strategies
21 nor any estimate provided of how much of expenditure is directed at obtaining future savings
22 from specific rate classes.

23 **Q. Do you think the preliminary cost allocation for Enabling Strategies should be re-**
24 **examined?**

25 A, The preliminary cost allocation assigns 95 per cent of the cost of Enabling Strategies to
26 residential ratepayers. This does not reflect the effort with respect to Enabling Strategies as
27 described by ENSC.

1 **Q. What is the basis for the preliminary allocation?**

2 A. In the 2012 Plan, Appendix B, the Corporation set forth a preliminary cost allocation. *TABLE*
3 *2: Preliminary Allocation of 75% of DSM Program Costs associated with benefits realized by*
4 *participating classes* shows that \$4.512 of the \$5.004 million budget will be ascribed to
5 residential ratepayers.

6 **Q. Is the Company's allocation of the remaining multi-sector costs consistent with the**
7 **allocation of the other remaining program costs?**

8 A. No. The remaining other program costs are allocated by the relative expenditures on programs
9 per class. It is recommended that the preliminary cost allocation for expenditures under the
10 category of Enabling Strategies be revised to better reflect the level of effort proposed by ENSC
11 for specific rate classes and that spending on Enabling Strategies should be tracked by rate class
12 and the final cost allocation be calculated after DSM spending is known.

13 Alternatively the percentage of energy savings by rate class expected from implementation of the
14 2012 DSM plan programs could be used as a surrogate for the distribution of energy savings that
15 may be anticipated from the expenditure on Enabling Strategies and applied to apportion costs of
16 Enabling Strategies across rate classes. For example, the 2012 DSM Plan assumes that programs
17 will deliver 124.1 GWh of energy savings of which about 60 per cent will come from the
18 commercial and industrial sector.

19 The cost of Enabling Strategies allocated on the basis of electricity consumption by rate class,
20 spending by rate class or forecast energy savings by rate class would appear to be prospective
21 options for a fairer cost allocation.

22 **Q. Do you have any other comments on Enabling Strategies?**

23 A. There would appear to be significant opportunities for leverage and partnerships with respect
24 to almost all of the Enabling Strategies. While a few examples of potential partnerships are cited
25 by ENSC in its evidence, there are a potentially large number of public and private sector
26 agencies involved in many of the activities listed under Enabling Strategies. A core principle of

1 Enabling Strategies should be maximizing co-operation and co-ordination with potential
2 partners in order to increase leverage and reduce costs.

3 **PARTICIPATION BY LOW INCOME HOUSEHOLDS**

4 **Q. Please summarize your conclusions and recommendations with regard to the manner in**
5 **which Efficiency Nova Scotia proposes to address participation by low income households.**

6 A. During review of the 2011 plan, the Consumer Advocate, among others, raised concerns
7 about DSM programs for low-income households as follows:

- 8 • performance of the 2008-2009 Low-Income Households program
- 9 • the need for programs designed for low-income renters and renters in general
- 10 • the financial ability of households with incomes just above the Low- Income Cut- Off
11 (LICO) eligibility criteria to participate in DSM programs

12 ENSC's response can be found in Appendix A starting on Page 8 under the description of the
13 Existing Houses Program. In 2012, ENSC proposes to integrate the low income households
14 programs with other programs and add several enhancements.

15 For example, in 2012, eligible measures will be expanded to include advanced drain water heat
16 recovery and fuel substitution, which will provide low income households with higher levels of
17 energy and cost savings.

18 Low-income renters in single-family and multi-family dwellings, who pay their own electricity
19 bill or are charged for their electricity usage through a housing authority will be eligible for
20 direct install of products such as CFLs, power bars with timers and hot water tank and pipe
21 insulation. Incandescent holiday lighting will be exchanged for Light Emitting Diode (LED)
22 holiday lights.

23 The 2012 program should appeal to more LIH and provides eligibility for LI renters. The
24 integration of the LIH Program into the Existing Houses Program may result in some program
25 efficiencies and synergies but at a loss of transparency.

Q. Do you have any concerns about the integration of programs for low income households being integrated with other residential programs?

A. The integration of the LIH Program into the Existing Houses Program may result in some program efficiencies and synergies. The cost of integration, however, appears to be a loss of transparency. Past plans had separate targets and budgets for LIH Programs.

In its response to IR-8 from the Consumer Advocate, ENSC indicated that it expects 40 per cent of expenditures under the 2012 Existing Houses Program to be made on low income households. ENSC further estimated that approximately 1,000 low-income houses are anticipated to participate in the 2012 DSM Plan.

In response to Consumer Advocate IR-40, ENSC stated that “the Efficient Products and Home Energy Report programs may include participation by low-income customers; however, no specific projection of participation by low-income customers is provided since that estimate was not made.”

It is my recommendation that the energy savings achieved by low income households and program expenditures on delivering DSM to low income households be tracked and measured against the benchmarks provided by ENSC as part of the evaluation of the 2012 DSM plan.

Where no benchmarks have been provided, as is the case with the Efficient Products and Home Energy Reports Programs, targets for energy savings and expenditures should be developed. These targets would provide a method with which to evaluate the success of the 2012 DSM Program with respect to encouraging greater participation by low income households and should be incorporated into the formal evaluation of the 2012 DSM plan.

FREE RIDERSHIP AND SPILL OVER

Q. Please summarize your conclusions and recommendations with regard to the proposed treatment of free ridership and spill over.

A. ENSC has not proposed an amendment to free ridership and spill over evaluation methodology for 2012 as it recently completed a collaborative process to consider and develop a

1 new approach to these issues. ENSC plans to revisit free ridership and spill over methodologies
2 in 2011.

3 ENSC's approach as described in its response to Consumer Advocate IR-24 is to assess free
4 ridership on a "case by case basis through direct customer interaction." ENSC further states that
5 "For programs with higher transaction volumes, free ridership is addressed through program 21
6 design, eligibility requirements and incentive levels. "

7 ENSC should be required to provide estimates of free rider and spill over for each of its 2012
8 programs. This would provide a benchmark as to the accuracy of their estimates of potential free
9 ridership and spill over when compared to results of the future 2012 DSM Plan evaluation. The
10 2012 Plan evaluation should assess ENSC's ability to predict free ridership and spill over
11 against these estimates and make recommendations for improvement. This information would be
12 useful to ENSC in refining its methodology for estimating levels of free ridership and spill over
13 with respect to design of future programs.

14 **USE OF TOTAL RESOURCE COST TEST BY PROGRAM**

15 **Q. Please summarize your conclusions and recommendations with regard to the manner in**
16 **which Efficiency Nova Scotia proposes to use the Total Resource Test on a program basis.**

17 A. ENSC has proposed a significant change to the use of the Total Resource Cost test. It
18 proposes that the TRC be used on a program rather than on a measure basis. It has provided
19 TRCs for each program as part of its Evidence in Table 5.1 *2012 DSM Plan Savings and*
20 *Investment*.

21 ENSC contends in its response to Consumer Advocate IR-14 that "The TRC test does not
22 capture all sources of value that participants realize from a given measure. These sources of
23 value could include improved reliability or comfort." It goes on to state that "in certain instances,
24 (ENSC) may include a measure with a TRC less than 1.0 within a bundle of measures, when it is
25 appropriate to do so, such as when the added administrative cost for a measure is low, compared
26 to the other measure(s) in the bundle."

1 ENSC makes a reasonable case for using the TRC on a program basis and has provided
2 precedents from other jurisdictions. The upcoming process on performance approaches to DSM
3 may further investigate this and other metrics for measuring DSM.

4 The program TRCs provided by ENSC appear reasonable and justifiable.

5 **Q. Do the TRCs for measures appear to justifiable within the context of program TRCs.**

6 A. TRCs for individual measures have been provided by ENSC in a series of tables that form
7 part of its response to NewPage/Bowater IR-3. We should remember that the UARB stated in its
8 2011 decision that DSM measures which have TRC ratios near 1.0 are marginal in effectiveness.

9 There appear to be a number of measures, and especially those associated with the addition or
10 replacement of auxiliary or primary space or water heating systems, that have TRCs near or
11 below 1.0. The space and water heating alternatives would appear to be large capital items. It is
12 difficult to determine how they meet the criteria outlined by ENSC with respect to adding value
13 such as improved comfort or reliability or are part of a bundle where their addition will not add
14 significantly to administrative costs.

15 While ENSC has made a legitimate case for using the TRC on a program rather than on a
16 measure basis; it is, however, informative for ENSC and stakeholders to have available the TRCs
17 of individual measures in current and future DSM plans.

18 In light of the low TRCs for some of the measures, especially those proposed for inclusion in the
19 renewable or alternate fuel pilots, it would be beneficial for ENSC to develop solid criteria for
20 including measures that have a TRC approaching or below 1.0 in a program and to rigorously
21 apply these criteria to all relevant measures that form part of a program. A separate set of
22 criteria for judging the TRCs of measures within a pilot program may be warranted. Both sets of
23 criteria should be explicit and available for review by stakeholders.

1 **DATA QUALITY AND EVALUATION**

2 **Q. Please summarize your conclusions and recommendations with regard to the manner in**
3 **which Efficiency Nova Scotia proposes to address the need to improve data quality and**
4 **evaluation of forecast energy savings.**

5 A. ENSC has demonstrated a commitment to continuous improvement in data quality and in
6 evaluation techniques. It is essential that each successive evaluation of programs include
7 recommendations for improvements in data quality and evaluation techniques. A requirement
8 for such recommendations should be included in any Terms of Reference for program
9 evaluation.

10 It is important to have benchmarks against which to judge success or failure. Energy savings and
11 demand reductions are critical but other types of benchmarks referred to in earlier sections of this
12 evidence are equally critical. These include energy savings from and expenditures on low
13 income households and the estimated extent of free ridership and spill over upon which future
14 program evaluations can be based.

15 **Q. Does this conclude your testimony?**

16 A. Yes.

EXHIBIT “A”

George R. Foote

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WORK EXPERIENCE

June 2010 – January 2011

Senior Advisor, Climate Change Directorate, Nova Scotia Environment, Halifax, NS

- Providing advice to Acting Executive Director on policy, regulatory, financial and administrative issues facing the Climate Change Directorate, including development of greenhouse management policy, climate change adaptation and implementation of Nova Scotia's Climate Change Action Plan.

April 2008 – May, 2010

Executive Director, Climate Change Directorate, Nova Scotia Environment, Halifax, NS

- Provides leadership for the implementation of Climate Change Action Plans for Nova Scotia, including oversight and direction of Directorate programs, activities, administration, financial, human resources, and budgetary matters to ensure clear prioritization and alignment with strategic goals and policy objectives.
- Leads the development and implementation of initiatives, strategies and approaches to ensure the Province has the capacity to reduce emissions by 10% below 1990 by 2020 and to enable the Directorate to consistently and effectively advise on future goals for greenhouse gas reductions in keeping with scientific and economic analysis.
- Works across government and with the MASH sector to integrate climate change risks into strategic thinking to ensure effective measures are being put in place to reduce GHG emissions and prepare the province for the effects of a changing climate are being implemented across provincial departments, municipalities, agencies, schools and hospitals.
- Provides expert advice to the Minister and to Government on Climate Change principles and practices, as well as legislative and regulatory trends in other jurisdictions, ensuring evidence-based information informs response to high level provincial issues, through the preparation of Memos to Cabinet, R&R's,

briefing notes and personal presentations to Cabinet and Legislative Council.

- Directs the development and implementation of GHG regulatory frameworks including on-going processes and funding approaches and incentives to ensure compliance (such as increasingly stringent absolute caps on GHG emissions) and to enable the shift to a low carbon economy. Policy development may span topics such as energy efficiency, renewable energy, fossil fuels, advanced clean coal, alternative fuels and vehicles, bio-resources, building codes, zoning, transportation planning, finance and infrastructure development; the work will encompass a wide range of policy, analytical and technical issues.
- Represents Nova Scotia's interests to maximize investment opportunities resulting from a low carbon economy and to ensure Nova Scotia's position is reflected in national and international planning and policy development on Climate Change. Through analysis and dialogue, articulates Nova Scotia's vision in working with governments and stakeholders to identify practical and effective options and opportunities, considering environmental, economic and political concerns that may impact Nova Scotia. Supports effective coordination of federal and provincial programs, participates in the development of multi-lateral strategies, negotiates inter-governmental, inter-agency and sectoral agreements, implements and/or enables partnering arrangements and collaborative frameworks that encourage corporate responsibility and that support absolute emission targets, policy-based commitments and sectoral agreements.

January 2007 - March 2008

Director, Energy Markets and Climate Change, Nova Scotia Department of Energy, Halifax, NS

- Leads the province's policy development and response to climate change. This issue has been steadily rising in importance and has become the leading environmental issue facing Nova Scotians, Canadians, and the globe.
- Ensures the timely and effective development of the province's renewable energy resources.
- Responsible for development of electricity policy, legislation and regulation.
- Responsible for development of natural gas distribution policy, legislation and regulation.
- Provincial representative on numerous federal/provincial/territorial committees, including those advising Canada on international climate change negotiations,

management of emission reductions for large industry, and climate change impacts and adaptation.

- Responsible for developing and delivering projects and programs that compete for Department of Energy's \$1.6 million annual budget for climate change and renewable energy.

June 2006 - December 2006

*Acting Director, Intergovernmental Affairs and, Climate Change, Nova Scotia
Department of Energy, Halifax, NS*

- Ensures the department's inter-governmental positions and negotiating strategies are consistent and effective in dealings with the federal governments and other jurisdictions by providing direct advice with respect to intra-departmental co-ordination on research, the department's negotiating strategy, and development of policy options and the negotiation of agreements with other governments and the private sector.
- Lead responsibility for working with the federal government and other jurisdictions, industry and key stakeholders to develop an efficient and effective regulatory regime for the offshore and the province's ocean energy resources.
- Works with other directors to develop an accurate assessment of the provincial impact of new energy initiatives put forward by the federal government, other jurisdictions and industry by conducting a high level assessment of their effect on Nova Scotia programs, policies and priorities.
- Leads the province's policy development and response to climate change. This issue has been steadily rising in importance and has become the leading environmental issue facing Nova Scotians, Canadians, and the globe.
- Provincial representative on numerous federal/provincial/territorial committees, including those advising Canada on international climate change negotiations, management of emission reductions for large industry, and climate change impacts and adaptation.
- Responsible for developing and delivering projects and programs that compete for Department of Energy's \$2.3 million annual budget for climate change, energy efficiency and renewable energy.

December 2004 – June 2006

Acting Manager, Climate Change, Nova Scotia Department of the Energy, Halifax, NS -

Energy Management, Markets and Climate Change Division

- Leads the province's policy development and response to climate change. This issue has been steadily rising in importance and has become the leading environmental issue facing Nova Scotians, Canadians, and the globe.
- Lead author of Nova Scotia Climate Change Plan, including presentation of plan to Executive Council and to federal officials. Part of negotiating team.
- Provincial representative on numerous federal/provincial/territorial committees, including those advising Canada on international climate change negotiations, management of emission reductions for large industry, and climate change impacts and adaptation.
- Responsible for developing and delivering projects and programs that compete for Department of Energy's \$2.3 million annual budget for climate change, energy efficiency and renewable energy.
- Requires considerable independent thought to develop policy in national and global context and position Nova Scotia to take advantage of opportunities and challenges.
- Extensive experience and knowledge of national and international policy and program issues as well as a working understanding of energy supply and demand options, including an appreciation of technical and cost issues associated with various technologies and mitigation strategies.

March 1995 - December 2004

Policy Advisor, Nova Scotia Department of Energy and Department of Natural Resources, Halifax, NS

- Provided policy analysis and recommendations to senior management on issues relating to climate change, renewable energy, and energy efficiency in Nova Scotia, with a focus on environmental implications for energy supply, demand and pricing.
- Prepared briefing material for ministerial use and develops recommendations on alternatives and options in areas of energy strategy, policies, and planning. The individual develops and advises on strategies, policies, and programs directed at the efficient and environmentally responsible use of energy by all economic sectors.
- Member of number of federal/provincial/territorial working groups on climate

change as part of national Climate Change Process (1998-2002), including Analysis and Modelling Group, Emissions Trading Working Group, Public Education and Outreach (provincial co-chair), and Electricity Working Group.

- Conducted strategic analyses and provides advice on the implications for provincial climate change policy in response to federal, provincial, and territorial proposals as well as those from industry and non-governmental organizations.
- Provided policy advice on the economic impacts of climate change policy options, especially proposals for constraints on emissions of large industrial emitters, including Nova Scotia Power Inc. and the major pulp and paper companies.
- Developed and maintained a strong network of contacts with key analysts, advisers and decision makers in the area of climate change within governments at all levels and with and the private sector.
- Represented the province on F/P/T and P/T policy and advisory committees.

November 1984 - March 1995

Supervisor, Residential Energy Programs, Energy Management Division, Department of Natural Resources, Halifax, NS,

- Managed staff of four engaged in delivery of residential energy programs.
- Developed residential energy program partnerships with private and public sector partners, including R-2000 Home Program, ENERhouse Housing and Energy Conference.
- Responsible for public education and outreach on residential energy efficiency and conservation as well as renewable energy, including concepts and content of printed and audio-visual material and media campaigns.
- Developed and delivered projects under the Canada-Nova Scotia Memorandum of Understanding on Energy Conservation, a multi-year, multi-million dollar agreement.

November 1980 - November 1984

Contract - Public Information Officer, Energy Management Division, Department of Mines and Energy, Halifax, NS.

- Provide public education and outreach services under Canada-Nova Scotia Memorandum of Understanding on Energy Conservation.
- Developed publications, printed materials and audio-visual material on projects

and programs.

- Organized media events and prepared speeches for senior management and minister.

June 1978 - November 1980

Writer and Editor, Herald Limited, Halifax, NS

- This position included diverse duties and required a versatile staff member with excellent writing skills.
- Journalist with special responsibility for municipal politics. Preparation of daily news stories and feature articles.
- Editor responsible for story selection, headline writing, story editing and page design.

November 1996 - June 1978

Charlottetown Guardian, Charlottetown, Prince Edward Island, Journalist

- This position included diverse duties and required a versatile staff member with excellent writing skills.
- Journalist with special responsibility for provincial and national politics. Responsible for coverage of provincial legislature and federal political issues affecting Prince Edward Island. Work included personal contact with senior political figures, including Premier of PEI, ministers and other government officials. Preparation of daily news stories and feature articles.
- Editor responsible for story selection, headline writing, story editing and page design.

OTHER RELATED EXPERIENCE

December 1998 to 2000

Canada Mortgage and Housing Corporation, Ottawa, ON

► Judge of CMHC's External Research Grant program with special responsibility for energy and environmental project proposals. Judges meet for three days each year to rank project proposals received by CMHC under its External Research Program.

June 1995 to May 1996

Sustainable Housing and Education Consultants, Wolfville, NS

- Developed project concepts, prepared written proposals, and completed final reports for research on energy and environmental issues related to housing
- Performed contract work for Natural Resources Canada., including computer-based analysis of energy performance of housing stock in New Brunswick., Nova Scotia, and Newfoundland.. Analysis included indoor air quality testing of air infiltration, ventilation rates, formaldehyde, radon, and volatile organic compounds.

INTERESTS Public policy, especially environment and energy issues. cycling, camping, natural history.

REFERENCES **Professional References and Character References available upon request**