

Matter No. M10176

**In the Matter of an Application by Nova Scotia Power Incorporated
for Smart Grid Nova Scotia Solar Garden Pilot Rate Rider**

REDACTED
EVIDENCE OF
JOHN D. WILSON
ON BEHALF OF
THE CONSUMER ADVOCATE

Resource Insight, Inc.

AUGUST 18, 2021

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1 **I. Identification & Qualifications**

2 **Q: Mr. Wilson, please state your name, occupation, and business address.**

3 A: I am John D. Wilson. I am the research director of Resource Insight, Inc., 5 Water St.,
4 Arlington, Massachusetts.

5 **Q: Summarize your professional education and experience.**

6 A: I received a BA degree from Rice University in 1990, with majors in physics and
7 history, and an MPP degree from the Harvard Kennedy School of Government with
8 an emphasis in energy and environmental policy, and economic and analytic methods.

9 I was deputy director of regulatory policy at the Southern Alliance for Clean
10 Energy for more than twelve years, where I was the senior staff member responsible
11 for SACE's utility regulatory research and advocacy, as well as energy resource
12 analysis. I engaged with southeastern utilities through regulatory proceedings, formal
13 workgroups, informal consultations, and research-driven advocacy.

14 My work has considered, among other things, the cost-effectiveness of pro-
15 spective new electric generation plants and transmission lines, retrospective review
16 of generation-planning decisions, conservation program design, ratemaking and cost
17 recovery for utility efficiency programs, allocation of costs of service between rate
18 classes and jurisdictions, design of retail rates, and performance-based ratemaking for
19 electric utilities.

20 My professional qualifications are further summarized in Attachment 1.

21 **Q: Have you testified previously in utility proceedings?**

22 A: Yes. I have testified more than two dozen times before utility regulators in California
23 and the Southeast U.S. and appeared numerous additional times before various
24 regulatory and legislative bodies.

1 **Q: Have you previously testified in other proceedings before this Board?**

2 A: Yes. I have filed testimony in eight matters. I have also assisted the Consumer
3 Advocate in preparing comments and developing positions in numerous proceedings
4 and stakeholder processes.

5 **Q: On whose behalf are you testifying?**

6 A: My testimony is sponsored by the Nova Scotia Consumer Advocate.

7 **II. Program Summary**

8 **Q: How did the Solar Garden Pilot Rate Rider originate?**

9 A: The Smart Grid Nova Scotia Project (SGNS project, M09519) was approved by the
10 Board on May 7, 2020. NS Power did not propose approval of rate designs as part of
11 the SGNS project application, but rather stated that rate structures would be developed
12 and “incorporated into the Project on a pilot basis so that they may be evaluated,
13 providing further data and learnings on their optimal design ... [and] will be provided
14 to the NSUARB for review and approval at a later date ...”¹

15 **Q: What costs is the rider intended to recover?**

16 A: The total cost of the Solar Garden is now estimated at \$6.9 million, as shown in Table
17 1. This is a substantial increase from the [REDACTED] budget, including contingency,
18 included in the SGNS project Application. The increase is particularly notable given
19 that a portion of the original budget was for land, which is being provided by the City
20 of Amherst at no charge.² The cost to build the Solar Garden is about [REDACTED]
21 higher than estimated in the budget, of which [REDACTED] is covered by the project
22 contingency. The rider is also intended to recover an additional [REDACTED] in

¹ Exhibit N-1, M09519, p. 26, lines 8-11.

² Exhibit N-12, M09519, p. 42, lines 19-22.

1 additional costs that were not included in the SGNS Program Application, resulting
 2 in total nominal costs that are [REDACTED] than included in the Application.

3 **Table 1: Total Costs of Solar Garden (Nominal)**

Cost Element	Cost (Rider Application)	Budget (SGNS Application)	Comparison
Construction Cost	5,200,000	[REDACTED]	[REDACTED]
Construction Contingency	0	[REDACTED]	[REDACTED]
Land (including contingency)	0	[REDACTED]	[REDACTED]
Solar Site O&M	811,362	[REDACTED]	[REDACTED]
Program O&M	505,681	[REDACTED]	[REDACTED]
Income Tax	342,100	[REDACTED]	[REDACTED]
Total	\$ 6,859,143	[REDACTED]	[REDACTED]

4 Source: Exhibit N-1, Figure 3, p. 8; Exhibit N-1, M09519, Attachment A, p. 5.

5 **Q: Has NS Power made a reasonable effort to minimize costs of the Solar Garden?**

6 A: With respect to construction costs, yes. NS Power’s Application describes a
 7 competitive RFP and one of the lowest cost bids was selected. The total SGNS project
 8 contingency is \$1.6 million, so it is possible that the overall project will remain within
 9 budget.

10 It is not clear whether the solar site and program O&M costs reflect cost
 11 minimization efforts. The basis for these cost estimates is not apparent from the
 12 Application.

13 **Q: Please summarize the rate structure proposed by NS Power.**

14 A: NS Power is proposing the SGNS Solar Garden Pilot Rate Rider to be in effect over
 15 the four-year term of the SGNS Project, which is a small part of the 30-year expected
 16 life of the solar facility. The rider includes a Solar Capacity Charge and a Credit.

1 The proposed Solar Capacity Charge of \$6.86/kW is intended to recover
2 \$5,207,131 over the life of the project, or \$2,172,604 in net present value (NPV)
3 terms.

4 The proposed Credit would begin at 5.493¢/kWh and increase at 2 percent per
5 year until the project ends in 2024, at which point the Credit could be changed.

6 Each subscribing customer will receive both a Credit and a Charge on their
7 power bill. The Credit will depend on the amount of energy generated from their
8 subscribed Solar Garden capacity, and the Charge will simply depend on the amount
9 of subscribed capacity.

10 **Q: Will the Solar Capacity Charge recover the cost of building and operating the**
11 **Solar Garden?**

12 A: No. NS Power is funding about 67% of the anticipated construction cost of the Solar
13 Garden with grants totaling \$3,484,000, the maximum amount that can be covered
14 under the terms of the awards from the Strategic Innovation Fund and the Natural
15 Resources Canada Smart Grid grants for the SGNS project.³ Without this subsidy, the
16 subscription rate would be \$17.02/kW, more than double the proposed amount.

17 **Q: Please summarize the eligibility rules and pilot rate duration proposed by NS**
18 **Power.**

19 A: Eligibility will be directed through a target of 60 percent for domestic rate class
20 customers and 40 percent for small general and general rate class customers, with
21 modifications to address undersubscription after 12 months.⁴ Subscribers are allowed
22 to cancel their subscription at any time.

³ Exhibit N-4, IR-26.

⁴ Exhibit N-4, IR-12.

1 Although the Application states that the Credit and Charge will remain in effect
2 through the end of the SGNS Pilot,⁵ NS Power clarified in an information request
3 response that it proposes that the rate should remain in effect until revised through a
4 subsequent application. Communication to customers will indicate the Company’s
5 intention to:

6 ... continue with the rate rider until 2051 ... along with the information that [the
7 rider] will be evaluated as part of a pilot and that customers will be given notice
8 of any change. If a modification to the rate rider results in a more favourable
9 outcome for customers, all participants will be notified and transitioned to the
10 modified rate. If a modification results in a less favourable outcome for
11 customers, those who are in the program before the modification will maintain
12 the original structure for as long as they maintain their current subscription, and
13 all new participants will be enrolled under the modified rate.⁶

14 **Q: How will project output deficits or surpluses be handled?**

15 A: If the Solar Garden underperforms, such as due to failure or poor maintenance,
16 customers will be notified if the outage lasts more than three days and affects more
17 than 25 percent of the output.⁷ For permanent deficits, NS Power will reduce the total
18 capacity available for subscription and, if necessary, the last-added customers
19 enrolled would be moved to a waitlist.⁸

20 NS Power states that, “Surplus generation that is not subscribed will be used as
21 part of NS Power’s generation for the benefit of all customers.”⁹

22 **Q: Will the Solar Garden be cost-neutral to the system?**

23 A: No. NS Power states,

⁵ Exhibit N-1, p. 4, lines 15-16.

⁶ Exhibit N-2, IR-3(e-f).

⁷ Exhibit N-4, IR-9(a).

⁸ Exhibit N-1, IR-1(b).

⁹ Synapse IR-8(a)

1 The investment for the solar garden was approved by the NSUARB as part of the
2 SGNS capital application. The assets will be included in NS Power’s regulated
3 rate base and the cost of the pilot will be recovered from customers through
4 depreciation and financing expense, and from the funding support provided by
5 the Government of Canada. The project was justified under the Innovation
6 justification criteria to provide data and learnings to inform future programs. The
7 pilot rate will help NS Power maximize its learnings for the development of future
8 rate offerings. The revenues related to the subscribed portion of the solar garden
9 were not included in the capital application and therefore will provide additional
10 benefit to all customers as the revenues related to subscriptions will lower the
11 overall revenue requirement for customers.¹⁰

12 Thus, the Solar Garden is not cost-neutral in two ways. First, the construction budget
13 summarized in Table 1 appears to use funds that could have been spent for other
14 portions of the SGNS project. If the costs for other portions of the SGNS project also
15 exceed the original budget, ratepayer costs will increase.

16 Second, the cost of the Solar Garden includes \$1.3 million in annual O&M and
17 \$0.3 million in income tax costs that were not included in the original SGNS proposal
18 budget. These costs are to be recovered through the Solar Capacity Charge. Because
19 subscribers are unlikely to pay a high Charge, this limits the capability of the Charge
20 to recover construction costs for the Solar Garden. If O&M costs turn out to be higher
21 than estimated in the rider application, then either ratepayers will effectively bear
22 those costs or the Charge will be increased, potentially causing participant attrition—
23 resulting in underrecovery of costs that are then shifted to ratepayers.

24 **III. Risks Associated with Future Cost Changes**

25 **Q: How will future cost changes affect participants and ratepayers?**

26 **A:** In general, any future cost changes will result in the pilot rider becoming more
27 favorable to participants and less favorable to ratepayers as a whole.

¹⁰ Exhibit N-4, IR-8(b).

1 There are several potential sources of future cost changes, as summarized in
2 Table 2. In every case, the impacts of cost or rate changes would be passed through
3 to all ratepayers. For example, if the Solar Garden avoided costs in 2024 are
4 5.0¢/kWh, they would be less than the Credit value of 5.829¢/kWh, so ratepayers
5 would pay 0.829¢/kWh more than they save in generation costs. Conversely, if
6 avoided costs increased to 6.5¢/kWh, then ratepayers would save 0.671¢/kWh
7 compared to generation costs. However, these changes in avoided costs would have
8 no impact on program participants’ bills, except to the extent that all customers’ bills
9 change through a GRA, FAM adjustment, or other mechanism.

10 **Table 2: Effects of Cost and Rate Changes on Ratepayers and Program Participants**

Cost or Rate Change	Ratepayers	Program Participants
Routine avoided cost update (e.g., fuel price changes)	Positive or negative effect —Costs are passed through in rates	No impact —No changes to program rates
Unusual avoided cost update (e.g., more stringent carbon regulations)	Positive or negative effect —Costs are passed through in rates	No impact —No changes to program rates
Fuel adjustment mechanism rate update	Fully affected	Fully affected
Base rate update	Fully affected	Fully affected
Change to solar garden or program O&M costs	Positive or negative effect —Costs are passed through in rates	Only beneficial effects —No increases to program rates
Insufficient revenue from subscription fee due to lack of participation or re-rating due to project equipment failure	Negative effect —Lack of revenue must be made up through rates	Only beneficial effects —No increases to program rates

11 If forecast avoided costs change, due to changes in fuel prices, cost of new plants
12 or contracts, or other factors, that will generally show up in the fuel adjustment
13 mechanism and/or NS Power’s financial statements, and eventually rates. All
14 customers, whether ratepayers or program participants, will be affected by those rate

1 changes. The Solar Garden price stability will tend to moderate rate changes for
2 program participants, who will see less volatility in their bills than other ratepayers.

3 Changes to program costs or revenues can only benefit participants. As
4 discussed above, NS Power proposes a one-way rate rider adjustment policy. For
5 modifications that are favourable for participants, all existing participants will be
6 transitioned to the modified rate. However, for unfavorable outcomes, existing
7 participants will be maintained on a legacy rate.

8 **Q: Is there any scenario in which ratepayers benefit from the program?**

9 A: Yes, if avoided costs are higher than the values projected in NSP's IRP over the thirty-
10 year lifetime of the Solar Garden, ratepayers end up having benefited by receiving the
11 Solar Garden energy at a cost below avoided costs. That will put downward pressure
12 on the fuel adjustment mechanism, resulting in benefits to all ratepayers.

13 **Q: Is there any scenario in which ratepayers could be harmed by the program?**

14 A: Yes, any increases in solar or program O&M costs, as well as any shortfalls in revenue
15 from subscription fees, will directly or indirectly put upward pressure on customer
16 rates. Those rate impacts could be mitigated by increasing the subscription fee for
17 new (but not legacy) subscribers.

18 **Q: Are there circumstances in which participants would benefit from the program,
19 while other ratepayers would be worse off than without the program?**

20 A: Yes, if avoided costs are less than NS Power projects, participants will benefit from
21 a Credit that is greater than the value provided by Solar Garden generation. This
22 would represent a ratepayer-funded subsidy to Solar Garden subscribers.

23 **Q: Do you support a one-way rider adjustment policy that could increase, but never
24 decrease, participant benefits?**

25 A: No. Guaranteeing existing subscribers that the subscription fee will never increase,
26 but may decrease, is inconsistent with how all other cost-based rates are handled.

1 Since the rider is designed to pilot a more general offering, and understand customer
2 reactions to the rate structure, it should not offer terms that are so dramatically
3 inconsistent with NS Power’s treatment of other cost-based rates.

4 This is particularly unreasonable since about two-thirds of the cost to build the
5 Solar Garden is being subsidized by SGNS funding. Participants will already be
6 benefitting from a subsidized program offering.

7 More generally, this unbalanced approach offers a poor model for future
8 program offers. NS Power states that, “the rider is designed to pilot a more general
9 offering.” Any such offering would be developed by NS Power, not third-party solar
10 developers, who are not legally permitted to develop solar gardens and sell to
11 customers.¹¹ Any expanded program should be consistent with standard ratemaking
12 principles; NS Power would learn little about participation in an expanded program
13 from a pilot operating under rules that so clearly favour participants.

14 **IV. Foreseeable Changes to Program Economics**

15 **Q: Please describe any foreseeable changes to the economics of the Solar Garden.**

16 A: The Credit value is based on NS Power’s avoided costs, as modeled by IRP Scenario
17 2.0C, which assume carbon legislation and regulations currently in place. It falls short
18 of the full value of GHG emission reductions in two respects, overcompliance value
19 and stricter regulations.

20 The modeling conducted by NS Power for its integrated resource plan (IRP)
21 utilized a hard cap for emissions. In general, the modeling resulted in emissions that

¹¹ Exhibit N-2, IR-5. NS Power does note that, “A third-party developer could consider offering service under the current Renewable to Retail market structure.” However, such a service would be significantly different and less advantageous than the offering proposed by NS Power. Any expansion of the Solar Garden program should allow for the possibility that third-party developers may be able to build, own or operate the equipment less expensively than NS Power can.

1 were below the hard cap in most years. Overcompliance provides NS Power with the
2 opportunity to sell GHG credits in the cap-and-trade market established by the
3 province, which currently covers only emitters in Nova Scotia but may expand to
4 allow sale of GHG credits beyond the province. Alternatively, if Nova Scotia shifts
5 to a carbon pricing regulation, overcompliance would directly avoid costs, resulting
6 in an increase in the Credit value.

7 The federal government is in the process of amending its GHG pollution pricing
8 regulations through 2030. In a communication to the Demand Side Management
9 (DSM) Advisory Group, the Executive Director for Climate Change of the Nova
10 Scotia Environment and Climate Change department stated,

11 On July 12th, 2021, the federal government confirmed that the minimum price on
12 carbon pollution will increase by \$15 per tonne each year starting in 2023 through
13 to 2030 (i.e. to \$170/tonne), and that the benchmark will be updated to ensure all
14 provincial and territorial pricing systems are comparable in terms of stringency.

15 ...While there is no confirmed provincial direction on which carbon pricing
16 system Nova Scotia will be implementing post-2022, it is clear that Nova Scotia
17 will need to put in place a carbon pricing system that meets the federal
18 benchmark, or the federal backstop will apply.

19 If an explicit price-based system is chosen, the carbon price will rise by \$15/tonne
20 starting in 2023. If a cap-and-trade program is chosen, the GHG emission
21 reductions (i.e., caps) will need to correspond to the emissions that would have
22 resulted in that jurisdiction from applying an explicit price-based system.
23 Regardless of whether Nova Scotia chooses cap-and-trade or an explicit price-
24 based system, the implicit or explicit price trajectory is intended to drive the same
25 level of GHG reductions.¹²

26 These stronger regulations mean that not only is the Credit value underestimated by
27 omitting the overcompliance value, but the stronger federal policy will require an
28 even more aggressive carbon reduction plan than described in IRP Scenario 2.0C.

¹² Attachment 2 (E-mail from Nancy Rondeaux to DSM AG dated July 21, 2021).

1 **Q: What is the potential impact of overcompliance value on avoided costs?**

2 A: While I do not have all the necessary data to produce a valid forecast, it is reasonable
3 to estimate that the Credit price might reasonably be increased by something on the
4 order of 1¢/kWh, based on the following evidence.

5 In its comments on NS Power’s draft IRP, Synapse estimated the value of GHG
6 emission reduction overcompliance. In one case, Synapse estimated the additional
7 carbon reduction value for the 5.5 million tons avoided by increasing DSM from the
8 base to the mid scenario. If carbon is valued at \$50/ton, Synapse estimates the carbon
9 reduction value as is \$171 million (NPVRR).

10 NS Power has not calculated the value of GHG emission reduction
11 overcompliance. It is currently maintaining this issue in a status of “ongoing
12 monitoring,” even as the price of GHG credits in the provincial auction has risen
13 significantly.¹³

14 I was unable to locate the forecast carbon reductions associated with the IRP’s
15 DSM base case, but the difference between the base case and the low case is roughly
16 7 million tons, so it is likely that the base case reduces carbon emissions by at least
17 10 million tons relative to a no-DSM case. The most recent settlement price for GHG
18 emission allowances was \$36.71 per ton.¹⁴ Using this value and extrapolating from
19 Synapse’s base-to-mid comparison estimate of \$171 million in value, it seems
20 reasonable to estimate that the carbon value associated with the base-to-no-DSM
21 comparison is on the order of \$225 million (NPVRR).

22 I turned this \$225 million value into an incremental avoided cost, using an
23 avoided-cost valuation tool developed by NS Power for the DSM Advisory Group,
24 which is being used in the development of EfficiencyOne’s next DSM plan. Adding

¹³ Exhibit N-2, IR-6(e); Attachment 2.

¹⁴ Attachment 2.

1 this \$225 million value to the \$1.6 billion (NPVRR) avoided cost savings associated
2 with the base DSM plan (compared with no DSM) results in increasing the 2023
3 avoided cost value by 1.0 ¢/kWh.

4 There are some timing differences between the energy avoided by the DSM plan
5 and the energy to be delivered by the Solar Garden, but the effect of those differences
6 is likely to be small. Thus, if NS Power were to include this overcompliance value in
7 its calculation of the Credit value, I expect it would be on the order of 1.0 ¢/kWh.

8 **Q: What is the potential impact of a stronger federal GHG reduction policy on**
9 **avoided costs?**

10 A: In response to an information request, NS Power estimated the impact of IRP Scenario
11 3.1C on its avoided costs.¹⁵ IRP Scenario 3.1C reduces carbon emissions to 44 million
12 tons from the 65 million tons in Scenario 2.0C. NS Power calculates that avoided
13 costs for IRP Scenario 3.1C would be about 0.3 ¢/kWh more than in IRP Scenario
14 2.0C.

15 I further note that this increase is in addition to the estimated 1.0 ¢/kWh
16 overcompliance value estimated above.

17 **Q: Should the Board revise the Credit to include additional value for carbon**
18 **emission reductions?**

19 A: Not in this proceeding. The issues at stake—how to value overcompliance, when to
20 recognize the impact of forthcoming federal regulations—are beyond the scope of
21 this proceeding.

22 However, this proceeding should consider how to update the SGNS Solar
23 Garden Pilot Rate Rider when these issues are resolved in other proceedings. Over
24 the 30-year lifetime of the Solar Garden assumed by NS Power, adding 1.3 ¢/kWh in

¹⁵ NSPI (Synapse) IR-13(c).

1 carbon reduction value to the Credit, with no other changes, would increase the net
2 benefit to participants from \$1,307 to \$3,562, an additional windfall of \$2,255.¹⁶

3 **V. Sharing Risks Associated with Future Cost Changes**

4 **Q: Why should the Solar Garden Pilot Rate Rider be designed to share risks more**
5 **equitably between participants and ratepayers?**

6 A: NS Power would guarantee Solar Garden participants no future program rate
7 increases, exposing ratepayers to potential cost increases, while flowing through cost
8 reductions to participants. It is not clear how NS Power would adjust the Credit if
9 future estimates of the avoided costs are higher or lower than estimated for Scenario
10 2.0C. If the Credit were to rise in response to higher estimates of avoided cost, but
11 not be allowed to fall below the escalated 2021 price, benefits would again flow to
12 participants and costs to ratepayers. As noted above, this asymmetry could result in a
13 substantial windfall for solar garden participants.

14 Since the rider is designed to pilot a more general offering, equitable sharing of
15 risks also needs to consider the interaction of this program with future Solar Garden
16 offerings. For example, if a future Solar Garden were offered with a higher Credit
17 rate, customers could exit the first Solar Garden and sign up for a new subscription
18 from a Solar Garden with a higher Credit payment. Ratepayers could be responsible
19 for most of the remaining unrecovered costs if that occurred.

¹⁶ The net benefit is calculated on a net present value basis using the calculator provided by NS Power in Appendix B, assuming a subscription of 8 kW.

1 **Q: How does NS Power’s Solar Garden Pilot Rate Rider compare to other utilities’**
2 **offerings?**

3 A: Utilities in North America offering community solar gardens use three basic models.
4 They may offer immediate bill savings, a hedge against potential rate hikes, or
5 payback of an upfront payment after a set period. NS Power’s proposal is different
6 from all three of these models, since it will have immediate bill impacts but will offer
7 bill savings in future years, resulting in a breakeven point after about ten years.¹⁷

8 According to the Smart Electric Power Alliance (SEPA), “programs promising
9 immediate bill savings almost universally garner a full subscription,” but other types
10 of programs experience lower subscription rates.¹⁸ In some locations, the rate for
11 community solar programs is set at a fixed percentage discount (e.g., 5 percent) from
12 a generally available benchmark rate or the energy portion of the customer’s actual
13 bill. The size of the discount may be larger if the customer (or a third-party funding
14 source) makes an upfront payment of some type.

15 SEPA suggests that successful community solar gardens meet three criteria.
16 They:

- 17 1. Are fully, or nearly fully, subscribed;
- 18 2. Return value to all rate-payers in an economically balanced and
19 equitable manner; and
- 20 3. Have largely satisfied members.¹⁹

21 It seems unlikely that the NS Power Solar Garden will fully meet the second criterion
22 under any scenario, since the project is unlikely to result in economic returns to
23 ratepayers commensurate with ratepayer investment in the SGNS project. Since NS

¹⁷ Summation of line 43 in Exhibit N-1, Appendix B, tab “Ops.”

¹⁸ Smart Electric Power Alliance, *Community Solar Program Design Models* (2018), p. 12.

¹⁹ *Id.*, p. 26.

1 Power did not propose the SGNS project with the intent to generate economic returns,
2 this is already understood by the Board.

3 **Q: Would it make sense for NS Power to offer immediate bill savings with no up-**
4 **front payment to participants?**

5 A: No. A challenge with the NS Power proposal is that it has a flexible subsidy. Since
6 ratepayers are responsible for overruns in construction and O&M costs, the successful
7 immediate bill savings model is not appropriate. My understanding is that the
8 immediate bill savings model is usually implemented without ratepayer backing—
9 cost overruns are absorbed by the program developer (government agency, utility
10 shareholders, or private party).

11 **Q: How would you change NS Power’s proposal to share risks more equitably?**

12 A: At a minimum, the one-way ratchet should be eliminated. Eliminating the one-way
13 ratchet shares the risk associated with avoided cost changes between participants and
14 ratepayers. To accomplish this, the Board could approve NS Power’s proposed Credit
15 and Solar Capacity Charge through 2031, by which time the participants will have
16 broken even on their net bill effects. At that time, the Board can assess whether the
17 Credit and/or the Solar Capacity Charge should be revised.

18 The Board could direct NS Power to develop a revised proposal that adds an up-
19 front payment by participants in exchange for immediate and guaranteed bill savings,
20 consistent with successful program designs elsewhere. For example, rather than a
21 credit and charge approach, simply selling energy from the Solar Garden at a percent
22 or nominal discount from the customer’s standard rate. This approach could allow
23 revenues for energy from the Solar Garden to increase if rates also increase.

24 Neither approach would reduce the exposure of ratepayers to the risk of further
25 increases in construction or O&M costs.

1 **Q: Do you recommend any other changes?**

2 A: No. Other than the changes to the process for updating the Credit and the Solar
3 Capacity Charge, NS Power's proposed rate design, eligibility, and other relevant
4 terms for the SGNS Solar Garden Pilot Rate Rider appear reasonable and consistent
5 with the program approved by the Board in the SGNS proceeding.

6 **Q: Does this conclude your testimony?**

7 A: Yes.

8

9

JOHN D. WILSON

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SUMMARY OF PROFESSIONAL EXPERIENCE

- 2019–Present* **Research Director, Resource Insight, Inc.** Provides research, technical assistance, and expert testimony on electric- and gas-utility planning, economics, and regulation. Reviews electric-utility rate design. Designs and evaluates conservation programs for electric utilities, including conservation cost recovery mechanisms and performance incentives. Evaluates performance of renewable resources and designs performance evaluation systems for procurement. Designs and assesses resource planning and procurement strategies for regulated and competitive markets.
- 2007-19* **Deputy Director for Regulatory Policy, Southern Alliance for Clean Energy.** Managed regulatory policy, including supervision of experts in areas of energy efficiency, renewable energy, and market data. Provided expert witness testimony on topics of resource planning, renewable energy, energy efficiency to utility regulators. Directed litigation activities, including support of expert witnesses in the areas of rate design, resource planning, renewable energy, energy efficiency, and resource procurement. Conducted supporting research and policy development. Represented SACE on numerous legislative, utility, and private committees across a wide range of climate and energy related topics.
- 2001–06* **Executive Director, Galveston-Houston Association for Smog Prevention.** Directed advocacy and regulatory policy related to air pollution reduction, including ozone, air toxics, and other related pollutants in the industrial, utility, and transportation sectors. Served on the Regional Air Quality Planning Committee, Transportation Policy Technical Advisory Committee, and Steering Committee of the TCEQ Interim Science Committee.
- 2000–01* **Senior Associate, The Goodman Corporation.** Provided transportation and urban planning consultant services to cities and business districts across Texas.
- 1997–99* **Senior Legislative Analyst and Technology Projects Coordinator, Office of Program Policy Analysis and Government Accountability, Florida Legislature.** Author or team member for reports on water supply policy, environmental permitting, community development corporations, school district financial management and other issues – most recommendations implemented by the 1998 and 1999 Florida Legislatures. Edited statewide government accountability newsletter and coordinated online and internal technical projects.
- 1997* **Environmental Management Consultant, Florida State University.** Project staff for Florida Assessment of Coastal Trends.

1992-96 **Research Associate, Center for Global Studies, Houston Advanced Research Center.** Coordinated and led research for projects assessing environmental and resource issues in the Rio Grande / Rio Bravo river basin and across the Greater Houston region. Coordinated task force and edited book on climate change in Texas.

EDUCATION

BA, Physics (with honors) and history, Rice University, 1990.

MPP, John F. Kennedy School of Government, Harvard University, 1992. Concentration areas: Environment, negotiation, economic and analytic methods.

PUBLICATIONS

“Urban Areas,” with Judith Clarkson and Wolfgang Roeseler, in Gerald R. North, Jurgen Schmandt and Judith Clarkson, *The Impact of Global Warming on Texas: A Report of the Task Force on Climate Change in Texas*, 1995.

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EXPERT TESTIMONY

2008 **South Carolina PSC** Docket No. 2007-358-E, surrebuttal testimony on behalf of Environmental Defense, the South Carolina Coastal Conservation League, Southern Alliance for Clean Energy and the Southern Environmental Law Center. Cost recovery mechanism for energy efficiency, including shareholder incentive and lost revenue adjustment mechanism.

2009 **North Carolina NCUC** Docket No. E-7, Sub 831, direct testimony on behalf of Environmental Defense Fund, Natural Resources Defense Council, Southern Alliance for Clean Energy, and Southern Environmental Law Center. Cost recovery mechanism for energy efficiency, including shareholder incentive and lost revenue adjustment mechanism.

Florida PSC Docket Nos. 080407-EG through 080413-EG, direct testimony on behalf of Southern Alliance for Clean Energy and the Natural Resources Defense Council. Energy efficiency potential and utility program goals.

South Carolina PSC Docket No. 2009-226-E, direct testimony in general rate case on behalf of Environmental Defense, the Natural Resources Defense Council, the South Carolina Coastal Conservation League, Southern Alliance for Clean Energy and the Southern Environmental Law Center. Cost recovery mechanism for energy efficiency, including shareholder incentive and lost revenue adjustment mechanism.

2010 **North Carolina NCUC** Docket No. E-100, Sub 124, direct testimony on behalf of Environmental Defense Fund, the Sierra Club, Southern Alliance for Clean Energy, and Southern Environmental Law Center. Adequacy of consideration of energy efficiency in Duke Energy Carolinas and Progress Energy Carolinas’ 2009 integrated resource plans.

Georgia PSC Docket No. 31081, direct testimony on behalf of Southern Alliance for Clean Energy. Adequacy of consideration of energy efficiency in

Georgia Power's 2010 integrated resource plan, including cost effectiveness, rate and bill impacts, and lost revenues.

Georgia PSC Docket No. 31082, direct testimony on behalf of Southern Alliance for Clean Energy. Adequacy of consideration of energy efficiency in Georgia Power's 2010 demand side management plan, including program revisions, planning process, stakeholder engagement, and shareholder incentive mechanism.

2011 **South Carolina PSC** Docket No. 2011-09-E, allowable ex parte briefing on behalf of Southern Alliance for Clean Energy, South Carolina Coastal Conservation League, and Upstate Forever. Adequacy of South Carolina Electric & Gas's 2011 integrated resource plan, including resource mix, sensitivity analysis, alternative supply and demand side options, and load growth scenarios.

South Carolina PSC Docket Nos. 2011-08-E and 2011-10-E, allowable ex parte briefing on behalf of Southern Alliance for Clean Energy, South Carolina Coastal Conservation League, and Upstate Forever. Adequacy of Progress Energy Carolinas and Duke Energy Carolinas' 2011 integrated resource plans, including resource mix, sensitivity analysis, alternative supply and demand side options, cost escalation, uncertainty of nuclear and economic impact modeling.

2013 **Georgia PSC** Docket No. 36498, direct testimony on behalf of Southern Alliance for Clean Energy. Adequacy of consideration of energy efficiency in Georgia Power's 2013 integrated resource plan, including cost effectiveness, rate and bill impacts, and lost revenues, economics of fuel switching and renewable resources.

South Carolina PSC Docket No. 2013-392-E, direct testimony with Hamilton Davis in Duke Energy Carolinas need certification case on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. Need for capacity, adequacy of energy efficiency and renewable energy alternatives, and use of solar power as an energy resource.

2014 **South Carolina PSC** Docket No. 2014-246-E, direct testimony generic proceeding on behalf of the South Carolina Coastal Conservation League and Southern Alliance for Clean Energy. Methods for calculating dependable capacity credit for renewable resources and application to determination of avoided cost.

2015 **Florida PSC** Docket No. 150196-EI, direct testimony in Florida Power & Light need certification case on behalf of Southern Alliance for Clean Energy. Appropriate reserve margin and system reliability need.

2016 **Georgia PSC** Docket No. 40161, direct testimony on behalf of Southern Alliance for Clean Energy. Adequacy of consideration of renewable energy in Georgia Power's 2016 integrated resource plan, including portfolio diversity,

operational and implementation risk, analysis of project-specific costs and benefits (including location and technology considerations), and methods for calculating dependable capacity credit for renewable resources.

2019 **Georgia PSC** Docket Nos. 42310 and 42311, direct testimony with Bryan A. Jacob in Georgia Power's 2019 integrated resource plan and demand side management plan on behalf of Southern Alliance for Clean Energy. Adequacy of consideration of renewable energy in IRP, retirement of uneconomic plants, and use of all-source procurement process. Shareholder incentive mechanism for both renewable energy and DSM plan.

2020 **Nova Scotia UARB** Matter No. M09519, direct testimony with Paul Chernick in Nova Scotia Power's application for approval of the Smart Grid Nova Scotia Project on behalf of the Nova Scotia Consumer Advocate. Cost classification, decommissioning costs, justification for software vendor selection, and suggested changes to project scope.

Nova Scotia UARB Matter No. M09499, direct testimony with Paul Chernick in Nova Scotia Power's 2020 annual capital expenditure plan on behalf of the Nova Scotia Consumer Advocate. Potential to decommission hydroelectric systems, review of annually recurring capital projects, use of project contingencies, and cost minimization practices.

Nova Scotia UARB Matter No. M09579, direct testimony with Paul Chernick in Nova Scotia Power's application for the Gaspereau Dam Safety Remedial Works on behalf of the Nova Scotia Consumer Advocate. Alternatives to proposed project, project contingency factor, estimation of archaeological costs, and replacement energy cost calculation.

Nova Scotia UARB Matter No. M09707, direct testimony with Paul Chernick on Nova Scotia Power's 2020 Load Forecast on behalf of the Nova Scotia Consumer Advocate. Impacts of recession, application of end-use studies, improvements to forecast components, and impact of time-varying pricing.

California PUC Docket A.19-10-012, direct and rebuttal testimony with Paul Chernick in San Diego Gas & Electric's application for the Power Your Drive Electric Vehicle Charging Program on behalf of the Small Business Utility Advocates. Ensuring that utility-installed chargers advance California goal for electric vehicles. Budget controls. Reporting requirements. Evaluation, monitoring and verification processes. Outreach to small business customers.

California PUC Docket A.19-08-013, direct testimony in Southern California Edison's 2021 general rate case (track 2) on behalf of the Small Business Utility Advocates. Reasonableness of remedial software costs to be included in authorized revenue requirement.

Georgia PSC Docket Nos. 4822, 16573 and 19279, direct, rebuttal and surrebuttal testimony in Georgia Power Company's PURPA avoided cost review

on behalf of the Georgia Large Scale Solar Association. Reviewing compliance with prior Commission orders. Application of capacity need forecast in projection of avoided capacity cost. Calculation of cost of new capacity. Proposal of standard offer contract.

California PUC Docket A.19-11-019, direct, reply, responsive, and reply to responsive testimony with Paul Chernick in Pacific Gas & Electric's 2021 general rate case (phase 2) on behalf of the Small Business Utility Advocates. Cost of service methods. Rate design, including customer charges, demand charges, real time pricing tariffs, TOU differentials and periods.

Nova Scotia UARB Matter No. M09548, direct testimony on the audit of Nova Scotia Power's Fuel Adjustment Mechanism on behalf of the Nova Scotia Consumer Advocate. Reasonableness of fuel contract costs. Scope of study on dispatch practices. Impact of greenhouse gas shadow pricing. Compliance issues related to resource planning.

2021 **California PUC** Docket R.20-11-003, direct and reply testimony on rulemaking to ensure reliable electric service in the event of an extreme weather event on behalf of the Small Business Utility Advocates. Modifications to Critical Peak Pricing programs and Time of Use periods. Modifications to load management programs.

Nova Scotia UARB Matter No. M09898, direct testimony on Nova Scotia Power's Annually Adjusted Rates on behalf of the Nova Scotia Consumer Advocate. Effect of delays in power contract. Unit modeling assumptions. Variable capital costs. Application of Time-Varying Pricing.

Nova Scotia UARB Matter No. M09920, direct testimony on Nova Scotia Power's Annual Capital Expenditure Plan for 2021 on behalf of the Nova Scotia Consumer Advocate. Cost minimization. Project contingency. Economic analysis model. Analysis of specific projects.

Nova Scotia UARB Matter No. M09777, direct testimony on Nova Scotia Power's Time-Varying Pricing Tariff Application on behalf of the Nova Scotia Consumer Advocate. Effect of proposed TVP tariffs on load, capacity savings, and energy costs. Recommended CPP tariffs. Treatment of demand charges in TVP tariffs. Implementation and evaluation of TVP tariffs. Lost revenue adjustment mechanism.

South Carolina PSC Docket Nos. 2019-224-E and 2019-225-E, surrebuttal testimony on 2020 Integrated Resource Plans filed by Duke Energy Carolinas and Duke Energy Progress. All-source procurement process. Process for resolution of disputed issues in IRP proceedings.

California PUC Docket A.20-10-011, direct and reply testimony with Paul Chernick in Pacific Gas & Electric's Commercial Electric Vehicle Day-Ahead Hourly Real Time Pricing Pilot on behalf of the Small Business Utility

Advocates. Rate design for real time pricing tariff. Marketing to small businesses. Evaluation plan.

California PUC Docket R.20-08-020, direct and reply testimony with Paul Chernick in rulemaking to revisit net energy metering (NEM) tariffs on behalf of the Small Business Utility Advocates. Rate design for NEM tariff. Method for analyzing NEM tariff program.

California PUC Docket A.20-10-012, direct testimony with Paul Chernick in Southern California Edison's 2021 general rate case (phase 2) on behalf of the Small Business Utility Advocates. Cost of service methods. Rate allocation and design, including customer charges and real time pricing tariffs.

Attachment 2

From: Rondeaux, Nancy <Nancy.Rondeaux@novascotia.ca>
Sent: Wednesday, July 21, 2021 2:49 PM
To: DSMAG; albert e dominie; Alice Napoleon; Ben Grieder; Bill Mahody; Brian Curry; Brian Gifford; Brianne Rudderham; Chris Milligan; Debbie Nielsen; Emily Mason; Francis Wyatt; Gina Thompson; Holly Brown; Jennifer Kallay; Ross, Jennifer; Jessie Wallace; jim; John Athas; John Wilson; Karynne Munroe; Kate McDonald; Nelson, Kathlyne; Kelley MacDonald; Mark Drazen; martin.rovers@nspower.ca; SBABLACKBURN@outlook.com; Mellisa Whitten; Nancy G Rubin; Nelson Blackburn; nicole.godbout@nspower.ca; Patrick Butler; Paul Chernick; Craig, Peter T; Shannon Miedema; Shawn Kelly; Pronko, Steve; Suman Gautam; tlove@greenenergyeconomics.com; tim.wood@nspower.ca; voytek.grus@nspower.ca; Hollett, Jason; Miller, Michelle; Collins, Keith E; Green, Bob J
Subject: Comments on the carbon pricing assumptions in the 2023-2025 DSM Plan development process

Members of the DSM AG,

I am pleased to provide you with the most recent public information on the expected state of carbon pricing policy in Canada post-2022, as well as outcomes of the Province's existing Cap-and-Trade Program.

Concerning federal carbon pricing policy post-2022:

- In December 2020, as part of its strengthened climate plan (see: <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/healthy-environment-healthy-economy.html>) the federal government announced its intent to provide longer-term certainty on carbon pollution pricing out to 2030. At that time, the federal government proposed that it would increase the carbon price by \$15 per year starting in 2023, rising to \$170 per tonne in 2030.
- On July 12th, 2021, the federal government confirmed that the minimum price on carbon pollution will increase by \$15 per tonne each year starting in 2023 through to 2030 (i.e. to \$170/tonne), and that the benchmark will be updated to ensure all provincial and territorial pricing systems are comparable in terms of stringency (see: <https://www.canada.ca/en/environment-climate-change/news/2021/07/government-of-canada-confirms-ambitious-new-greenhouse-gas-emissions-reduction-target.html>) and ([Additional information on the federal carbon pollution pricing benchmark - Canada.ca](#))
- Provinces and territories will continue to have flexibility to maintain their own systems, but they will still need to undergo federal assessment and approval.
- Provinces and territories can implement (i) an explicit price-based system (e.g., a carbon tax like British Columbia's or a hybrid system comprised of a carbon levy on fuels and performance-based standards with an emissions trading system like in Alberta) or (ii) a cap-and-trade system (e.g., Nova Scotia and Quebec).
- While there is no confirmed provincial direction on which carbon pricing system Nova Scotia will be implementing post-2022, it is clear that Nova Scotia will need to put in place a carbon pricing system that meets the federal benchmark, or the federal backstop will apply.

- If an explicit price-based system is chosen, the carbon price will rise by \$15/tonne starting in 2023. If a cap-and-trade program is chosen, the GHG emission reductions (i.e., caps) will need to correspond to the emissions that would have resulted in that jurisdiction from applying an explicit price-based system. Regardless of whether Nova Scotia chooses cap-and-trade or an explicit price-based system, the implicit or explicit price trajectory is intended to drive the same level of GHG reductions.
- To date, these federal policy commitments have not been confirmed in regulations (although the federal government indicates that it will be amending its regulations shortly). However, this is the intended federal carbon policy direction and the only carbon price trajectory currently available for post-2022.

With respect to Nova Scotia's current Cap-and-Trade Program:

- To date, Nova Scotia has held three auctions of emissions allowances pursuant to its Cap-and-Trade Program (June 2020, December 2020 and June 2021).
- The respective settlement price for allowances for these auctions has been \$24.00, \$24.70 and \$36.71. All auctions have been oversubscribed, meaning that demand for allowances has exceeded supply.
- Additional details on auction results are available at:
<https://climatechange.novascotia.ca/cap-trade-regulations>

We'd like to propose that this is a significant federal carbon pricing policy commitment and warrants being reflected in the 2023/25 plan development process.

Sincerely,

Nancy Rondeaux
Executive Director, Climate Change
Nova Scotia Environment and Climate Change
