

Appendix A

Schedule E

EECA Plan

(2016-2018 DSM Resource Plan)

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1. INTRODUCTION

The 2016-2018 ~~DSM~~Demand-Side Management (DSM) Resource Plan has been developed based on ENS's growing experience and history in delivering successful DSM programs and services to Nova Scotians. As part of the process, ENS engaged Navigant Consulting and Dunsky Energy Consulting to assist in developing inputs and proposals to the Plan.

The proposed Plan represents a comprehensive suite of program and service offerings for Nova Scotia electricity users. The programs and services included in the Plan have been developed, assessed and modelled based on ENS's experience delivering DSM, expected market conditions, technology availability, and customer behaviour. As with prior DSM Plans, this Application is not an implementation Plan; it has been developed for planning and cost-effectiveness testing purposes. Over the course of the three-year implementation period, ENS anticipates ~~continuing its flexibility~~the need to make appropriate mid-course adjustments that react to lessons learned through program implementation experience and independent evaluations, as well as circumstances such as changing market conditions, changes in technology and changes in codes and standards. Such flexibility to make appropriate mid-course adjustments is an essential tool in providing ENS with the ability to achieve its overall energy and demand savings performance requirements. ~~As with prior DSM implementations, mid-course~~When making such adjustments, ENS will ~~continue~~follow the process agreed to be reported to stakeholders by Stakeholders in the Consensus Settlement Agreement and the UARB through quarterly and annual progress reports as ordered by the Board in its August 12, 2015 Decision.

The Plan addresses affordability by balancing multiple short- and long-term considerations, including bill impacts, rate impacts, and long-term planning analyses. The Plan maintains a balanced portfolio of program and service offerings, enabling opportunities for participation by a broad range of Nova Scotian electricity consumers while ensuring that capacity additions to the electrical system are avoided, per NS Power's IRP and subsequent analyses.

This Plan has been modified to comply with the Utility and Review Board (UARB)'s August 12, 2015 Decision, which set annual DSM investment amounts of \$33.21 million, \$34.02 million and \$34.92 million for 2016, 2017, and 2018 respectively. It outlines ENS's proposed programs and strategies for achieving the overall energy and demand savings targets- as specified in EfficiencyOne's original 2016-2018 DSM Resource Plan. However, program-level investment and energy and demand savings targets have been revised to achieve the overall result within the approved investment level.

In 2016-2018, ENS's programs and services will continue to advance a personalized, customer-centric approach, aimed at reducing the need for customers to research exactly which technologies are eligible for rebates and incentives.

Enabling Strategies will also continue to be included in ENS's portfolio in 2016-2018. As in past years, Enabling Strategies activities have the objectives of strengthening Nova Scotia's energy efficiency culture, allowing for best-practice evolution of program and service offerings, encouraging market transformation for efficient technologies, and allowing for ENS to continue to complete and advance its regulatory obligations.

Section Two of this Plan describes ENS's proposed Residential programs. Section Three describes the proposed programs for Business, Non-Profit and Institutional (BNI) customers. Enabling Strategies are discussed in Section Four.

1.1 2016-2018 DSM Resource Plan Savings and Investment

Figure 1.1.1 provides a summary of the energy savings and investment for the 2016-2018 DSM Resource Plan.

Figure 1.1 - 2016-2018 DSM Resource Plan Investment and Savings

Year	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
2016	38.5	127.3	133.1	20.4	1.9	3.6
2017	40.3	139.8	136.5	21.0	2.0	3.8
2018	42.6	150.5	136.3	21.0	2.1	3.9
Total	121.5	417.5	405.9	62.5	2.0	3.8

Year	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
2016	33.21	126.6	133.1	20.4	2.3	4.2
2017	34.02	138.7	136.5	21.0	2.4	4.4
2018	34.92	148.3	136.3	21.0	2.5	4.6
Total	102.15	413.5	405.9	62.5	2.4	4.4

Currency Investment is expressed in 2016 nominal dollars. Columns may not add correctly, due to rounding.

Annual avoided costs, calculated using ENSC's DSM Potential Study at the Base Level, were provided by NS Power. They include the cost of energy and capacity.

^a Lifetime benefits are expressed as the net present value of the avoided costs, including energy and capacity, over the life of the program measures.

^b TRC is a benefit/cost ratio comparing lifetime benefits to the sum of ENS's and participants' costs.

^c PAC is a benefit/cost ratio comparing lifetime benefits to ENS's costs.

Figures 1.2, 1.3, and 1.4 provide the program level investment and savings for 2016, 2017, and 2018, respectively.

Figure 1.2 - 2016 DSM Resource Plan Investment and Savings

2016	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	2.5	6.6	11.0	1.1	1.6	2.7
Existing Residential	12.0	50.9	41.0	7.5	1.8	4.3
Low Income Participation ^d	2.0		7.8	1.0		
New Residential	1.7	6.7	3.5	1.0	2.5	3.9
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	6.7	23.8	34.1	5.3	2.0	3.5
Custom Incentives	8.2	32.0	34.0	4.2	2.5	3.9
Direct Installation	4.2	7.3	9.5	1.3	1.0	1.8
Enabling Strategies						
Education and Outreach	1.6					
Development and Research	1.1					
Other Enabling Strategies	0.6					
Total	38.5	127.3	133.1	20.4	1.9	3.6

2016	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	3.20	6.2	12.4	1.1	1.5	1.9
Existing Residential	9.47	47.2	39.4	7.1	2.5	5.0
Low Income Participation ^d	1.77		7.6	1.0		
New Residential	1.23	7.2	3.8	1.1	2.5	5.9
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	5.89	24.6	33.1	5.3	2.3	4.2
Custom Incentives	6.79	33.4	34.0	4.3	3.0	4.9
Direct Installation	3.80	8.1	10.5	1.4	1.2	2.1
Enabling Strategies						
Education and Outreach	1.32					
Development and Research	1.00					
Other Enabling Strategies	0.52					
Total	33.21	126.6	133.1	20.4	2.3	4.2

Currency Investment is expressed in 2016 dollars. Columns may not add correctly, due to rounding. Annual avoided costs, calculated using ENSC's DSM Potential Study at the Base Level, were provided by NS Power. They include the cost of energy and capacity.

^a Lifetime benefits are expressed as the net present value of the avoided costs, including energy and capacity, over the life of the program measures.

^b TRC is a benefit/cost ratio comparing lifetime benefits to the sum of ENS's and participants' costs.

^c PAC is a benefit/cost ratio comparing lifetime benefits to ENS's costs.

^d Reflects ENS's planned participation by low income customers, per the 2015 DSM Resource Settlement Agreement.

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Figure 1.3 - 2017 DSM Resource Plan Investment and Savings

2017	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	2.7	7.3	12.0	1.1	1.7	2.8
Existing Residential	13.6	58.3	44.2	8.0	1.9	4.3
Low Income Participation ^d	2.3		8.2	1.1		
New Residential	1.8	7.2	3.6	1.0	2.6	4.1
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	6.5	25.4	33.6	5.4	2.2	3.9
Custom Incentives	8.2	33.9	34.1	4.3	2.7	4.1
Direct Installation	4.0	7.5	9.0	1.2	1.1	1.9
Enabling Strategies						
Education and Outreach	1.7					
Development and Research	1.2					
Other Enabling Strategies	0.7					
Total	40.3	139.8	136.5	21.0	2.0	3.8

2017	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	3.31	6.7	12.6	1.1	1.5	2.0
Existing Residential	10.62	53.7	43.3	7.9	2.5	5.1
Low Income Participation ^d	1.82		7.8	1.0		
New Residential	1.28	7.7	3.9	1.1	2.6	6.2
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	5.65	26.6	32.6	5.3	2.5	4.7
Custom Incentives	6.49	35.6	34.1	4.3	3.2	5.3
Direct Installation	3.62	8.3	10.0	1.4	1.2	2.3
Enabling Strategies						
Education and Outreach	1.43					
Development and Research	1.04					
Other Enabling Strategies	0.58					
Total	34.02	138.7	136.5	21.0	2.4	4.4

Currency Investment is expressed in ~~2016~~2017 dollars. Columns may not add correctly, due to rounding. Annual avoided costs, calculated using ENSC's DSM Potential Study at the Base Level, were provided by NS Power. They include the cost of energy and capacity.

^a Lifetime benefits are expressed as the net present value of the avoided costs, including energy and capacity, over the life of the program measures.

^b TRC is a benefit/cost ratio comparing lifetime benefits to the sum of ENS's and participants' costs.

^c PAC is a benefit/cost ratio comparing lifetime benefits to ENS's costs.

^d Reflects ENS's planned participation by low income customers, per the 2015 DSM Resource Settlement Agreement.

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Figure 1.4 - 2018 DSM Resource Plan Savings and Investment

2018	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	2.7	7.9	12.2	1.1	1.8	2.9
Existing Residential	14.8	61.8	43.6	8.0	1.9	4.2
Low Income Participation ^d	2.6		7.7	1.0		
New Residential	1.8	7.8	3.7	1.1	2.8	4.3
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	7.0	28.9	33.6	5.3	2.2	4.1
Custom Incentives	8.3	36.4	34.4	4.3	2.9	4.4
Direct Installation	3.9	7.7	8.6	1.2	1.1	2.0
Enabling Strategies						
Education and Outreach	1.8					
Development and Research	1.3					
Other Enabling Strategies	0.9					
Total	42.6	150.5	136.3	21.0	2.1	3.9

Currency

2018	Investment (\$ million)	Lifetime Benefits (\$ million) ^a	Incremental Annual Net Energy Savings at Generator (GWh)	Incremental Annual Net Demand Savings at Generator (MW)	Total Resource Cost Test (TRC) ^b	Program Administrator Cost Test (PAC) ^c
Residential DSM Programs						
Efficient Product Rebates	3.42	7.2	12.6	1.1	1.6	2.1
Existing Residential	11.10	55.7	43.0	7.9	2.5	5.1
Low Income Participation ^d	1.75		7.3	0.9		
New Residential	1.32	8.4	4.0	1.1	2.8	6.5
Business, Nonprofit and Institutional Programs						
Efficient Product Rebates	5.69	30.3	32.6	5.2	2.5	4.9
Custom Incentives	6.49	38.1	34.4	4.3	3.4	5.6
Direct Installation	3.62	8.5	9.6	1.3	1.3	2.4
Enabling Strategies						
Education and Outreach	1.43					
Development and Research	1.09					
Other Enabling Strategies	0.76					
Total	34.92	148.3	136.3	21.0	2.5	4.6

Investment is expressed in 2016/2018 dollars. Columns may not add correctly, due to rounding. Annual avoided costs, calculated using ENSC's DSM Potential Study at the Base Level, were provided by NS Power. They include the cost of energy and capacity.

^a Lifetime benefits are expressed as the net present value of the avoided costs, including energy and capacity, over the life of the program measures.

^b TRC is a benefit/cost ratio comparing lifetime benefits to the sum of ENS's and participants' costs.

^c PAC is a benefit/cost ratio comparing lifetime benefits to ENS's costs.

^d Reflects ENS's planned participation by low income customers, per the 2015 DSM Resource Settlement Agreement.

1.2 Programs and Services Overview

The 2016-2018 Residential and Business, Non-profit and Institutional (BNI) programs are expected to include ongoing gradual evolution in order to address the following objectives:

- Respond to changes in the market, such as updated codes and standards;
- Incorporate the findings of ongoing research, such as assessments of technology penetration;
- Maintain access to programs and services across residential, commercial and industrial ratepayers;
- Provide the stability required to ensure availability of industry capacity to achieve future targets; and
- Continue to sustain a reasonable balance of investments between the Residential and BNI sectors.

ENS will focus on program and service changes aimed to further improve the customer's experience and simplify participation. These changes will also allow more industry partners to supply services and products through programs, and encourage participants to achieve more energy savings with each transaction. ENS is referring to this evolution as Programs 2.0. It will include alterations to marketing and delivery that provide access to all services through a one-window approach; enhanced information technology for tracking of participant information; and more flexible support options that allow tailoring of incentives and technical support to match the requirements of each participant. These modifications are being researched, designed and piloted in Q1 through Q3 of 2015, with

1 rollout expected in Q4 and full implementation expected in 2016. The intent is to enhance
2 the customer experience while streamlining access to programs and services, without
3 altering the inherent structure and operation of ENS programs and services. ENS will
4 continue to report on its results under the programs proposed in this Application
5 throughout 2016-2018.

2. RESIDENTIAL PROGRAMS AND SERVICES

Efficiency Nova Scotia's Residential sector offerings include a variety of initiatives to help homeowners, renters and landlords become more efficient in their use of electricity. Educating potential participants about the benefits of energy efficiency is an important component of these initiatives to help encourage them to take action. Incentives vary from the installation of low-cost energy efficiency products at no charge, to incenting the removal of old inefficient appliances, to offering incentives to upgrade or replace inefficient products. For customers, interactions with ENS will range from instant rebates for purchasing an efficient product at a participating retail location to an in-depth test and assessment of the energy use of the home.

Through its Residential service offerings, ENS educates participants on the benefits of taking part in more than one energy efficiency service. The intent is to help participants save electricity by encouraging multiple actions to help them maximize their energy savings. For reporting purposes, the services offered to Nova Scotians are categorized into the following programs:

- Efficient Product Rebates
- Existing Residential
- New Residential

Efficiency Nova Scotia will continue to enhance its Residential services over the three-year agreement, in response to new product availability, market shifts, client needs, and program evaluations.

2.1 Efficient Product Rebates (Residential)

Nova Scotians benefit from energy savings by using products that are energy efficient. In many cases, this involves making a decision to purchase an energy efficient product,

1 often at a higher upfront cost, rather than a less-expensive and less-efficient product. ENS
2 will continue to work with retailers and distributors to provide a service that educates
3 consumers and helps to offset the higher price of the more efficient product.
4

5 Incentives for energy-efficient products are available to all Nova Scotians. Financial
6 incentives are offered for selected products that meet or exceed the ENERGY STAR[®]
7 level of performance. For some energy efficient products for which ENERGY STAR[®]
8 certification is not currently available, rebates will continue to be offered to help
9 participants reduce electricity use. Eligible measures include a variety of lighting
10 products, appliances and electronics.
11

12 ENS will continue to offer a financial incentive, no-charge pick-up and recycling of
13 inefficient, but functioning, large appliances such as refrigerators, freezers and room air
14 conditioners. This service permanently removes old, inefficient appliances from use in
15 Nova Scotia, eliminating them as a load on the system. While ENS has already removed
16 many of these appliances from homes, more recently, a growing number of landlords are
17 taking part. ENS is also exploring options for offering incentives for energy-efficient
18 appliances to participants with multiple inefficient ones.
19

20 **2.2 Existing Residential**

21

22 The Existing Residential program is designed to help reduce electricity consumption for
23 space and water heating and lighting. The goal is to promote cost-effective energy
24 efficiency improvements to Nova Scotia's housing stock of single detached houses,
25 duplexes, rental housing, mobile/mini homes and multi-family buildings. Most Existing
26 Residential services are offered to participants via service organizations, contracted to
27 deliver the services following a competitive Request for Proposals process.
28

29 A broad range of incentives are available for Nova Scotians, including rebates or
30 financing for electrically heated buildings to improve the efficiency of the structure.
31 These particular types of upgrades are especially valuable within older buildings as they

1 provide energy savings as well as non-energy benefits, such as increased comfort in the
2 residence and a potential increase in resale value. In addition, rebates or financing are
3 offered for installing efficient heating systems, which can lead to reductions in electricity
4 use for both space and water heating systems. Additional services include the installation
5 of efficient lighting and other low-cost products at no cost to participants.

6
7 Services are offered province-wide and modifications can be made over time to include
8 new products and additional offerings. Recent examples include offering a personal
9 energy planner to participants in the Home Energy Assessment service, working with a
10 municipality to pilot financing on property tax bills for energy efficiency improvements
11 to the home, and providing a searchable list of trade partners on the ENS website to help
12 Nova Scotians seek out contractors to conduct various upgrades. ENS will continue to
13 conduct promotional activities with contractors across the province to raise awareness
14 and provide details on how they can be added to the list.

15 16 **2.2.1. Low-Income Initiatives**

17
18 Beginning in 2015, NS Power shareholders are committing up to \$37 million dollars over
19 10 years to support the HomeWarming program. The program, in partnership with the
20 Clean Foundation, will offer free energy efficiency improvements to nearly 6,600 low-
21 income homeowners who heat with electricity. Intake will be completed by ENS.

22
23 ENS will continue to explore and support opportunities for electricity efficiency upgrades
24 for low-income Nova Scotians through its direct installation service. In addition, in 2015,
25 Efficiency Nova Scotia is working with Housing Nova Scotia to develop a building-
26 envelope initiative for multi-unit residential buildings under their authority. This
27 initiative is expected to continue into the 2016-2018 time period.

28
29 In 2015, ENS will be conducting research on low-income rental accommodations with
30 electric heating, per ENSC's 2015 DSM Resource Plan Settlement Agreement, approved

by the UARB on September 8, 2014. Additional opportunities for low-income services will be assessed and developed, where appropriate, following this research.

2.3 New Residential

To encourage energy efficient design and use of energy efficient products in new residential construction, Efficiency Nova Scotia's New Residential services are offered to builders and owners of new houses, including row housing and semi-detached houses, in Nova Scotia. It is expected that incentives will continue to focus on having homes meet or exceed the ENERGY STAR[®] certification. The Federal government, in consultation with building professionals, developed the ENERGY STAR[®] for New Homes standard. On average, homes achieving the ENERGY STAR[®] certification use 20 percent less energy than a home built to the Nova Scotia Building Code.

As part of the current service, energy assessments and design advice are provided to builders before construction. Data on the planned building envelope, equipment and minimum Building Code standards are used to determine the expected energy consumption of the home. A Certified Energy Advisor then recommends options that will improve the energy efficiency of the home design, allowing for informed decisions. After the home is constructed, a final inspection and rating is provided.

The Nova Scotia Building Code requires all new houses to either comply with specific prescriptive requirements or perform better than the modeled energy use of a reference home that meets those prescriptive requirements. Based on an Efficiency Nova Scotia study, a new home meeting prescriptive requirements achieves an EnerGuide score of 78. The EnerGuide rating system is maintained by Natural Resources Canada and uses software to estimate the energy use of a home. The ENS service requires the house to achieve an ENERGY STAR[®] certification or an EnerGuide score of 85 (or higher) to obtain incentives. If the minimum Building Code requirement for new homes is updated, Efficiency Nova Scotia will adapt its offering as appropriate to continually encourage further energy efficiency improvements in new homes.

2.4 Update on Energy Saving Actions

Efficiency Nova Scotia's 2016-2018 DSM Resource Plan does not include a target or investment for Energy Saving Actions. ENS piloted the Home Energy Report in 2013, and it will continue until early 2016. ENS is not proposing to continue the pilot due to near-term affordability considerations, which have resulted in a lower DSM Plan level than was approved for 2013 and 2014. Given the need to reduce and/or eliminate programs to address these considerations, the Home Energy Report was determined to have the least negative impact on ENS's ability to deliver a balanced portfolio and on industry capacity, despite its success in terms of achievement of energy savings. ~~If future DSM Resource Plans require a higher level of energy savings and corresponding investment, ENS expects to reconsider whether or not it would be offered.~~

Behaviour-based energy efficiency activities are important components to a balanced portfolio of options for customers. While ENS is not able to offer the Home Energy Report due to short-term affordability considerations, ENS ~~will~~may continue exploring ways in which it can offer ~~incentives or~~ services for customers in this area. As specific plans have not been developed, ENS ~~will~~may conduct research and development through its Enabling Strategies during 2016-2018. ~~If research and/or pilots result in offerings that achieve energy savings, ENS will categorize these services within its existing program offerings, with the specific program depending on the service offered.~~

3. BUSINESS, NON-PROFIT AND INSTITUTIONAL (BNI) PROGRAMS AND SERVICES

Efficiency Nova Scotia's Business, Non-Profit and Institutional (BNI) programs are designed to provide customers with easy access to energy efficiency solutions. The programs and services combine technical and financial support to improve the demand for, and affordability of, energy efficient technologies and practices. Aspects of these programs and services also encourage incorporation of energy efficiency into customers' business practices and long-term plans. The BNI initiatives are packaged, wherever possible, to provide a full suite of solutions for a range of businesses, industries and institutions to facilitate a 'one-window' service-based approach.

In the lead-up to 2016, ENS will continue to adopt and modify the BNI programs to better meet changing market demands. The focus will shift by adopting a more customer-centric approach when delivering services, providing BNI customers with a simplified, one-window approach to maximizing energy savings. These efforts are intended to enhance access to ENS services, maintain high levels of customer satisfaction and maximize energy savings per customer. ENS will also continue to leverage the support of qualified industry professionals to deliver BNI initiatives.

While ENS continues to adapt programs and services to improve the customer experience, reporting will continue to be based on the following three services:

- Efficient Product Rebates
- Custom Incentives
- Direct Installation

3.1 Efficient Product Rebates (BNI)

The BNI Efficient Product Rebates program provides financial incentives, through prescriptive rebates, on a wide variety of products to encourage BNI end-users to reduce electrical energy consumption and peak demand. Customers are able to select from a predefined list of energy efficient measures that correspond to a per-unit rebate. The program is designed to provide end users with a streamlined application process and quick turnaround times. Rebates are delivered through mail-in applications or discounts at the point of purchase through a province-wide network of distribution partners.

As in 2015, supported measures include lighting; heating, ventilation and air conditioning (HVAC); adjustable speed drives for motors; refrigeration; compressed air; food service and hospitality equipment; agricultural and food processing equipment; and IT technologies. Supported measures will continue to change as the market transforms and more efficient technologies are available. For example, in 2016, ENS expects to begin offering rebates for pumping technologies employing electronically commutated motors.

The objectives of this program are to:

- Raise customer awareness of energy efficient products;
- Encourage the use of energy efficient products in the design of new facilities and retrofits;
- Increase the market penetration of supported technologies; and
- Transform the market by raising the efficiency of standard practices.

Commercial, industrial, not-for-profit and institutional customers are eligible to participate in the program.

In 2016-2018, the Efficient Product Rebates (BNI) program will continue to leverage the support of qualified trade partners, expand on rebate offerings as the market transforms, and continue to work on ways to streamline the program.

3.2 Custom Incentives

The Custom Incentives program provides financial incentives to help commercial, industrial, not-for-profit and institutional customers reduce their electrical energy consumption and peak demand. Incentives are provided to help eligible participants complete energy audits and implement technical changes within their existing or new facilities.

The program is designed to accommodate a wide range of customer requirements. Delivery of the program is structured so customers may participate by incorporating energy-efficient options or designs at any phase of their project, regardless of their current level of energy management expertise. Project energy and peak demand savings are assessed on a case-by-case basis. The program supports engineering studies and installation of energy efficient measures for which operation and characteristics are not conducive to a prescriptive rebate structure. Eligible measures within the Custom Incentives program must save electrical energy and vary based on custom applications. Measures may include energy efficiency upgrades to existing or new compressed air, refrigeration, heating, cooling, and ventilation systems as well as other technologies not offered through other ENS programs. ENS also intends to offer feasibility study support, incentives and financing for cogeneration projects that are not participating in the Province's Community Access Feed-In Tariff (COMFIT) program. Supported measures are categorized in the following ways:

- New or replacement-on-burnout: intended for equipment replacement, new construction and renovation and expansion, by which the program can result in higher efficiency choices than would otherwise have been purchased;
- Discretionary retrofit: efficient components intended to replace existing equipment before the end of its useful life as a cost-effective retrofit.

Technical and financial services supporting the above measures are intended to achieve the following:

- 1 • Provide rebates for initial scoping studies and incentives or technical assistance
- 2 towards detailed engineering assessments for specific retrofit projects at new or
- 3 existing facilities;
- 4 • Provide project financing through low- or no-interest repayable loans, or, where
- 5 available, other financing options to support the program;
- 6 • Direct program participants to qualified third-party sources of technical expertise;
- 7 • Promote the implementation of complex and innovative energy efficient technology
- 8 and designs in BNI facilities;
- 9 • Provide incentives for the use of best practices in commissioning existing building
- 10 systems; and
- 11 • Influence electrical energy conservation projects within Nova Scotia.

12
13 The implementation of energy efficiency measures is conducted by third parties or
14 qualified participant staff, as selected by the participant. The recruitment of participants
15 depends largely upon direct contact, referrals and networking among industry
16 professionals.

17
18 While all BNI customers will remain eligible to participate in the Custom Incentives
19 program, ENS will continue refinement of services for targeted retrofit and new
20 construction market segments. This is in alignment with ENS's customer-focused
21 approach, where custom and prescriptive services can provide a unique solution for the
22 needs of specific types of participants. Targeted markets could include retail services,
23 schools, universities, small-large commercial buildings and industrial facilities.

24
25 The New Construction component of the Custom Incentives program is expected to
26 continue providing participants with financial and technical support to design and build
27 efficient facilities. ENS will explore the promotion of a cost-effective structured
28 commissioning process for new buildings. A structured commissioning process would
29 offer technical support and guidance for participants who are interested in
30 commissioning their new building to ensure it operates as designed. Financing will be
31 made available as an incentive option for these participants. Additional implementation

1 incentives through the Custom Incentives and Efficient Products Rebates programs will
2 be available for measures that qualify but that are not supported by the New
3 Construction Program.

4
5 The Custom Incentives program will continue to provide offerings tailored for market
6 segments and targeted end uses such as the following:

- 7 • Retro-commissioning;
- 8 • Compressed air system optimization;
- 9 • Support for Energy Management Information Systems (EMIS), which are
10 performance management tools that allow organizations to monitor and analyze their
11 energy usage;
- 12 • Strategic Energy Management (SEM), which provides organizations with a
13 comprehensive approach to energy management through continuous business
14 process and energy performance improvements, along with organizational culture
15 change;
- 16 • Onsite Energy Manager (OEM) service, which places a trained technical energy
17 manager at a customer's workplace in order to have a dedicated person for the
18 development of energy management plans and to facilitate participation in ENS
19 programs; and
- 20 • Employee engagement.

21
22 ENS also expects to continue developing services for new market segments, recruiting
23 additional trade partners and building expertise through program staff training as
24 required.

25 26 **3.3 Direct Installation**

27
28 The Direct Installation program is designed to assist small to medium-sized businesses
29 reduce their energy consumption ~~with turnkey solutions identified through a no-charge~~
30 ~~assessment.~~ through access to no-charge energy audit services and financial incentives for

energy-efficient technologies. Changes to the program allow customers to work with a contractor of their choice to implement energy efficiency upgrades. ENS has developed an Efficiency Partner Network, which provides customers with a list of qualified contractors in their area; however, customers are not limited to hiring from this list. ~~Direct Installation is delivered through contracted Delivery Agents that manage product procurement, product installation, and disposal and recycling of removed products. The total project cost is shared with the customer, with the option for approved customers to finance their portion for up to 24 months of interest-free payments on their power bills.~~

Typical customers of the program are small offices, retail shops, convenience and grocery stores, service stations, restaurants, lodgings, non-profit and community organizations, churches, cafeterias, pharmacies, bakeries and farms. Because the program targets smaller customers, many of which are independent operations with small staff complements, much of the value of the service ~~is provided through the initial assessment and direct installation. Owners and managers do not need to devote time to, or develop expertise in, understanding their facilities' energy uses and options for the installation of more efficient technology, making this support a key offering for this program~~will be provided through the initial energy audits and access to the new Efficiency Partner Network.

In 2016-2018, supported measures are expected to be largely consistent with the Efficient Product Rebates (BNI) Program. Relevant examples of measures include lighting technologies, HVAC equipment, refrigeration equipment, food service and occupancy controls; electric hot water tank~~hospitality equipment, as well as agricultural and pipe insulation; various water saving devices; heat pumps and hot water heat pumps; outdoor air economizers; and electronically commutated motors. Additional measures may be offered based on research and changing market conditions over the time period~~food processing equipment.

In 2016-2018, ENS will continue its evolution of the Direct Installation program to meet changing market demands. ~~Delivery of the program is expected to shift away from a~~

1 | ~~smaller set of contracted Delivery Agents to a broader group of eligible contractors who~~
2 | ~~will provide the turnkey solutions to eligible customers. Such changes~~This will provide
3 | access to more products to meet a variety of needs and support the ongoing development
4 | of industry capacity.
5 |

4. ENABLING STRATEGIES

Enabling Strategies are essential to ensure that ENS is able to increase awareness about energy efficiency, evolve services, and provide information and tools needed by Nova Scotians to make informed energy choices. This, in turn, drives program participation and fosters market transformation. Enabling Strategies include the following categories:

- Education and Outreach;
- Development and Research; and
- Other Enabling Strategies:
 - o Property-Assessed Clean Energy (PACE) Financing Support;
 - o Working with Governments;
 - o Capacity Building; and
 - o Regulatory Affairs.

Enabling Strategies have three key objectives:

1. To increase awareness and education of DSM programs and services, which is key to driving participation in energy efficiency activities;
2. To evolve DSM services through innovation and improve delivery of these services to Nova Scotians; and
3. To drive market transformation.

It is through Enabling Strategies that ENS is able to conduct activities that help to increase its overall efficiencies. As stated in the 2015 DSM Resource Plan, examples of cost efficiencies identified through research for the purposes of evolving DSM services include market research for optimal incentives for the Appliance Retirement service and the attribution of energy savings for participants in the Home Energy Assessments service who did not receive rebates. Other efficiencies are also created through Enabling Strategies activities. For example, through the LED Holiday Light Exchange, ENS achieves a small amount of energy savings from an outreach-based activity.

1
2 It is through Enabling Strategies that ENS will continue to develop innovative and cost-
3 efficient ways in which to deliver on its DSM targets. Examples outlined below include a
4 continued commitment to financing as a complement to tradition incentives; ongoing
5 work to support codes and standards development; and initiating market transformation
6 activities related to building construction, called Passive House. These initiatives are
7 planned within an average investment that was evaluated at, or lower than, that of
8 comparison jurisdictions in 2013¹, and has been reduced further for the 2016 to 2018
9 period in consideration of short-term affordability concerns. ENS remains committed,
10 however, to the important results achieved through its Enabling Strategies activities and
11 is of the position that, while it understands the need for short-term affordability
12 considerations, increasing Enabling Strategies levels would help the organization achieve
13 higher DSM results in the longer term.
14

15 **4.1 Education and Outreach**

16

17 The complexity of the electricity system means that many concepts and terms are not
18 familiar or accessible to most Nova Scotians. The concept of energy efficiency is equally
19 challenging to communicate effectively. Nova Scotians are more likely to embrace and
20 adopt energy-efficient behaviours if they understand the value of energy efficiency to
21 their own interests, to those of their communities and to the broader economy. As such,
22 reaching out to Nova Scotians through Education and Outreach is a critical component of
23 DSM efforts. Understanding the benefits of something intangible like energy efficiency is
24 complex and takes time. This, along with the continual emergence of new technologies,
25 changes in service delivery to improve programs and increase accessibility, and the
26 cementing of energy efficiency as a part of Nova Scotia's electricity supply per the
27 *Electricity Efficiency and Conservation Restructuring (2014) Act*, make education and

¹ Econoler, "Enabling Strategies Evaluation Final Report", February 21, 2014, pages 5 and 6

1 outreach activities as relevant and important now as they were when DSM was first
2 introduced in Nova Scotia in 2008. The advancements made in public awareness of ENS
3 (unaided awareness was at 35 percent in 2014) demonstrate that Enabling Strategies
4 activities are having an impact on ENS's results. However, these same results also
5 demonstrate that opportunities remain to reach additional Nova Scotians.

6
7 The objectives of Education and Outreach activities are to effectively communicate what
8 energy efficiency is and the individual and collective benefits it provides, with an
9 objective of achieving increased levels of participation in DSM programs. For example,
10 as shown in ENS's rate and bill impact analysis, all NS Power customers benefit over the
11 long-term from DSM programs, and participants benefit to a greater extent. However, the
12 rate and bill impact model is a technical analysis that does not lend itself to quick
13 understanding: "selling" intangible benefits is not easy, but it is required in order to
14 maintain and increase uptake in programs.

15
16 Education and Outreach strategies for 2016 through 2018 will build on existing outreach
17 efforts, services, research, and the continual feedback collected from Nova Scotians. This
18 feedback includes customer and other input collected through surveys and at
19 presentations, speeches, trade shows, online dialogue and experience gained through past
20 DSM initiatives.

21
22 Areas of focus will include:

- 23
24 • Educating customers about energy efficiency through efforts to make it
25 tangible;
26 • Educating customers on the value and collective and individual benefits
27 provided by energy efficiency;
28 • Educating and engaging students and the education industry on energy and
29 the role of efficiency;
30 • Educating customers on ways to conserve energy, reduce peak demand,
31 achieve cost-effective energy savings and lower their electric utility bills;

- Increasing public awareness of the value of participating in DSM programs;
- Enabling and encouraging the adoption of energy efficiency as a social norm through a focus on both individual and community-based commitments to energy efficiency;
- Connecting customers to relevant DSM programs and services; and
- Learning from our customers – ensuring their experiences and advice are incorporated to improve programs and services.

The following components may be used to support this strategy:

- Engaging Nova Scotians on the ENS website with information, tools and calculators;
- Engaging Nova Scotians through social media (Facebook, Twitter, YouTube, LinkedIn) to drive awareness of energy efficiency;
- Electronic newsletters emailed to past participants;
- Advertising to increase awareness and understanding of programs and services offered by ENS;
- Continuing to build the Green Schools program, to supplement learning and educate teachers and students about energy efficiency to help build an energy-efficient culture in Nova Scotia;
- Making inroads into the education system with a goal of building energy efficiency into the P-12 curriculum;
- Working with post-secondary education institutions to build awareness of the opportunities and alignment of energy efficiency across all disciplines;
- Public speaking and presentations on energy efficiency;
- Stories in the media on energy efficiency; and
- Additional activities as opportunities arise.

Efficiency Nova Scotia staff will work with delivery agents, industry partners and educational institutions to develop, manage and deliver education and outreach programs.

4.2 Development and Research

Efficiency Nova Scotia uses evidence-based decision-making to improve program design and delivery and to guide business strategy. This approach ensures ENS is making the best possible decisions for evolving business requirements and reduces the risk and cost of making incorrect assumptions. ENS will invest in two areas of Development and Research:

1. Research and development initiatives to support the evolution of DSM Resource Plans and DSM programs;
2. Development activities that improve delivery of services and information to Nova Scotians.

4.2.1 Primary and Secondary Research

Innovation is critical to ensure ENS programs reflect current technologies and consumer behaviour patterns. As such, an important focus of research will be to explore new opportunities for DSM programs and services. The knowledge and experience gained through development and research activities are intended to increase the effectiveness of all DSM programs and develop new DSM opportunities for future years. ENS will use primary and secondary research, and partner with other DSM experts, to obtain evidence-based insights into business opportunities and risks. Specific research initiatives ~~will~~could include:

- Research and development work related to the development of the 2019-2021 DSM Resource Plan;
- Examining motivations and barriers to participation;
- Examining trends and preferences in energy consumption behaviour;

- Researching opportunities from other jurisdictions;
- Researching new measures, of which demand-response and/or demand-control measures are expected to be included;
- Piloting new programs and changes to existing programs, of which results from ENS's expected research into demand-response and/or demand-control options may be included, with savings expected to be tracked under Existing Residential or New Residential programs as applicable; and
- Testing alternative marketing approaches;
- Undertaking a Small Business Energy Study in consultation with the Small Business Advocate; and
- Researching and making recommendations on a more formalized methodology for determining incentives, per the UARB's Decision.

4.2.2 Development of DSM Information Management and Program Execution Systems

Changes to enhance the customer experience through Programs 2.0 will require an information management system that can easily track and provide insight into all relevant customer interactions. This system will:

- Provide a better service experience for Nova Scotians (interactions with ENS will be improved through enhanced tracking of customers' historical interactions);
- Ensure ENS is communicating the right message at the right time to customers (better customer life-cycle messaging and marketing); and
- Streamline information management and reporting (easier access to information).

The system is expected to create efficiencies for program delivery, research, and marketing purposes. Efficiencies are expected to be in the form of reduced time spent on data processing and reporting, a reduction in external consultants required to develop reporting capabilities, and improved program uptake by using database marketing techniques. The changes will also enhance ENS's tracking of customer data for the purposes of its rate and bill impact analysis, per Synapse's recommendations through the

1 2013-2015 DSM Plan process. Due to the enhanced tracking, which is expected to
2 automatically remove duplication of customers across programs, the new system is
3 expected to result in efficiencies to the manual process ENS must complete for the filing
4 of its analysis. ENS will continue to invest in these systems throughout 2016-2018,
5 building on improvements completed in previous years.

7 **4.3 Other Enabling Strategies**

8 **4.3.1 Property-Assessed Clean Energy (PACE) Financing**

9
10 ENS recognizes a lack of upfront capital can be a barrier to customers adopting energy
11 efficiency measures. For this reason, financing DSM activities is a complementary
12 incentive structure to standard rebates. While uptake in existing financing initiatives has
13 been historically low (the median participation rate in financing programs across North
14 America was calculated at less than 0.5% in 2011)², ENS is continuing to support
15 financing initiatives within its Residential and BNI programs.

16
17 To further these initiatives, ENS will provide support and a suite of tools for
18 municipalities to use in developing and administering Property-Assessed Clean Energy
19 (PACE) financing programs. Such programs allow participants to pay for energy efficient
20 upgrades through an add-on to their property taxes. In 2016-2018, ENS will continue its
21 work in supporting municipalities to launch and administer PACE programs. As the
22 service is administered by the municipalities, the support provided by ENS is an Enabling
23 Strategy, rather than a program or service provided by ENS. Individual participants in the
24 municipalities' PACE programs would be eligible to enroll in ENS programs, under
25 which related energy savings would be recognized.

² American Council for an Energy Efficiency Economy, 2011. *What have we learned from energy efficiency financing programs?*

4.3.2 Working with Governments

In 2016-2018, ENS will continue to work to advance discussion, development and implementation of energy efficiency related codes and standards. This will include discussions with provincial and federal stakeholders and will provide relevant market information to governments for decision-making purposes. In addition, ENS will participate in the technical development of energy efficiency related product standards through work with organizations such as the Canadian Standards Association.

4.3.3 Capacity Building

ENS will continue to foster industry capacity-building, focusing efforts in several areas, including enhancing existing training and quality assurance for ENS partners and contractors and providing marketing support for delivery partners and contractors.

ENS will continue promoting new home building standards and will explore opportunities to advance the introduction of the Passive House concept in Nova Scotia. The Passive House concept originated in Germany and has evolved for more than 15 years, becoming widely adopted in Europe as the top standard in energy-efficient buildings. The standard applies to all buildings, whether residential, commercial or institutional and incorporates energy efficiency engineering concepts of design, components, and construction to create buildings that function as comfortable, highly efficient units requiring minimal heating and cooling systems. For example, using Passive House design, heating an average-sized, single-family home would cost less than \$500 per year.

To advance the Passive House concept in Nova Scotia, ENS intends to work with designers, architects, engineers, builders, component manufacturers, community colleges, universities, government, and stakeholders to educate and begin developing the capacity to incorporate the concept in newly constructed and retrofitted buildings.

1
2 **4.3.4 Regulatory Affairs**
3

4 As approved in the 2015 DSM Resource Plan, Regulatory Affairs initiatives outside of
5 specific research conducted for DSM Resource Plans or Potential Studies are categorized
6 as Enabling Strategies. As with other Enabling Strategies, regulatory activities lay the
7 groundwork for future energy savings: without approvals for ongoing activities and
8 changes to existing ones, future savings would not be possible. These activities include
9 UARB costs, DSM Advisory Group and stakeholder consultation work, as well as legal
10 work relating to regulatory initiatives.