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# FIRST NATIONS COMMUNITY BUILDING RETROFIT PROGRAM

## PROGRAM REQUIREMENTS

### 1. PROGRAM DESCRIPTION

The First Nations Community Building Retrofit Program (the “**Program**”) helps First Nation communities improve the energy efficiency of their Band-Owned Facilities, and manage their energy use more effectively.

Approved energy efficiency upgrade (“**Eligible Measures**”) costs will be reimbursed to Band Councils within Eligible Communities for qualified on-reserve Band-Owned Facilities that are non-residential, for up to \$330,000 (before applicable taxes) per community.

Potential energy efficiency upgrades are defined in Sections 3.4 and 3.5, and eligible projects for install are informed by the Energy Assessment as outlined in Section 6.

The Program Participant can choose to pursue Eligible Measures identified by the Energy Assessment for either a turn-key installation provided by the Service Provider (the “**Direct Install Track**”) or on community installed Projects (the “**Community Install Track**”).

This Program is offered and administered in the Province of Ontario by the Independent Electricity System Operator (the “**IESO**”) and its Service Provider(s) under the 2021-2024 Conservation and Demand Management Framework.

These Program Requirements are effective as of February 22, 2024.

### 2. PROGRAM OFFER

The Program offers the following incentives, at no cost to the Participant:

- (a) benchmarking analysis and Benchmark Report for all Band-Owned Facilities;
- (b) Energy Assessments on up to 15 facilities chosen by the Participant from the Benchmark Report;
- (c) a Site-Visit Report containing a list of Project opportunities, which are Eligible Projects for selection by the Band Council;

- (d) a Detailed Engineering Study defining the technical aspects of Community Install Track opportunities (if selected);
- (e) Project Plan, which outlines the costs and schedule for installation for each selected Project;
- (f) funding of up to \$330,000 for approved Projects delivered through either of:
  - (i) Direct Install Track
  - (ii) Community Install Track
  - (iii) Up to \$10,000 (from the \$330,000) can be used for a Detailed Engineering Study (DES) for eligible Community Install Track Projects
- (g) a Final Report to the Band Council detailing:
  - (i) Project costs, Project timelines, installed Eligible Measures and estimated annual electricity savings for all implemented Projects
  - (ii) Any opportunities that were not pursued but may be eligible through additional Save on Energy programs; and
- (h) support for up to one (1) year after installation of Eligible Measures, including providing troubleshooting assistance and warranty information.

Appendix 1 outlines the Eligible Measures offered under the Direct Install Track.

### **3. PROGRAM ELIGIBILITY CRITERIA**

#### **3.1 PARTICIPANT ELIGIBILITY**

A Participant must:

- (a) be an on-reserve Band Council for an Eligible Community listed in Appendix 2;
- (b) have the rights and authority in respect of a Facility in order to have the Eligible Measures installed; and
- (c) agree to all the terms and conditions of the Participant Agreement.

#### **3.2 FACILITY ELIGIBILITY**

In respect of both the Direct Install Track and the Community Install Track, an eligible Facility must:

- (a) be located within a reserve of a First Nation that is an Eligible Community;
- (b) be located on Band-owned land and operated for the use and benefit of the community;
- (c) be connected to the IESO-controlled grid; and
- (d) have a primary use that is non-residential (for greater certainty, Common Areas within a residential Multi-Family Building are considered eligible Facilities).

In addition to satisfying the eligibility criteria of items (a)-(d) in the paragraph above, in respect of the Community Install Track, an eligible Facility must be:

- (e) a water treatment facility;
- (f) a waste-water treatment plant;
- (g) an arena;
- (h) street lighting; or
- (i) a Facility that is otherwise approved by the IESO in writing as an eligible Facility for the purposes of the Community Install Track.

### **3.3 PROJECT ELIGIBILITY**

A Project must:

- (a) be comprised of one or more Eligible Measures; and
- (b) be identified by the Energy Assessment and selected by the Band Council from the Site-Visit Report.

### **3.4 DIRECT INSTALL TRACK MEASURES ELIGIBILITY**

An Eligible Measure must:

- (a) be located in a Facility;
- (b) not include:
  - (i) measures that are pilot or demonstration projects, not generally commercially available or otherwise unproven;
  - (ii) subject to guidance/approval by the IESO, replacement of existing equipment, which previously received funding through a program or initiative undertaken by the Government of Ontario or by the IESO under the Interim Framework or the 2021-2024 Conservation Demand Management Framework

- (c) have a project completion date of no later than 12 months after the Project Plan is approved; and
- (d) be listed in Appendix 1.

Eligible Costs for each Direct Install means the Measure Cost set out in the Appendix 1 - Eligible Measures List.

### **3.5 COMMUNITY INSTALL TRACK MEASURES ELIGIBILITY**

An Eligible Measure must:

- (a) be located in a Facility;
- (b) not include:
  - (i) measures that are pilot or demonstration projects, not generally commercially available or otherwise unproven;
  - (ii) replacement of existing equipment that was previously incented; or
  - (iii) measures which have previously received funding through a previous IESO or former Ontario Power Authority-funded program unless evidence supports the installation of measures in a different area of the Facility;
- (c) have a project completion date of no later than 12 months after the Project Plan is approved;
- (d) have savings comprising the following:
  - (i) Peak Demand Savings of 1 kW and/or annual Energy Savings of at least 2,000 kWh; and
  - (ii) projected delivery of such Peak Demand Savings and/or Energy Savings for a minimum period of 48 months from the project completion date of the Project; and
- (e) be subject to a Detailed Engineering Study.

### **3.6 ELIGIBLE COSTS FOR THE COMMUNITY INSTALL TRACK**

Community Install Track Eligible Costs must:

- (a) be directly related to procurement and implementation, and be limited to:
  - (i) costs of the equipment purchased;

- (ii) costs of labour for equipment installed by a Third-Party Community Install Contractor;
  - (iii) costs of the Detailed Engineering Study;
  - (iv) Third-Party Community Install Contractor Project management costs;
  - (v) shipping, delivery, duties and other costs applicable to equipment delivery to the Facility;
  - (vi) costs to prepare the M&V Plan;
  - (vii) costs to dispose or decommission the replaced equipment;
  - (viii) costs of inspections, as may be required by laws and regulations;
  - (ix) costs to conduct M&V activities and prepare the M&V Saving Report; and
- (b) not comprise:
- (i) costs of the Participant's labour, service, administration or overhead that are not incurred by a Third Party Community Install Contractor;
  - (ii) financing costs including, but not limited to, costs associated with financing, leasing and lease-to-own procurement arrangements and such other financing costs associated with leasing or borrowing capital;
  - (iii) insurance costs;
  - (iv) costs associated with post-installation work related to equipment maintenance or repair;
  - (v) costs of spare parts, spare equipment or other inventories;
  - (vi) costs of purchase or lease of tools for equipment installation;
  - (vii) HST; and
  - (viii) Third-Party Contributions, including but not limited to any costs already covered by funding or grants from the energy ratepayers or taxpayers in the Province of Ontario or Government of Canada, or rebates from manufacturers, wholesalers or other supply chain participants.

## 4. APPLICATION REQUIREMENTS

An application is considered complete and eligibility for the Program is met if:

- (a) the Participant signs the Participant Agreement;

- (b) the Participant provides a signed Band Council Resolution;
- (c) the Participant identifies a Community Coordinator to liaise between the Participant and the Service Provider, and who will be responsible for collecting benchmark data, assisting with scheduling and other logistics within community and coordinating with the Participant in supporting program decisions. The Community Coordinator may be empowered by the Band Council (through a Band Council Resolution) to make project and investment decisions.
- (d) the Participant commits to provide benchmark data within 20 Business Days of the IESO countersigning the Participant Agreement.

## **5. ENERGY BENCHMARK REPORT**

For all Eligible Facilities, the Participant will provide the following benchmark data to the Service Provider within 20 Business Days of signing the Participant Agreement:

- (a) basic Facility information including Facility type and primary function
- (b) annual electricity consumption (kWh) and cost (at least 12 continuous months that are most representative of normal use)
- (c) annual heat fuel consumption, for each fuel type, and cost (at least 12 continuous months that are most representative of normal use)
- (d) Gross Floor Area (GFA) in square-foot or metre

The Participant will select up to 15 Eligible Facilities to receive an Energy Assessment, based on findings of the Benchmark Report.

## **6. ENERGY ASSESSMENT**

The purpose of the Energy Assessment, which includes a Site-Visit, is to identify potential energy-saving opportunities that will lead to an implemented Project. The Participant will choose up to 15 Facilities for further investigation via a facility site visit.

- (a) Pre-Site Visit Interview

The Participant and/or the Community Coordinator will consent to be interviewed by the Service Provider by phone to provide any relevant information for review in preparation for the Site-Visit, including:

- (i) historical activities, studies, audits or assessments related to energy consumption or energy efficiency

- (ii) known opportunities/energy efficiency measures
  - (iii) internal priorities and Project implementation processes
  - (iv) data availability (e.g. if access to metered data a problem)
  - (v) barriers to Project implementation
- (b) Site-Visit
- (i) ensure that the Service Provider has access to the Facilities that have been selected for a Site-Visit
- (c) Site-Visit Report
- (i) the Service Provider will prepare a Site-Visit Report with a list of Project opportunities for each Eligible Facility.
    - (1) the Base Case, including:
      - a. system description
      - b. estimated hours of operation of the system (hours/year)
      - c. estimated consumption of the system (kWh/year)
    - (2) the Energy Efficiency Case, including:
      - a. estimated annual electricity savings potential (kWh/year)
      - b. estimated electricity cost reduction (\$/year)
      - c. estimated Project costs (i.e., measure, shipping, storage, labour)
      - d. simple payback (without incentive)
      - e. estimated timeline (considering seasonal constraints)
  - (ii) additional details may include non-energy benefits, if applicable.
  - (iii) these opportunities are ranked by their attractiveness in their ability to reduce electricity consumption and bill savings to the community.

## 7. COMMUNITY INSTALL TRACK PROJECTS – DETAILED ENGINEERING STUDY REQUIREMENTS

For all Community Install Track Projects, a Detailed Engineering Study shall be completed by the Third-Party Community Install Contractor. The required deliverables from a Detailed Engineering Study shall include:

- (a) additional metered data, if applicable
- (b) additional measurements and measurement equipment (e.g. temperature, flow, pressure), if applicable
- (c) investigate additional energy savings measures, if applicable
- (d) source and specify equipment and controls for installation
- (e) the Base Case:
  - (i) detailed system description
  - (ii) estimated hours of operation of the system (hours/year), based on measured data
  - (iii) estimated consumption (based on measured data) of the system (kWh/year)
- (f) the Energy Efficiency Case:
  - (i) detailed energy efficiency case description
  - (ii) estimated Annual Electricity Savings Potential (kWh/year)
  - (iii) estimated Electricity Cost Reduction (\$/year)
  - (iv) estimated Project Costs including:
    - (v) all Eligible Costs listed in Section 3.6 (including quotes)
    - (vi) simple payback (without incentive)
    - (vii) estimated timeline (considering seasonal constraints)
- (g) M&V Plan
  - (i) the M&V Plan for Community Install Projects shall follow the protocols outlined in the *Measurement and Verification Guideline: Community Install Track Measures, First Nation Community Building Retrofit Program* attached in Appendix 3.



## 8. PROJECT PLAN

- (a) Based on the results of the Site-Visit Report, the Participant will choose either Direct Install Track and/or Community Install Track Projects, with a combined total cost of up to \$330,000.
- (b) For each Project chosen by the Participant, the Project Plan will include the above information from the Energy Assessment and will include any information from Detailed Engineering Studies, if applicable.
- (c) The Participant must approve the Project Plan.

## 9. INSTALLATION OF MEASURES

- (a) Direct Install Track
  - (i) The Participant shall provide consent to the Service Provider to install some or all of the Eligible Measures in Appendix 1.
- (b) Community Install Track
  - (i) The Participant shall contract with the appropriate Third-Party Community Install Contractor to install any Community Install Track Projects identified and approved in the Project Plan.
  - (ii) The Third-Party Community Install Contractor shall undertake the M&V activities and prepare the M&V Saving Report as outlined in the M&V Plan for all completed Community Install Track Projects.

## 10. PROGRAM SPECIFIC DEFINITIONS

The following terms have the meaning stated below when used in these Program Requirements:

***Application*** means an application for participation in the Program, in a form approved by the IESO, submitted by a Participant for approval.

***Band Council*** means the collective of First Nation community officials responsible for the governance and administration of band affairs.

***Band Council Resolution*** means a record of a decision made by a majority of the councilors (including the chief) of a band council (band as defined by the *Indian Act*, RSC 1985, c I-5) at a duly convened meeting of the council.

***Band-Owned Facility*** or ***Band-Owned Facilities*** means a facility, or facilities, that is/are located on Band-owned land and operated for the use and benefit of the community.

***Base Case*** means the Existing Equipment prior to the installation of the Eligible Measure(s) at an Eligible Facility.

***Benchmark Report*** means a report prepared by the Service Provider based on the measuring of a Band-Owned facility's energy use, compared to the average for similar buildings, allowing the Participant to understand their building's relative energy performance, and help identify opportunities to conserve energy.

***Common Areas*** mean non-residential and non-exclusive common spaces within a Multi-Family Building. For greater certainty this includes but is not limited to hallways, foyers, laundry rooms and recreation rooms.

***Community Coordinator*** means a community member responsible to liaise with the IESO to support Program delivery services. Specifically, the Community Coordinator will support with the collection of benchmark data, assisting with coordination of Program logistics within the community and supporting Participants in key Program decision processes (e.g. selection of facilities for Energy Assessments). The Community Coordinator must have capacity to support the Program. The Band Council has the option to empower the Community Coordinator to make project and investment decisions through a Band Council Resolution.

***Community Install Track*** means the community install track of the Program.

***Community Install Track Eligible Costs*** means the costs associated with Community Install Track Projects for which the Participant is entitled to reimbursement, received as flow-through funding from the Service Provider.

***Detailed Engineering Study*** means the study completed by the Third-Party Community Install Contractor that defines the technical aspects of a Project (including measures, Energy Savings, costs and Project schedule) based on detailed system drawing measurements (e.g. temperature, pressure, operating hours, etc.) and equipment specifications (e.g. thermal rating, operating hours, etc.) required for all Community Install Track projects.

***Direct Install Track*** means the direct installation track of the Program.

***Eligibility Criteria*** means the criteria in Section 3.

***Eligible Community*** means a First Nation community listed in Appendix 2.

***Eligible Facility*** means a Facility that meets the criteria in Section 3.2.

***Eligible Measures*** means the list of Eligible Measures attached hereto as Appendix 1 and defined in Sections 3.4 and 3.5.

**Energy Assessment** means the process described in Section 6.

**Energy Efficiency Case** means the energy efficient equipment that replaces the existing equipment (i.e., the “Base Case”) under the new installed Eligible Measures in an Eligible Facility.

**Energy Savings** means the reduction of electricity consumption (kWh) attributable to the installation of an energy efficiency measure defined as Energy Efficiency Case relative to the initial case defined as Base Case. Specifically, for each track of the Program, Energy Savings are determined as:

- (a) For Direct Install Track, the Energy Savings are calculated based on the deemed unit savings as provided in Appendix 1.
- (b) For Community Install Track, the Energy Savings are determined by calculating the energy consumption reduction due to the Energy Efficiency Case relative to the Base Case, as per section *4.1.3 Step 3: Calculate Gross Verified Savings* in the EM&V Protocols.

**Evaluation, Measurement and Verification (EM&V) Protocols** means the IESO’s guide for a robust evaluation of Conservation and Demand Management (“**CDM**”) activities in Ontario, including the identification of the practices required to evaluate, measure and verify Energy Savings and Demand Savings, as available on the [IESO website](#) and updated from time to time.

**Existing Equipment** means the equipment to be replaced by an Eligible Measure(s).

**Facility** means the building, premises, or part thereof, located on Band-owned land and operated for the use and benefit of the community.

**Final Report** means a report prepared by the Service Provider for the Participant that summarizes the Participant’s participation in the Program.

**First Nation** means a “band” as defined in the *Indian Act*, RSC 1985, c I-5.

**List of Project Opportunities** means the list of eligible Projects identified in the Energy Assessments for selection by the Band Council.

**Measurement and Verification Plan** or **M&V Plan** means the practices required to measure and verify Energy Savings and Peak Demand Savings associated with installed measures.

**Measurement and Verification Saving Report** or **M&V Saving Report** means a measurement and verification document containing the analysis by the Third-Party Community Install Contractor of the quantified Energy Savings and Peak Demand Savings delivered by the Measure or Measures included in a Community Install Track Project, as the case may be, during the M&V Reporting Period specified by the M&V Plan.

**Multi-Family Building** means a Facility that houses multiple residential occupant units. For greater certainty, a Multi-Family Building Facility may be non-profit rental housing, private rental housing or owner-occupied.

**Participant** means, in respect of the Program, a Band Council within an Eligible Community who is a party to a Participant Agreement.

**Participant Agreement** means, in respect of the Program, any one or more agreements or terms and conditions that a Participant must enter into or agree to be bound by in order to participate in such Program.

**Peak Demand Savings** means the average reduction of electric load (kW) during the peak demand period as defined in *section 4.1.3 Step 3: Calculate Gross Verified Savings* in the EM&V Protocols, attributable to the installation of an energy efficiency measure. Specifically, for each track of the Program, Peak Demand Savings are determined as following:

- (a) For Direct Install Track, the Peak Demand Savings are calculated based on the deemed unit savings as provided in the "Eligible Measure List" within the Program Requirements attached hereto as Appendix 1.
- (b) For Community Install Track, the Peak Demand Savings shall be determined by calculating the peak demand reduction due to the Energy Efficiency Case relative to the Base Case as per *section 4.1.3 Step 3: Calculate Gross Verified Savings* in the EM&V Protocols.

**Pre-Site Visit Interview** means a phone interview by the Service Provider of the Community Coordinator to prepare for the Site-Visit.

**Program** means the IESO's First Nation Community Building Retrofit Program.

**Project** means one or more Eligible Measures that are expected to be implemented at a Participant's facility pursuant to the approved Project Plan.

**Person** means a natural person, firm, trust, partnership, association, unincorporated organization, limited partnership, company or corporation (with or without share capital), joint venture, sole proprietorship, governmental authority or other entity of any kind.

**Project Plan** means a plan for each Project as described in Section 8.

**Save on Energy** is the brand mark for a suite of energy efficiency programs offered by the IESO.

**Service Provider** means the party under contract with the IESO which provides program delivery services for the Program.

**Site-Visit** means a facility walk-through, as further described in the Program documentation.

***Site-Visit Report*** means a report prepared by the Service Provider based on the findings of the Energy Assessment.

***Third-Party Community Install Contractor*** means a party that is not the IESO or the Service Provider hired by the Band Council to pursue Community Install Track activities, specifically Detailed Engineering Studies and the installation of measures for Community Install Track projects.

***Third-Party Contributions*** means any financial or other contribution (including the value of contributions in kind) towards the Community Install Track Eligible Costs of a Project from or by any Person other than the Participant or the IESO

## APPENDIX 1 – DIRECT INSTALL ELIGIBLE MEASURES

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	4-Pin LED Replacement Lamp (Vertical) = 10W Minimum 900 Lumen Output Lamp	\$19.00	41	0.0059
Lighting	4-Pin LED Replacement Lamp (Horizontal) ≤ 10W Minimum 900 Lumen Output Lamp	\$19.00	32	0.0046
Lighting	2' x 4' Linear Ambient Luminaire =6000 Lumen Output	\$277.70	411	0.0588
Lighting	1' x 4' Integral LED Troffer, 2' x 2' Integral LED Troffer or 4' Linear Ambient Luminaire 8 ≥1500 Lumen Output (2 Lamp replacement)	\$160.00	37	0.0053
Lighting	1' x 4' Integral LED Troffer, 2' x 2' Integral LED Troffer or 4' Linear Ambient Luminaire 8 ≥1500 Lumen Output (3 Lamp replacement)	\$160.00	103	0.0147
Lighting	1' x 4' Integral LED Troffer, 2' x 2' Integral LED Troffer or 4' Linear Ambient Luminaire 8 ≥1500 Lumen Output (4 Lamp replacement)	\$160.00	161	0.0231
Lighting	2' x 4' Integral LED Troffer or 4' Linear Ambient Luminaire ≥3000 Lumen Output (3 Lamp replacement)	\$198.00	66	0.0094

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	2' x 4' Integral LED Troffer or 4' Linear Ambient Luminaire $\geq 3000$ Lumen Output (4 Lamp replacement)	\$198.00	124	0.0178
Lighting	1' x 4' Integral LED Troffer, 2' x 2' Integral LED Troffer or 4' Linear Ambient Luminaire $\geq 1500$ Lumen Output (2 Lamp replacement)	\$160.00	136	0.0194
Lighting	1' x 4' Integral LED Troffer, 2' x 2' Integral LED Troffer or 4' Linear Ambient Luminaire $\geq 3000$ Lumen Output (2 Lamp replacement)	\$198.00	98	0.0141
Lighting	3 lamp LED T5 High Bay $\leq 28W$ (Nominal Lamp Wattage) Minimum 3200 Lumen Output Per Lamp	\$80.00	692	0.0989
Lighting	4 lamp LED T5 High Bay $\leq 28W$ (Nominal Lamp Wattage) Minimum 3200 Lumen Output Per Lamp	\$107.00	1197	0.1711
Lighting	6 lamp LED T5 High Bay $\leq 28W$ (Nominal Lamp Wattage) Minimum 3200 Lumen Output Per Lamp	\$160.00	906	0.1296
Lighting	8' Linear Ambient Luminaire $\geq 9000$ Lumen Output	\$422.05	587	0.0839
Lighting	Candelabra (E12 or E26) $\leq 5W$ Minimum 250 Lumen Output	\$12.50	126	0.0180

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	Candelabra (E12 or E26) ≤ 8W Minimum 400 Lumen Output	\$14.50	155	0.0222
Lighting	Filament Lamp ≤ 7W Minimum 250 Lumen Output	\$13.10	111	0.0158
Lighting	Filament Lamp ≤ 9W Minimum 500 Lumen Output	\$13.10	224	0.0321
Lighting	Globe Lamp ≤ 6W Minimum 250 Lumen Output	\$12.60	114	0.0163
Lighting	High Bay LED (>139W to ≤175W)	\$402.50	873	0.1249
Lighting	LED A Lamp ≤ 9W Minimum 450 Lumen Output	\$5.23	171	0.0245
Lighting	LED A Shape ≤ 11W Minimum 800 Lumen Output	\$5.91	276	0.0394
Lighting	LED A Shape ≤ 16W Minimum 1200 Lumen Output	\$14.31	326	0.0467
Lighting	LED BR20 ≤ 7W Minimum 500 Lumen Output	\$12.50	162	0.0232
Lighting	LED BR30 ≤ 12W Minimum 600 Lumen Output	\$13.00	209	0.0299
Lighting	LED BR30 ≤ 16W Minimum 800 Lumen Output	\$16.25	170	0.0244



CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	LED BR40 = 12W Minimum 600 Lumen Output	\$13.00	136	0.0195
Lighting	LED BR40 ≤ 19W Minimum 1100 Lumen Output	\$20.25	251	0.0358
Lighting	LED Exit Sign Retrofit Kit ≤3W	\$95.88	128	0.0146
Lighting	LED GU10 = 6W Minimum 250 Lumen Output	\$15.00	71	0.0102
Lighting	LED GU10 ≤ 8W Minimum 400 Lumen Output	\$13.00	128	0.0183
Lighting	LED MR16 ≤ 8W Minimum 400 Lumen Output	\$13.00	139	0.0198
Lighting	LED PAR16 ≤ 8W Minimum 400 Lumen Output	\$13.00	186	0.0266
Lighting	LED PAR20 ≤ 7W Minimum 500 Lumen Output	\$13.50	159	0.0227
Lighting	LED PAR30 ≤ 12W Minimum 600 Lumen Output	\$19.50	187	0.0268
Lighting	LED PAR38 ≤ 12W Minimum 600 Lumen Output	\$22.00	155	0.0221
Lighting	LED PAR38 ≤ 14W Minimum 800 Lumen Output	\$24.00	159	0.0227

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	LED PAR38 $\leq$ 19W Minimum 1100 Lumen Output	\$21.00	235	0.0336
Lighting	Outdoor Wall-Mounted Area LED Fixture (Area Light) $\leq$ 60W and $>$ 2,850 Lumens	\$268.00	481	0.0051
Lighting	Outdoor Wall-Mounted Area LED Fixture (Flood) $\leq$ 120W and $>$ 5,700 Lumens	\$440.45	663	0.0071
Lighting	Outdoor Wall-Mounted Area LED Fixture (Flood) $\leq$ 30W and $\geq$ 400 Lumens	\$286.00	249	0.0027
Lighting	Outdoor Wall-Mounted Area LED Fixture (Flood) $\leq$ 60W and $>$ 2,850 Lumens	\$448.50	503	0.0054
Lighting	Outdoor Wall-Mounted Area LED Fixture (Wall Pack) $\leq$ 120W and $>$ 5,700 Lumens	\$441.60	691	0.0074
Lighting	Outdoor Wall-Mounted Area LED Fixture (Wall Pack) $\leq$ 60W and $>$ 2,850 Lumens	\$317.40	575	0.0061
Lighting	Outdoor Wall-Mounted Area LED Fixture (Wall Pack) $\leq$ 30W and $\geq$ 400 Lumens	\$235.75	236	0.0025
Lighting	Type A LED T8 (1 lamp) $\leq$ 12W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$17.42	50	0.0072
Lighting	Type A LED T8 (2 lamp) $\leq$ 12W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$30.15	92	0.0132

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	Type A LED T8 (3 lamp) ≤12W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$45.20	130	0.0186
Lighting	Type A LED T8 (4 lamp) ≤12W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$62.40	154	0.0220
Lighting	Type A LED T8 (1 lamp) =15W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$18.40	34	0.0049
Lighting	Type A LED T8 (2 lamp) =15W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$32.00	66	0.0095
Lighting	Type A LED T8 (3 lamp) =15W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$47.50	94	0.0134
Lighting	Type A LED T8 (4 lamp) ≤15W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$63.50	115	0.0165
Lighting	Type B LED T8 (1 lamp) =20W (Nominal Lamp Wattage) Minimum 2000 Lumen Output Per Lamp	\$44.85	70	0.0101
Lighting	Type B LED T8 (1 lamp) ≤14W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$43.70	129	0.0185

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
Lighting	Type B LED T8 (2 lamp) =20W (Nominal Lamp Wattage) Minimum 2000 Lumen Output Per Lamp	\$55.00	150	0.0215
Lighting	Type B LED T8 (2 lamp) ≤14W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$53.50	167	0.0239
Lighting	Type B LED T8 (3 lamp) =20W (Nominal Lamp Wattage) Minimum 2000 Lumen Output Per Lamp	\$71.00	49	0.0070
Lighting	Type B LED T8 (3 lamp) ≤14W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$70.00	190	0.0272
Lighting	Type B LED T8 (4 lamp) ≤14W (Nominal Lamp Wattage) Minimum 1500 Lumen Output Per Lamp	\$85.00	279	0.0400
Lighting	Type B LED T8 (4 lamp) ≤20W (Nominal Lamp Wattage) Minimum 2000 Lumen Output Per Lamp	\$87.00	239	0.0342
Lighting Control	Occupancy sensors - Ceiling/Wall Mount	\$250.70	351	0.0448
Lighting Control	Occupancy sensor - Switch Plate Mount	\$138.00	171	0.0218

CATEGORY	MEASURE NAME	MEASURE COST CAP	ENERGY SAVINGS (kWh)	PEAK SAVINGS (kW)
HVAC Control	Web Enabled Low-voltage Smart Thermostat	\$350.00	995	0.1890
HVAC Control	Web Enabled Line-voltage Smart Thermostat	\$195.00	186	0.001
HVAC	Window Air Conditioner (ENERGY STAR Qualified 6,000 – 7,999 BTU/hr)	\$320.00	42	0.026
HVAC	Window Air Conditioner (ENERGY STAR Qualified 8,000 – 9,999 BTU/hr)	\$535.00	59	0.036
HVAC	Window Air Conditioner (ENERGY STAR Qualified 10,000 – 12,000 BTU/hr)	\$740.00	77	0.047
Plug-load	Refrigerated Beverage Vending Machine Control	\$243.00	1,613	0.194
Plug-load	Refrigerated Glass Front Vending Machine Control	\$243.00	1,210	0.145
Plug-load	Non-Refrigerated Snack Vending Machine Control	\$108.00	343	0.041

## APPENDIX 2 – LIST OF ELIGIBLE COMMUNITIES

The following list of First Nation communities which are connected to the IESO-controlled electricity grid have been identified as eligible to participate in the Program, subject to meeting the Application Requirements, as specified in these Program Requirements. There may be changes to the list of Eligible Communities from time to time.

1. Aamjiwnaang First Nation
2. Alderville First Nation
3. Algonquins of Pikwakanagan First Nation
4. Animakee Wa Zhing 37 First Nation (Northwest Angle No. 37 First Nation)
5. Animbiigoo Zaagi'igan Anishinaabek
6. Anishinaabeg of Naongashiing (Big Island) First Nation
7. Anishinabe of Wauzhushk Onigum (Rat Portage)
8. Aroland First Nation
9. Atikameksheng Anishnawbek
10. Attawapiskat First Nation
11. Aundeck Omni Kaning First Nation
12. Batchewana First Nation
13. Beausoleil First Nation
14. Big Grassy River First Nation (Mishkosiminiziibiing)
15. Bigtigong Nishnaabeg (Ojibways of the Pic River First Nation)
16. Biinjitiwaabik Zaaging Anishinaabek First Nation (Rocky Bay First Nation)
17. Bingwi Neyaashi Anishinaabek First Nation
18. Brunswick House First Nation
19. Caldwell First Nation
20. Cat Lake First Nation
21. Chapleau Cree First Nation
22. Chapleau Ojibwe First Nation
23. Chippewas of Georgina Island
24. Chippewas of Kettle and Stony Point First Nation
25. Chippewas of Nawash Unceded First Nation
26. Chippewas of Rama First Nation
27. Chippewas of Saugeen First Nation
28. Chippewas of the Thames
29. Constance Lake First Nation
30. Couchiching First Nation
31. Curve Lake First Nation
32. Dokis First Nation
33. Eagle Lake First Nation
34. Fort Albany First Nation
35. Fort William First Nation
36. Ginoogaming First Nation
37. Grassy Narrows First Nation
38. Henvey Inlet First Nation
39. Hiawatha First Nation
40. Iskatewizaagegan #39 Independent First Nation (Shoal Lake #39)

41. Kashechewan First Nation
42. Kingfisher Lake First Nation
43. Lac des Mille Lacs First Nation
44. Lac La Croix First Nation
45. Lac Seul First Nation
46. Long Lake #58 First Nation
47. Magnetawan First Nation
48. Matachewan First Nation
49. Mattagami First Nation
50. M'Chigeeng First Nation
51. Michipicoten First Nation
52. Mishkeegogamang First Nation
53. Missanabie Cree First Nation
54. Mississauga First Nation
55. Mississaugas of Scugog Island First Nation
56. Mississaugas of the New Credit
57. Mitaanjigamiing First Nation
58. Mohawk Council of Akwesasne
59. Mohawks of the Bay of Quinte
60. Moose Cree First Nation
61. Moose Deer Point First Nation
62. Moravian of the Thames Delaware Nation
63. Munsee-Delaware Nation
64. Naicatchewenin First Nation
65. Naotkamegwanning First Nation
66. Nigigoonsiminikaaning First Nation
67. Niisaachewan Anishinaabe Nation (Ochiichagwe'Babigo'ining Nation)
68. Nipissing First Nation
69. North Caribou Lake First Nation
70. Northwest Angle 33 First Nation
71. Obashkaandagaang First Nation
72. Ojibway Nation of Saugeen
73. Ojibways of Garden River
74. Ojibways of Onigaming First Nation
75. Oneida Nation of the Thames
76. Pays Plat First Nation
77. Pic Mobert First Nation
78. Pikangikum First Nation
79. Rainy River First Nation
80. Red Rock Indian Band
81. Sagamok Anishnawbek First Nation
82. Seine River First Nation
83. Serpent River First Nation
84. Shawanaga First Nation
85. Sheguiandah First Nation
86. Sheshegwaning First Nation
87. Shoal Lake #40 First Nation

88. Six Nations of the Grand River
89. Slate Falls First Nation
90. Taykwa Tagamou Nation
91. Temagami First Nation
92. Thessalon First Nation
93. Wabaseemoong Independent Nations (WIN)
94. Wabauskang First Nation
95. Wabigoon Lake Ojibway Nation
96. Wahgoshig First Nation
97. Wahnapiatae First Nation
98. Wahta Mohawks First Nation
99. Walpole Island First Nation (Bkejwanong Territory)
100. Wasauksing First Nation
101. Whitefish River First Nation
102. Wiikwemkoong Unceded Territory (Wikwemikong Unceded First Nation)
103. Zhiibaahaasing First Nation



# APPENDIX 3 - MEASUREMENT AND VERIFICATION GUIDELINE: COMMUNITY INSTALL TRACK MEASURES, FIRST NATION COMMUNITY BUILDING RETROFIT PROGRAM

## 1. INTRODUCTION

The objective of measurement and verification (M&V) activities is to verify and confirm that the Eligible Measures that are supported by the Community Install Track of the First Nation Community Building Retrofit Program (FNCBRP) are installed and result in Energy Savings and Peak Demand Savings.

The M&V Guideline (the "Guideline") provides the Participants guidance in selecting the M&V methodology and preparing the M&V Plan, as required by the Program Requirements.

The defined terms have the meanings ascribed to them in the Program Requirements or IPMVP Core Concepts.

## 2. GENERAL GUIDELINE

The selection of the M&V methodology and the preparation of the M&V Plan shall follow the protocols and guidelines listed below:

- IESO EM&V Protocol "Evaluation, Measurement and Verification Protocol V4.0" issued in February 2021([www.ieso.ca](http://www.ieso.ca)) ("IESO EM&V Protocol");
- International Performance Measurement & Verification Protocol (IPMVP) – Core Concepts October 2016 EVO 10000 – 1:2016 & Addendum 1 September 2018 ("IPMVP Core Concepts");
- Uncertainty Assessment for IPMVP July 2019 EVO 10100 - 2019 or later as in effect from time to time. ("Uncertainty Assessment");
- IPMVP Application Guide on Non-Routine Events & Adjustments October 2020 EVO 10400 – 1:2020 ([www.evo-world.org](http://www.evo-world.org)) ("IPMVP Non-Routine Events").

Four M&V Options are available for developing and implementing a quality M&V Plan:

*Option A:* Retrofit-isolation: Key Parameter Measurement

*Option B:* Retrofit-isolation: All Parameter Measurement

*Option C:* Whole Facility

*Option D:* Calibrated Simulation

The following are considered in selecting the M&V Option:

- Complexity of the Eligible Measure
- Potential for changes in key factors that affect the baseline and post retrofit conditions
- The Eligible Measure's savings value
- The Eligible Measure's cost

When parameter measurement is involved, the primary considerations are:

- Is the load constant (e.g. lighting fixture) or variable (e.g. VSD applied to a pump)?
- Are the operating hours constant (e.g. street lighting) or variable (e.g. cooling hours)?

Spot measurements can suffice for constant loads, whereas short term or continuous measurements may be required for variable load. Where operating hours are constant, stipulated values can be applied, subject to validation. Where operating hours are variable, short term or continuous measurement may be required.

Differentiate M&V first by the type of project:

- 1) *Equipment retrofit only*, where efficiency gains are achieved by the retrofit or replacement of equipment, without changes in operations.
- 2) *Operational change only*, where energy consumption (and possibly demand) is reduced by changing the operating periods, settings or methods, without modifications to the equipment.
- 3) *Equipment retrofit and operational change*, where the combination of equipment and operational changes may impact load and energy separately or energy directly.
- 4) *Multiple Eligible Measures*, where three or more Eligible Measures are implemented at a single site or facility. Multiple Eligible Measures may enable the use of whole facility metering to determine savings.

M&V efforts will vary according to:

- Savings size (projected savings);
- Savings uncertainty (doubt about likely result of the measure's activity);
- For 'small' and 'certain' projects, 'least M&V effort' will involve acceptance of stipulated kW or kWh values, subject to reasonableness and validity checks, relative to industry norms;
- For 'large' and 'uncertain' projects, the 'highest M&V effort' will involve more rigorous scrutiny of baseline conditions specific to the facility, involving spot or short term

measurements on all, or a representative sample, of loads or operating hours as applicable;

- Extended post retrofit monitoring is not generally contemplated. (Extended monitoring may be done for other purposes, except if it is a specific condition of the accepted M&V Plan for a particular project.);
- Where available, existing data, as obtained through sub-metering, BAS logs, etc., will be utilized to the fullest extent, and will be considered as greatly enhancing the quality of the M&V;
- Enhanced M&V efforts undertaken by the Participant, including the use of existing monitoring data can be used to support savings claims (subject to acceptability of the data quality);
- Measures with a high degree of savings uncertainty will be conservatively discounted with an option for (and onus on) Participants to prove greater savings through extended pre and/or post-retrofit monitoring.

As it relates to Projects being evaluated under the Community Install Track of FNCBRP:

- M&V will be applied at the Eligible Measure and system level as defined by the Measurement Boundary of the Eligible Facility.
- In general, *Options A* and *B* will normally be employed – i.e. using a combination of stipulated values (referenced to industry standards or agreed site operating conditions), spot and short-term measurements.
- M&V will ensure diligence in establishing the baseline conditions and in defining the requirements for confirmation of post-retrofit savings.
- All measures will be required to report Energy Savings and Peak Demand Savings.
- M&V Plans are subject to continuous improvement, consistent with the principles described here, as program experience and empirical data are gained.

### 3. M&V PLAN

The M&V Plan will be used for all Community Install Track Projects. The M&V Plan should be developed in adherence to the IPMVP Protocol as required in the general guideline by a qualified professional, such as a Certified M&V Professional (CMVP), and consisting of following sections as appropriate:

- 1) Project General Information
- 2) Eligible Measures Intent

- 3) Selected IPMVP Option and Measurement Boundary
- 4) Baseline: Period, Energy and Conditions
- 5) Reporting Period
- 6) Basis for Adjustment
- 7) Analysis Procedure
- 8) Energy Prices
- 9) Meter Specifications
- 10) Monitoring Responsibilities
- 11) Expected Accuracy
- 12) Budget
- 13) Report Format
- 14) Quality Assurance

A generic M&V Plan template is provided below, which can be used by the Third-Party Community Install Contractor hired by the Band Council for Detailed Engineering Studies and projects as the basis for submitting the M&V Plan.

This template lays out the minimum information required by the Participant to enable the review of the application. The template is provided to help maintain consistency in documenting the information with Community Install Track Measures and Projects. Participants are encouraged to provide any additional information related to M&V procedures as required.

# M&V Plan and Saving Report Template

<b>1.0 General</b>
Application Identifier
Building Name: Building Address: Building Type: Application #:
Facility Overview
Provide a brief description of the Facility where the project will take place including approximately square footage, number of floors, type of facility (e.g. arena, water treatment plant, etc.) and operating schedule.  <i>Note: This will help the reviewer to evaluate the appropriateness of the M&amp;V plan, given the size and complexity of the facility.</i>
Timelines and Dates
Details of project time lines and milestones and document dates such as:  Estimated Start Date:  Estimated Completion Date:  Actual Start Date:  Actual Completion Date:  In Service Date:
<b>2.0 Eligible Measures Intent</b>
Describe the Eligible Measure, its intended result, and the operational verification procedures that will be used to verify the successful implementation of each Eligible Measure. Identify any planned changes to conditions of the baseline, such as unoccupied building temperature settings.

### 3.0 Selected IPMVP Option and Measurement Boundary

Specify which IPMVP option will be used to determine savings. Identify the measurement boundary of the savings determination. The boundary may be as narrow as the flow of energy through a pipe or wire, or as broad as the total energy use of one or many facilities. Describe the nature of any interactive effects beyond the measurement boundary together with their possible effects.

Identify the M&V Option as per IPMVP Core Concepts that will be used for determining the energy and demand savings including a brief justification\* for the selection of this M&V Option. (Check one box only)

- Option A Retrofit Isolation: Key Parameter Measurement
  
- Option B Retrofit Isolation: All Parameter Measurement
  
- Option C Whole Facility: Utility Bill Analysis
  
- Option D Calibrated Simulation:

*\*For example, M&V Option A is typically chosen for lighting retrofit project because it involves only one energy conservation measure, which retrofit isolation allows the narrowing of the measurement boundary in order to reduce the effort required to monitor independent variables and static factors, when retrofits affect only a portion of the facility.*

### 4.0 Baseline: Period, energy and conditions

Document the Facility's baseline conditions and energy data, within the measurement boundary. This baseline documentation should include:

- a) identification of the baseline period;
- b) baseline energy consumption and demand data;
- c) independent variable data coinciding with the energy data (e.g., production data, ambient temperature);
- d) static factors coinciding with the energy data;

- 1) occupancy type, density and periods;
  - 2) operating conditions for each baseline operating period and season, other than the independent variables;
  - 3) description of any baseline conditions that fall short of required conditions;
- e) details of adjustments that are necessary to the baseline energy data to reflect the energy management program's expected improvement from baseline conditions;
  - f) size, type and insulation of any relevant building envelope elements such as walls, roofs, doors, windows;
  - g) equipment inventory;
  - h) equipment operating practices;
  - i) any design, install, calibrate, and commission and any special measurement equipment that is needed under the plan;
  - j) significant equipment problems or outages during the baseline period.

The baseline documentation typically requires well-documented short term metering activities. The extent of this information is determined by the measurement boundary chosen or the scope of the savings determination. If the whole-facility M&V methods are employed, all facility equipment and conditions should be documented.

#### **5.0 Reporting Period**

Identify the reporting period, which may be as short as an instantaneous measurement during commission of an Eligible Measure, or as long as several weeks.

#### **6.0 Basis for Adjustment**

Declare the set of conditions to which energy measurements will be adjusted. The conditions may be those of the reporting period or some other set of fixed conditions. The conditions for the basis for adjustment determine whether savings are reported as avoided energy or as normalized savings.

#### **7.0 Analysis Procedure**

Specify the exact data analysis procedures, algorithms and assumptions to be used in each savings report. For each mathematical model used, report the terms and range of independent variables over which it is valid.

## 8.0 Energy Prices

Specify the energy prices that will be used to value the savings, and whether and how savings will be adjusted if energy prices change during the time the Eligible Measure is installed or in the future.

## 9.0 Meter Specifications

Specify the metering points and period if metering is not continuous. For non-utility meters, specify:

- meter characteristics;
- meter reading and witnessing protocol;
- meter commissioning or calibration procedure;
- routine calibration process;
- method of dealing with lost data and data transfer.

## 10.0 Monitoring Responsibilities

Assign responsibilities for reporting and recording during the reporting period:

- a) energy data;
- b) independent variables;
- c) static factors within the measurement boundary.

Identify those individuals that are responsible for conducting M&V activities and preparing the M&V Plan (analyses and documentation).

Name:	
Title:	
Company:	
Email Address:	
Phone:	
Address:	



### 11.0 Expected Accuracy

Evaluate the expected accuracy associated with the measurement, data capture, sampling and data analysis. This assessment should include qualitative and any feasible quantitative measures of the level of uncertainty in the measurements and adjustments to be used in the planned savings for the Final Report.

### 12.0 Budget

Define the budget and the resources required for the savings determination, both initial setup costs and ongoing costs throughout the reporting period.

### 13.0 Report format

Specify how results will be reported and documented.

### 14.0 Quality Assurance

Specify quality-assurance procedures that will be used for savings reports and any interim steps in preparing reports.