

## SCHEDULE F – PROJECT COMPLETION REPORT TEMPLATE

### VERY IMPORTANT:

**Timing:** You need to email a report, to your GMF project officer (contact info is in Schedule C), on the dates indicated in Schedule C or whenever FCM asks for such a report.

**Copyright:** Before you submit a report to FCM, make sure you hold the copyright for the report. If you're hiring a consultant to prepare the report, please make sure to get the copyright (see FCM's copyright tips document), otherwise FCM will not be able to disburse the Grant Amount.

**Accessibility for people with disabilities:** Please do not change the format, font, layout, etc. of this report. This template has been specially designed, following FCM's Accessibility Guidelines, in order to be accessible to people with disabilities.

**Confidentiality:** If your report contains any Confidential Information that you would prefer not be made available to the public (e.g. through a case study or other materials produced by FCM that relate to your Project), please submit two versions of the report:

- 1. Complete report including Confidential Information:** Please clearly label this report with the word "**Confidential**" or similar wording and FCM will treat it as confidential.
- 2. Abridged report excluding Confidential Information:** This report may be posted on the FCM website and otherwise made available to interested third parties, to help FCM meet its knowledge sharing objectives.

Please contact your project officer to receive an electronic copy of the Completion Report Template.

**Upon completion of the project, a copy of the Final Deliverable must be submitted along with this Completion Report.**

FCM will post your report on the [Green Municipal Fund™ \(GMF\) website](#). This is because one of FCM's mandates is to help municipal governments share their knowledge and expertise regarding municipal environmental projects, plans and studies.

### How to complete the Completion Report

The purpose of the Completion Report is to share the story of your community's experience in undertaking your project with others seeking to address similar issues in their own communities.

Please write the report in plain language that can be understood by people who are not specialists on the subject. A Completion Report is typically in the range of 5–10 pages, but may be longer or shorter, depending on the complexity of the project.

GMF grant recipients must enclose **final** copies of the Completion Report and the Final Deliverable with their final Request for Contribution. The reports, including all attachments and appendices, must be submitted in PDF format with searchable text functionality. Reports that are not clearly identifiable as final reports, such as those displaying headers, footers, titles or watermarks containing terms like "draft" or "for internal use only," will not be accepted by GMF. Additionally, reports must be dated. If you have questions about completing this report, please consult GMF staff.

<b>GMF number</b>	GMF 17580
<b>Name of lead applicant (municipality or municipal partner)</b>	Lead Applicant: Essex Energy Corporation Lead Municipality: The Municipality of Leamington
<b>Name, title, full address, phone, fax and e-mail address of lead technical contact for this study</b>	Marco Calibani, Project Manager 2199 Blackacre Dr, Suite 200, Oldcastle ON 519-890-5759; 1-866-291-5317 mcalibani@essexenergy.ca
<b>Date of the report</b>	July 19, 2022
<b>Type of study (Feasibility study or Program Design study)</b>	Feasibility Study

## 1. Introduction

This feasibility study was conducted by:

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## 2. The Study

The study objective was to determine the feasibility of designing and offering an “On Bill Financing” program to customers of Essex Powerlines Corporation (EPL), whereby customers could obtain easily accessible financing to install certain energy approved technologies at their residence, financed by way of a mechanism whose debt obligations would be settled through the customers’ monthly electricity bill.

Key activities included gauging the demand and need for such a program among residents. Additional stakeholder sessions with Essex Powerlines, industry regulators, other industry associations, municipal associations, lenders, and other key stakeholders to gather a broad range of opinions and feedback to inform the decision.

The study approach examined possible program models, obtained feedback from stakeholders, performed analyses of the customer value propositions to determine if the offering is worth it for the customer. If an acceptable value proposition was identified then plans for the design, marketing, rollout, and delivery of a pilot program to a small subset of EPL customers would follow. If a successful pilot program could have been designed and offered, then a suggested model for other electric utilities to follow and deploy within their service territories would also have been provided.

Several internal discussions and consultations with regulators at the Ontario Energy Board, the Electrical Distributors Association, and other electric utilities were conducted to consider the options for a possible program design and the impacts on existing operations. These consultations were of primary importance

as they determined how a program might be structured, and confirmed which entity within the Essex Power Corporation group of companies would deliver the program (i.e., whether to deliver a program through the regulated utility, or through an unregulated affiliate). These discussions ultimately informed the decision that a program is best offered outside of the regulated utility, if possible, and determined that a typically observed PACE (Property Assessed Clean Energy) Program is not the ideal program model that would meet intended objectives, in this instance.

### 3. Feasibility Study only: Elements of a Feasibility Study

Elements of a Feasibility Study	Page numbers from the Feasibility Study report or description of the feasibility element
<p>A baseline assessment of a community’s housing stock and energy upgrade potential, including assessing building types, energy use profiles and opportunities for energy upgrades to support GHG emissions reductions.</p>	<p>Customer outreach to determine the level of interest among would-be participants was performed in Phase 1. It was determined that participation in a pilot program would be limited only to owners of single-family, detached homes within the Essex Powerlines service territory. If the study determines that a pilot program is warranted then baseline levels of energy consumption and GHG emissions would be made at the outset of the pilot program, for subsequent evaluation against future consumption and emissions. <b>Refer to pages 3-8 of the report.</b> A typical residential energy load profile was used in lieu of assessing individual resident load profiles. Energy upgrade potential was not assessed because energy upgrades were not considered as part of the potential program. Building types were not investigated because the program was intended to serve single family detached homes only.</p>
<p>Potential uptake of home energy upgrades in terms of the number of anticipated projects and level of investment required</p>	<p>Levels of interest among customers was surveyed on Phase 1 outreach, refer to page 6. A pilot program would be limited to a maximum 1% of potential EPL customers, as described in the original OBF application. The level of investment per customer is analyzed in the customer value proposition analyses conducted in Phase 2, <b>refer to page 20 of the final report.</b></p>
<p>Expected environmental, social and economic benefits that could be achieved from these projects</p>	<p>Environmental benefits include decreased grid-supplied energy and associated GHG reductions, through renewable solar PV generation. The level of avoided energy and GHG emissions would vary with the actual PV system capacity at any individual residence and as such no individual GHG savings were analyzed, however a standard factor of 0.134kg CO<sub>2</sub>/kWh is commonly accepted. EV chargers would further drive reductions in fossil fuels used in transportation, but no estimate was provided given the wide range of possibilities for the type of car, distance driven, type of vehicle</p>

	<p>being displaced, and the fuel consumption being offset. Social benefits include improved resiliency of the electrical grid, and climate change mitigation. Economic benefits would be the potential for financial profits (or cost avoidance) through net metering, opportunities to profit through energy arbitrage, and avoidance of 3<sup>rd</sup> party (i.e. non-home based) EV charging fees <b>but these benefits are not quantified due to the failed customer value proposition.</b></p>
<p>Homeowner barriers to energy efficiency and renewable energy upgrades and to participation in existing efficiency programs, such as those offered by a utility company or regional efficiency agency</p>	<p>These barriers were not reviewed in the feasibility study because home energy efficiency upgrades were not considered as part of the offer to customers. Essex Power's experiences through prior delivery of IESO energy efficiency programs targeting the residential sector have historically struggled to meet objectives due to perceived (or actual) participation costs, disruptions to occupancy and/or occupant comfort and convenience, long payback periods, and a lack of customer knowledge/confidence when deciding. <b>For these reasons, a simplified and easy to access program design is contemplated in this study and does not include home energy efficiency retrofits.</b></p>
<p>Evaluation of relevant financing models for your local context</p>	<p>A third party lender is required for this program to be successful. <b>Outreach to potential lenders is found on pages 10-11 of the report.</b> The regulated utility cannot undertake a program that may expose the utility customers and ratepayers to inappropriate risks or costs. Delivery of the program through an unregulated affiliate is a better option, however the unregulated affiliate in this case would not be able to provide direct financing to participants. Therefore a 3<sup>rd</sup> party lender would be required for a successful program. Possible lenders expressed apprehension to fund such a program, unless a minimum program size could be achieved (which exceeds the size of a pilot program). Furthermore, a typically observed PACE program does not align to the intended objectives of a possible OBF program, which negates any protections that a program based on property assessments might offer.</p>
<p>Engagement with key municipal and external stakeholders on shared goals for a local program</p>	<p>Phase 1 of the study encompasses the outreach to several key stakeholder groups. These groups included municipalities, regulators, industry associations, lenders, equipment suppliers, the utility, and its customers. <b>Refer to pages 3-11 of the report.</b></p>

#### 4. Program Design Study Only: Elements of a Program Design Study

Elements of a Program Design Study	Page numbers from the Program Design report or description of the design element
Target audience (e.g. housing stock, socio-economic groups, etc.)	Not applicable
Participant eligibility criteria	Not applicable
Eligible energy measures, and non-energy measures if relevant	Not applicable
Funding sources and budget	Not applicable
Recommended financing model	Not applicable
Financing terms and conditions	Not applicable
De-risking strategies (e.g. credit assessment, municipal loan loss reserve and partial loan guarantee for third-party lenders)	Not applicable
Program delivery model	Not applicable
Application of the EnerGuide Rating System and relevant requirements for program participants	Not applicable
Integration with other relevant incentive programs	Not applicable
Consumer protection measures	Not applicable
Marketing and communications strategies	Not applicable
Workforce training needs	Not applicable
Program implementation plan	Not applicable
Stakeholder roles and responsibilities	Not applicable
Client journey and application process	Not applicable
Program process flow diagrams	Not applicable
Program monitoring and evaluation	Not applicable
Risk identification and management strategies	Not applicable
Contracting and procurement	Not applicable

## 5. Lead Applicant's Next Steps

The feasibility study indicates that there is sufficient interest in an OBF program among the utility's customer base. However, the analysis of customer value propositions fails to identify or quantify an acceptable value proposition for participants. The poor value propositions currently observed may change over time as prices for identified equipment should fall, or if electricity rates increase, or if the differences between Time-Of-Use rates widens, or if additional revenue streams can be realized. For clarity, "Time of Use (TOU)" rates are the rates charged by electric utilities per kWh of electricity consumed, which vary depending on the time of day the electricity is consumed, the time of year (i.e., Summer vs. Winter) and the typical province-wide demand for electricity at those times. Rate classes include On-Peak (most expensive), Mid-Peak, and Off-Peak (least expensive).

The next steps are to maintain a vigilant watch over the input costs to procure and install equipment, as well as to watch for changes in Time-Of-Use rates. A re-evaluation of the models contemplated herein may indicate in the future that the value proposition has improved, which could then justify the design and implementation of a pilot program. The suggested next step is that the models should be re-evaluated annually.

## 6. Lessons Learned

Outreach to customers was critical in understanding the level of interest among possible program participants. Similarly, outreach to regulators further informed the design of a potential pilot program. These conversations ultimately led to the decision that the utility would face significantly challenging regulatory hurdles if they offered the program directly (as opposed to through an unregulated affiliate whose regulatory requirements are less burdensome). Conversations with other distributors engaged in similar program planning (i.e., Lakefront Utilities) confirmed the notion to house the program outside of the utility itself. Perhaps most critically, discussions with potential lenders were informative to understanding that finding a lender for a program of this size (i.e. ~300 participants) would be challenging. Potential lenders indicated that a pilot program of approximately \$5,000,000 would be the minimum required to establish a lending program. Under the assumptions of the OBF feasibility study, this \$5,000,000 minimum would more realistically be the maximum that an OBF program might attain, if fully subscribed.

The primary barriers and challenges surrounded the identification of customer value propositions for the energy technologies considered. While larger solar PV systems can be very attractive financial investments with acceptable returns over the expected 25-year lifecycle, the smaller scale of residential applications reveals challenges for small sale systems. The smaller scale and unique characteristics of residential applications make it challenging to justify the financial investment. While there are unique applications (considering the unique load and rooftops that an individual residence might have) where it makes more financial sense, these are more accurately considered to be “fringe” applications that are not typical for most homeowners. Similarly, models for battery storage systems and EV chargers revealed that a financial value proposition for the residential market segment is lacking. The challenges of the residential market are reminiscent of the challenges observed from approximately 2011 to 2019, when EPL delivered the IESO’s suite of *saveONenergy* Conservation and Demand Management programs to residents. The residential suite of CDM programs regularly encountered challenges in meeting savings targets and cost-effectiveness metrics.

These challenges are not easily overcome. To have the greatest impact, the solar PV input costs would need to be lower and/or the avoided electricity costs would need to be higher. For a battery storage system, the differential between Time-Of-Use rates would need to be more pronounced to facilitate energy arbitrage opportunities. For EV chargers, there is no customer value proposition aside from convenience, and therefore efforts to mitigate or overcome are limited.

The concept of an On Bill Financing program is a sound one provided that the customer value proposition can be improved. Other municipalities (or their electricity distributors) may wish to evaluate this opportunity at a future time as input costs and electricity rates change. Alternatively, a typically PACE program remains an option, although this type of program design does not adequately address the intended program goals of an easy to administer, streamlined, standardized program offering.

This feasibility study is the result of the efforts of several contributors and stakeholders. The project champion is Marco Calibani, Project Manager (Essex Energy Corporation) who can be reached at [mcalibani@essexenergy.ca](mailto:mcalibani@essexenergy.ca) or by phone at 519-890-5759. Mr. Calibani was the lead consultant and managed the efforts for customer outreach and surveys, stakeholder sessions, design and creation of business models, and assembly of the final report.

## 7. Knowledge Sharing

There is no website or repository where more information about this feasibility study can be found. All information is provided in the study report and supporting documentation.



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