

**Pepco C&I Energy Savings Program**

**Technical Analysis Study Report (TASR)**

**PROJECT: (TITLE)**

**Version: (x.x)**

**Submitted By:**

**(<<INSERT COMPANY NAME>>)**

**(Company Address)**

**(Company Address)**

**(if a consultant or contractor prepared the report )**

**Report Prepared by:**

**(NAME OF CONSULTANT/CONTRACTOR)**

**(Address)**

**(Address)**

**Month, Day, Year**

**INSTRUCTIONS**

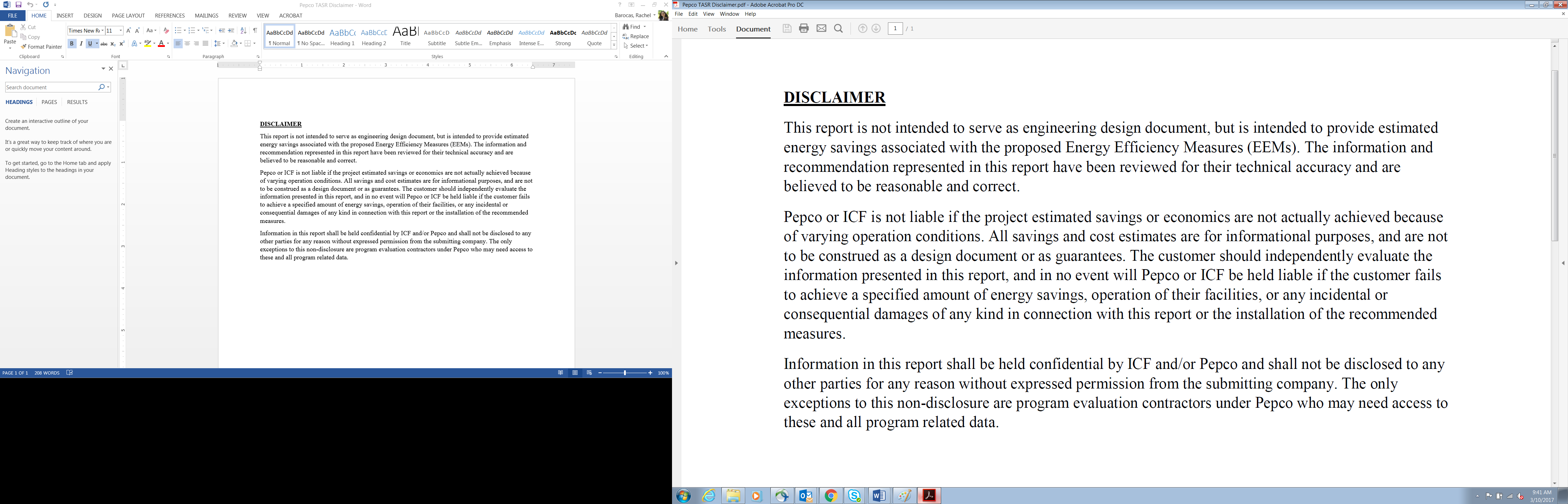
Prior to completing the Technical Analysis Study Report and project application, program participants are encouraged to participate in a scoping call which will provide logistics on moving forward with the process. This call will cover the particulars of the project, applicable baseline/baseline parameters, energy savings calculations and methods of monitoring and verification needed to verify savings. Please contact the program office to set up this call.

The purpose of this report is to provide program partners and program participants an easy to use, pre-approved Technical Analysis Study Report template. This template will help you capture the necessary data needed to expedite the review, evaluation and approval of projects.

Items highlighted in YELLOW represent data that you will need to provide in the report.

Items highlighted in GREEN provide you with instructions and clarifications on information, descriptions, or data needed to evaluate the project.

(Please delete this page and all text in Green before submitting the report



**Table of Contents**

[1. OVERVIEW AND SUMMARY 5](#_Toc487634506)

[1.1 Energy Usage 7](#_Toc487634507)

[1.2 Project Summary 8](#_Toc487634508)

[1.3 Energy Savings Estimate 9](#_Toc487634509)

[2. DETAILS OF CUSTOM ENERGY EFFICIENCY MEASURE PROJECTs 13](#_Toc487634510)

[2.1 EEM-1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 13](#_Toc487634511)

[2.2 EEM-2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 14](#_Toc487634512)

[2.3 EEM-3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 14](#_Toc487634513)

[3. METHOD FOR VERIFYING SAVINGS 15](#_Toc487634514)

[4. NEXT STEPS: IMPLEMENTATION 15](#_Toc487634515)

[APPENDIX A: PROGRAM INCENTIVES 16](#_Toc487634516)

[APPENDIX B: TECHNICAL ANALYSIS STUDY CONTACTS 17](#_Toc487634517)

[APPENDIX C: PROJECT CAPITAL COST ESTIMATES 18](#_Toc487634518)

[APPENDIX D: PICTURES OF EXISTING EQUIPMENT 19](#_Toc487634519)

[APPENDIX E: SUPPORTING CALCULATIONS AND DATA FOR eem SAVINGS 20](#_Toc487634520)

# OVERVIEW AND SUMMARY

The benefits and costs of installing <<INSERT PROJECT NAME>> at <<INSERT COMPANY NAME>> Co. are summarized in this report. *THIS IS A VERY BRIEF INTRODUCTION TO THE PROJECT. SHOULD BE SHORT AND TO THE POINT*

This report is prepared for the use as a part of Pepco C&I Energy Efficiency Program - Custom Incentive(s) application. This template of Technical Analysis Report is designed to assist Pepco’s commercial and industrial sector customers in preparing technical analysis study.

* BRIEF DESCRIPTION OF COMPANY: *ADD HERE A BRIEF SUMMARY OF WHAT FACILITY DOES OR MAKES:* <<INSERT COMPANY NAME>> produces XXXXXX.
* ANNUAL ELECTRICITY USAGE: XXX.X kWh was purchased from Pepco under Rate Tariff XXX in calendar year 20xx.
* ANNUAL NON-ELECTRIC USAGE ( AS APPLICABLE):
  + NATURAL GAS: XXX.X THERMS was purchased from XXXX under Rate Tariff XXX in calendar year 20xx at an average rate of XXXXX $/Therms.
  + PROPANE: XXX.X GALLONS was purchased from XXXX in calendar year 20xx at an average rate of XXXXX $/Gallon.
  + NO. 2 FUEL OIL: XXX.X GALLONS was purchased from XXXX in calendar year 20xx at an average rate of XXXXX $/Gallon.
  + NO. 6 FUEL OIL: XXX.X GALLONS was purchased from XXXX in calendar year 20xx at an average rate of XXXXX $/Gallon.
  + WATER: XXX.X THOUSAND GALLONS/YR was purchased from XXXX in calendar year 20xx at an average rate of XXXXX $/Thousand Gallon.
* BRIEF SUMMARY OF project comprising of proposed custom energy efficiency measure(s): The project is comprised of proposed custom energy efficiency measure(s) including XXXXXXXXX. This will allow <<INSERT COMPANY NAME>> to *BRIEF DESCRIPTION OF BENEFITS OF PROJECT (BOTH ELECTRICITY USE AND PRODUCTIVITY ENHANCEMENT).*

With this overview, details of the project comprising of custom energy efficiency measures are presented in the remainder of this report. *THE ROADMAP OF THE REPORT GOES HERE, IMPORTANT TO SOLIDIFY FLOW. TAILOR AS NEEDED.*

* Section 1 contains a discussion of <<INSERT COMPANY NAME>> operations, electric and non- electric usage, a high-level summary of the <<INSERT PROJECT NAME>> Project, estimates of project electricity and non-electric savings by individual EEMs, and a summary of the project economics by individual EEMs.
* A more detailed description of the project including discussions of existing equipment, planned improvements, and the method used to estimate project benefits is presented in Section 2.
* This is followed in Section 3 by a discussion of the method for verifying savings.
* Section 4 presents a description of the next steps.
* The appendices contain a summary of custom program incentives, study contacts, project energy efficient measures’ capital cost estimates, pictures of existing equipment, and supporting calculations and data.

## Energy Usage

Current monthly energy use by is summarized in Exhibit 1 below.

*PLEASE ENTER THE LAST 12 MONTHS OF BILLING HISTORY IN THE TABLE PROVIDED BELOW.*

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***Exhibit 1-1*** | | | |  |  |  |  |  |
| ***<<INSERT COMPANY NAME>>***  ***Energy Usage*** | | | |  |  |  |  |  |
|  | | | |  |  |  |  |  |
| Month | Electricity Usage | | | Non-Electric Usage | | | | |
| Monthly kWh | Monthly Peak kW | Production (Units)\* | Natural Gas (Therms) | Propane (Gallons) | No. 2 Fuel Oil (Gallons) | No. 6 Fuel Oil (Gallons) | Water (Thousand Gallons) |
| **1** |  |  |  |  |  |  |  |  |
| **2** |  |  |  |  |  |  |  |  |
| **3** |  |  |  |  |  |  |  |  |
| **4** |  |  |  |  |  |  |  |  |
| **5** |  |  |  |  |  |  |  |  |
| **6** |  |  |  |  |  |  |  |  |
| **7** |  |  |  |  |  |  |  |  |
| **8** |  |  |  |  |  |  |  |  |
| **9** |  |  |  |  |  |  |  |  |
| **10** |  |  |  |  |  |  |  |  |
| **11** |  |  |  |  |  |  |  |  |
| **12** |  |  |  |  |  |  |  |  |
| **Total** |  | N/A |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |
| **\* Production data only for process improvements in manufacturing plants** | | | | | | | | |

## Project Summary

High-level description of project, with benefits *THIS IS A SUMMARY OF THE PROJECT, INCLUDING INFORMATION ON INSTALLATION PLANS (IMPORTANT, IF NOT KNOWN, SAY SO).*

* High-level description of current process/equipment
* High-level description of planned improvement (describe planned equipment modification or replacement as it may be applicable)
* Installation plans, with dates (project start and completion dates).

## Energy Savings Estimate

* + 1. It is estimated that ELECTRICITY use will be reduced by XXX MWh, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix E). *INCLUDE DETALED CALCULATIONS IN APPENDIX E OR REFERENCE ADDITIONAL BACK-UP DOCUMENTATION.*
    2. It is estimated that NATURAL GAS use will be reduced by XXX THERMS, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix F). *INCLUDE APPENDIX F ONLY IF NEEDED.*
    3. It is estimated that PROPANE use will be reduced by XXX GALLONS, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix F). *INCLUDE APPENDIX F ONLY IF NEEDED.*
    4. It is estimated that NO. 2 FUEL OIL use will be reduced by XXX GALLONS, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix F). *INCLUDE APPENDIX F ONLY IF NEEDED.*
    5. It is estimated that NO. 6 FUEL OIL use will be reduced by XXX GALLONS, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix F). *INCLUDE APPENDIX F ONLY IF NEEDED.*
    6. It is estimated that WATER use will be reduced by XXX THOUSAND GALLONS, Y% of current Name of End Use usage. *IN THE CASE OF A DETAILED CALCULATION, THE BOTTOM LINE WILL GO HERE, WITH A BRIEF EXPLANATION OF METHOD BELOW.*
       1. This estimate is based on . . . A summary of the calculations is provided below. (Details are provided in Appendix F). *INCLUDE APPENDIX F ONLY IF NEEDED.*
  1. **Program Baseline**

*PROVIDE A DESCRIPTION OF THE PROGRAM BASELINE, INCLUDING SOURCE. FOR EXAMPLE:* This is an energy savings project. The baseline is current energy usage levels.

* 1. **Project Economics**

Highlights of project economics are summarized in Exhibit 2 below.[[1]](#footnote-1) *NOTE THAT THE TOTAL ANNUAL kWh SAVINGS NEED TO BE ALLOCATED ACROSS FOUR TIME PERIODS.*

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Exhibit 2*** | | | *USE A COLUMN FOR EACH* | | | |
|  | ***<<INSERT COMPANY NAME>> Company PROJECT NAME Project*** | | | *EEM WHEN THERE IS MORE* | | | |
|  | ***Project Economics*** | | | *THAN ONE IN A PROJECT* | | | |
|  | Category | Totals |  | | EEM-1 | EEM-2 | EEM-3 |
| 1 | Annual Electricity and Demand Savings | ------------- |  | | ------------- | ------------ | ------------ |
| 2 | Total Annual Electricity Savings (kWh) |  |  | |  |  |  |
| 3 | Use June – October  Weekdays\* Noon to 8pm |  |  | |  |  |  |
| 4 | Use June – October  All other times |  |  | |  |  |  |
| 5 | Use November – May  Weekdays\* Noon to 8pm |  |  | |  |  |  |
| 6 | Use November – May  All other times |  |  | |  |  |  |
| 7 | Demand Savings (peak kW) |  |  | |  |  |  |
| 8 | Average Electricity Rate ($/kWh) |  |  | |  |  |  |
| 9a | Annual Natural Gas Savings (therms) |  |  | |  |  |  |
| 9b | Annual Natural Gas Savings (dollars) | $0 |  | | $0 | $0 | $0 |
| 10a | Annual Propane Savings (gallons) |  |  | |  |  |  |
| 10b | Annual Propane Savings (dollars) | $0 |  | | $0 | $0 | $0 |
| 11a | Annual #2 Fuel Oil Savings (gallons) |  |  | |  |  |  |
| 11b | Annual Fuel Oil Savings (dollars) | $0 |  | | $0 | $0 | $0 |
| 12a | Annual Water Savings (gallons |  |  | |  |  |  |
| 12b | Annual Water Savings (dollars) |  |  | |  |  |  |
| 13 | First Year Electricity Cost Savings (dollars) | $0 |  | | $0 | $0 | $0 |
| 14 | First Year Non-Electric Cost Savings (dollars) (sum of rows 9b, 10b, 11b, 12b) |  |  | |  |  |  |
| 15 | Gross Project Cost applicable to Electricity |  |  | |  |  |  |
| 16 | Gross Project Cost applicable to Non-Electric1 | $0 |  | | $0 | $0 | $0 |

EEM = Energy Efficiency Measure

\* Weekdays excluding holidays

As noted in the footnote, a breakdown of the Gross Total Project Cost should be provided in Appendix C. Explain and show in Appendix C how the cost allocation was developed.

# DETAILS OF CUSTOM ENERGY EFFICIENCY MEASURE PROJECTs

*WHERE THE PROJECT IS COMPRISED OF MORE THAN ONE EEM, THERE WILL BE SEPARATE SECTIONS (2.1, 2.2 . . .); ONE FOR EACH EEM. IF THE PROJECT CONSISTS OF A SINGLE EEM, DETAILS WILL BE PLACED IN SECTION 2, WITH NO SUBSECTIONS.*

Details of the Project name Project for <<INSERT COMPANY NAME>> are presented in this section. Each section contains a description of the existing conditions, the electricity consumption reduction opportunity, and the energy savings/ calculations.

*IF ONLY ONE OPPORTUNITY, OMIT “2.1”:*

## EEM-1: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. **Description of Existing System/Equipment and Operating Schedule**

Currently, . . . *Provide detailed description of existing system and equipment(ratings, age, condition) will be presented here (including tables, as available)*

* + 1. **Description of Proposed EQUIPMENT Upgrade**

Replacing . . . . *Provide a detailed description of planned equipment upgrade here (including tables, as available)*

* + 1. **Method for Estimating Project Benefits**

*DESCRIBE HOW ENERGY SAVINGS WERE ESTIMATED: METHOD; MONITORING, IF ANY; REFERENCES; CALCULATIONS (INCLUDING REFERENCE TO APPROPRIATE APPENDICES AND ATTACHMENTS)*

Estimates of project electricity savings were made by . . . *Add description here*

## EEM-2: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. **Description of Existing System/Equipment and Operating Schedule**

Currently, . . . *Provide detailed description of existing system and equipment(ratings, age, condition) will be presented here (including tables, as available)*

* + 1. **Description of Proposed Equipment Upgrade**

Replacing . . . . *Provide a detailed description of planned equipment upgrade here (including tables, as available)*

* + 1. **Method for Estimating Project Benefits**

*DESCRIBE HOW BENEFITS (ENERGY SAVINGS) WERE ESTIMATED: METHOD; MONITORING, IF ANY; REFERENCES; CALCULATIONS (INCLUDING REFERENCE TO APPROPRIATE APPENDICES AND ATTACHMENTS)*

Estimates of project electricity savings were made by . . . *Add description here*

The increase in output generated by the project was estimated by . . . *Add description here*

## EEM-3: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

* + 1. **Description of Existing System/Equipment and Operating Schedule**

Currently, . . . *Provide detailed description of existing system and equipment(ratings, age, condition) will be presented here (including tables, as available)*

* + 1. **Description of Proposed Equipment Upgrade**

Replacing . . . . *Provide a detailed description of planned equipment upgrade here (including tables, as available)*

* + 1. **Method for Estimating Project Benefits**

*DESCRIBE HOW BENEFITS (ENERGY SAVINGS) WERE ESTIMATED: METHOD; MONITORING, IF ANY; REFERENCES; CALCULATIONS (INCLUDING REFERENCE TO APPROPRIATE APPENDICES AND ATTACHMENTS)*

Estimates of project electricity savings were made by . . . *Add description here*

The increase in output generated by the project was estimated by . . . *Add description here*

# Method for verifying savings

Discuss methodology for verifying savings.

* Baseline: As applicable to each EEM, include measurement and verification, trending and/or other methods used to determine baseline electrical energy consumption and electrical demand, as well as other baseline utility datum (as applicable), as per scoping discussion with Program. Include supporting documentation in Appendix E.
* EEM: For each of the proposed upgrades, discuss the methods of measurement and verification, trending and/or other documentation which will be used to verify the proposed energy consumption and electrical demand, as well as other utility datum (as applicable), as per scoping discussion with Program. Include supporting documentation in Appendix E.

# NEXT STEPS: IMPLEMENTATION

Upon receipt of pre-approval of this project and an incentive offer from the Program Office, the next steps in the process are:

* The customer shall select a contractor/vendor if it has not already done so.
* The customer shall, if costs of the project change based on selection of a contractor/vendor, notify the Program Office of that change.
* The Program Office will then issue a revised pre-approval.
* The customer shall complete the installation of the project.
* When the project is complete, the customer will notify the program office and will provide detailed information on variations between this study report and the actual installation and planned operation of custom EEM equipment.
* Upon satisfactory completion of a post-installation inspection (if required), and receipt and review of all final project documentation, program office will prepare the incentive check and forward it to the customer or its designated payee.

# APPENDIX A: PROGRAM INCENTIVES

Incentives are calculated based on the difference between the baseline (pre-project) electricity usage and reduced (post-project) electricity usage.

* The program will pay one time incentives resulting from the implementation of the project. After the project has been completed and if a post installation inspection has been carried out to determine the actual savings in electricity; it shall be the prerogative of the PEPCO program office to pay incentive based on the approved technical analysis study report or make adjustments in the report to reflect actual savings based on the post installation inspection to determine the final incentive for the project.
* The incentive is calculated as the lesser of $0.28 per kWh for the first year of projected electric kWh savings, 50% of installed cost, or buy down to 1.5 year payback based on substantiated and verifiable energy savings calculations. The project must pass the utility total resource cost (TRC) test.
* Projects that result in annual energy savings of less than **25,000** kWh are not encouraged (the cost of applying for such small projects may be difficult to justify).
* Incentive will be limited to $**1,000,000** per Pepco electric account (including all incentive applications in a program year).

# APPENDIX B: TECHNICAL ANALYSIS STUDY CONTACTS

|  |  |  |  |
| --- | --- | --- | --- |
| ***Exhibit B-1*** | | | |
| ***Project Feasibility Study Contacts*** | | | |
| Name | Role | Organization | Contact Information |
| John Customer | Project Manager | <<INSERT COMPANY NAME>> Company | Office Phone: Cell Phone: Email: |
| Joe Customer | Project Engineer | Contractor | Office Phone: Cell Phone: Email: |
| Mark Contractor | Project Manger | Contractor | Office Phone: Cell Phone: Email: |
| Bill Contractor | Project Engineer | Contractor | Office Phone: Cell Phone: Email: |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

# APPENDIX C: PROJECT CAPITAL COST ESTIMATES

The estimated capital cost of the project is presented in Exhibit C-1.

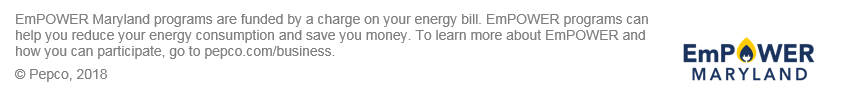
|  |  |  |  |
| --- | --- | --- | --- |
| ***Exhibit C-1*** | | | |
| ***<<INSERT COMPANY NAME>> <<INSERT PROJECT NAME>>*** | | | |
| ***Capital Cost Estimate*** | | | |
| Item | Cost | % | Total Capital Cost |
| **Grand Total** |  |  |  |
| **EEM #1 Sub Total:** |  |  |  |
| Hardware |  |  |  |
| Freight |  |  |  |
| Sales Tax |  |  |  |
| Labor |  |  |  |
| Contingency |  |  |  |
| **EEM #2 Sub Total:** |  |  |  |
| Hardware |  |  |  |
| Freight |  |  |  |
| Sales Tax |  |  |  |
| Labor |  |  |  |
| Contingency |  |  |  |
| **EEM #3 Sub Total:** |  |  |  |
| Hardware |  |  |  |
| Freight |  |  |  |
| Sales Tax |  |  |  |
| Labor |  |  |  |
| Contingency |  |  |  |
| ***Add rows as needed to include all EEMs***  ***List Sources Whenever Possible*** | | |  |
|  | | |  |

# APPENDIX D: PICTURES OF EXISTING EQUIPMENT

Pictures of the existing equipment are presented here as an input to the Pre-Installation Inspection.  
(PLEASE PROVIDE EXPLANATION IF NOT AVAILABLE)

# APPENDIX E: SUPPORTING CALCULATIONS AND DATA FOR eem SAVINGS

*TO AVOID MAKING THE STUDY TOO LONG, PROVIDE IMPORTANT INFORMATION HERE, DETAILED DATA CAN BE PROVIDED IN AN ELECTRONIC ATTACHMENT.*



1. Details for the capital cost estimate are provided in Appendix C. [↑](#footnote-ref-1)