Department of Energy and Environment


FY15 Annual Evaluation Report
Volume II—Appendices (Final Draft)

April 15, 2016
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ACKNOWLEDGEMENTS

This evaluation effort was performed by Tetra Tech, GDS Associates, Leidos, and Baumann Consulting Engineers under the leadership of Tetra Tech. GDS Associates led and completed the cost effectiveness testing.

This effort has been supported by the provision of project data in the form of KITT data extracts, project files, memos, staff interviews, and responses to other requests for data and information by the DOEE, DCSEU and VEIC.

The evaluation team thanks the DOEE, DCSEU and VEIC teams for their timely responses to all data requests and follow-up questions.
**ACRONYMS**

<p>| AC | Air conditioner |
| Btu | British thermal unit |
| C&amp;I | Commercial and institutional |
| CAT | Custom application tool |
| CATI | Computer assisted telephone interview |
| CBE | Certified business enterprise |
| CF | Coincidence factor |
| CEI | Comprehensive efficiency improvements |
| CFL | Compact fluorescent lamp |
| CLEER | Commercial lighting energy efficient replacement |
| DI | Direct install |
| DCSEU | District of Columbia Sustainable Energy Utility |
| DOEE | Department of Energy and Environment |
| DHW | Domestic hot water |
| EC | Energy consultant |
| ECM | Energy conservation measure |
| EFI | Energy Federation Incorporated |
| EFLH | Equivalent full load hours |
| E&amp;B | Ebert and Baumann Consulting Engineers |
| EM&amp;V | Evaluation, measurement, and verification |
| FAQ | Frequently asked question |
| FY | Fiscal year |
| Gpm | Gallons per minute |
| GWh | Gigawatt hour |
| HERO | Home energy reporting online |
| HPwES | Home Performance with ENERGY STAR® |
| HVAC | Heating ventilation and air conditioning |
| ICDI | Implementation contractor direct install |
| KITT | Knowledge information transfer tool |
| kW | Kilowatt |
| kWh | Kilowatt hour |
| LED | Light emitting diode |
| LI | Low-income |
| LIMF | Low-income multifamily |
| mcf | 1,000 cubic feet |
| MF | Multifamily |</p>
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>MMBtu</td>
<td>1 million British thermal unit</td>
</tr>
<tr>
<td>M&amp;V</td>
<td>Measurement and verification</td>
</tr>
<tr>
<td>N</td>
<td>Population</td>
</tr>
<tr>
<td>n</td>
<td>Sample</td>
</tr>
<tr>
<td>NREL</td>
<td>National Renewable Energy Laboratory</td>
</tr>
<tr>
<td>NTG</td>
<td>Net-to-gross</td>
</tr>
<tr>
<td>PJM</td>
<td>Pennsylvania New Jersey Maryland</td>
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<td>PMDI</td>
<td>Property manager direct install</td>
</tr>
<tr>
<td>PV</td>
<td>Photovoltaic</td>
</tr>
<tr>
<td>PY</td>
<td>Plan year</td>
</tr>
<tr>
<td>QA/QC</td>
<td>Quality assurance/quality control</td>
</tr>
<tr>
<td>QS</td>
<td>Quick start</td>
</tr>
<tr>
<td>RFP</td>
<td>Request for proposal</td>
</tr>
<tr>
<td>RPM</td>
<td>Reliability pricing model</td>
</tr>
<tr>
<td>REIP</td>
<td>Renewable Energy Incentive Program</td>
</tr>
<tr>
<td>RR</td>
<td>Realization rate</td>
</tr>
<tr>
<td>SFQS</td>
<td>Single family quick start</td>
</tr>
<tr>
<td>SOME</td>
<td>So others might eat</td>
</tr>
<tr>
<td>SR</td>
<td>Standard rebates</td>
</tr>
<tr>
<td>SREC</td>
<td>Solar renewable energy certificate</td>
</tr>
<tr>
<td>SRI</td>
<td>Standard rebate initiative</td>
</tr>
<tr>
<td>TRM</td>
<td>Technical reference manual</td>
</tr>
<tr>
<td>Tt</td>
<td>Tetra Tech</td>
</tr>
<tr>
<td>VEIC</td>
<td>Vermont Energy Investment Corporation</td>
</tr>
<tr>
<td>VFD</td>
<td>Variable frequency drive</td>
</tr>
</tbody>
</table>
GOVERNMENT OF THE DISTRICT OF COLUMBIA
Department of Energy and the Environment

[DATE]                                      [ID: xxxx]

(NAME)
(Address Line 1)
(Address Line 2)

Dear [NAME],

The Department of Energy and the Environment (DOEE) has hired Tetra Tech, a professional evaluation and research firm, to evaluate the District of Columbia Sustainable Energy Utility (DC SEU) energy efficiency programs. The purpose of this evaluation effort is to understand how these programs are operating and to verify equipment installations.

Within the next few weeks, you may receive a telephone call from Tetra Tech to schedule a visit in order to review the equipment installed through the program.

If you have any questions about the purpose of the study or its use, please feel free to contact Lance Loneke at (202) 671-3306. If you would like to call Tetra Tech to schedule a site visit at your convenience, feel free to call (800) 454-5070. In either case, please refer to your ID number at the top right corner of this letter.

Thank you in advance for your help with this important study.

Sincerely,

Lance Loneke, Ph.D.
Associate Director, DOEE
APPENDIX B: CUSTOM COMMERCIAL AND INSTITUTIONAL PARTICIPANT CUSTOMER SATISFACTION SURVEY INSTRUMENT

FY15 C&I Initiatives
(Tracks CIRX, MTV, CUST, MARO, NEWC)
Customer Satisfaction (CSAT) Survey Instrument to be Conducted during Onsite Recruitment and Scheduling

Thank you again for your time today. I have a few questions about your experience to provide the DCSEU with information to help them identify ways to improve their program efforts.

C1 First, will you please rate your level of satisfaction for each of the following items using a scale of 1 to 5, where 1 is 'not at all satisfied' and 5 is 'extremely satisfied'?

How satisfied were you with…?

___ [RECORD RESPONSE]

7 I’m not sure
8 Refused
9 Not applicable

[READ AND ROTATE LIST; RECORD 1 TO 5 FOR EACH]

A Your experience overall [do not rotate – always first]
B The rebate amount or financial incentive
C The technical assistance you received from the DCSEU [or their contractor], if applicable
D The application process
E The preapproval process, if applicable
F The amount of time it took to receive the rebate or financial incentive

C2 [For each item rated <4] You gave a rating of [FILL with rating] for [insert C1 item]. Why was that?

[OPEN ENDED RESPONSES]

C3 Did you work with an Energy Advisor from the DCSEU at any point during the planning or implementation of your project?

1 Yes
2 No (skip to C5)
7 I’m not sure (skip to C5)

C4 Would you describe the interaction with the DCSEU Energy Advisor as not at all helpful, not very helpful, somewhat helpful, or extremely helpful?

1 Not at all helpful
2 Not very helpful
3 Somewhat helpful
4 Extremely helpful
7 I’m not sure

C4a. Why do you say that?

[RECORD VERBATIM]

5 Would you contact DCSEU for assistance with future projects?

1 Yes
2 No [Why not?] [RECORD VERBATIM]
7 Not sure

END That’s all the questions I have. I’d like to thank you for your help with this survey [and scheduling an onsite verification visit – AS PERTINENT].
APPENDIX C: SOLAR INITIATIVES CUSTOMER SATISFACTION SURVEY INSTRUMENT

<table>
<thead>
<tr>
<th>FY15 Renewables</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Tracks PV and SHOT)</td>
</tr>
<tr>
<td>Customer Satisfaction (CSAT) Survey Instrument to be Conducted during Onsite Recruitment and Scheduling</td>
</tr>
</tbody>
</table>

Thank you again for your time today. I have a few questions about your experience to provide the DCSEU with information to help them identify ways to improve their efforts.

R1  Is the electric solar panel system currently operating, or working?

1  Yes
2  No
7  I’m not sure
8  Refused

R1a  [IF R1<>1] Why do you say that the electric solar panel system is not currently operating?  [RECORD VERBATIM]

R2  Next, will you please rate your level of satisfaction for each of the following items using a scale of 1 to 5, where 1 is ‘not at all satisfied’ and 5 is ‘extremely satisfied’?

How satisfied were you with…?

<table>
<thead>
<tr>
<th></th>
<th>[RECORD RESPONSE]</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>I’m not sure</td>
</tr>
<tr>
<td>8</td>
<td>Refused</td>
</tr>
<tr>
<td>9</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

[READ AND ROTATE LIST; RECORD 1 TO 5 FOR EACH]

A  Your experience overall [do not rotate – always first]
B  The contractor performing the work
C  [IF R1=1] The energy savings from the energy efficiency solar equipment
D  [IF R1=1] The interconnection process with PepCo?
R3  [For each item rated <4] You gave a rating of [FILL with rating] for [insert R2 item]. Why was that? [RECORD VERBATIM]

END  That’s all the questions I have. I’d like to thank you for your help with this survey [and scheduling an onsite verification visit – AS PERTINENT].
APPENDIX D: INCOME ELIGIBLE CUSTOMER SATISFACTION SURVEY INSTRUMENT

FY15 Income Eligible Initiatives
(Tracks LIMF LICP, ICDI)
Customer Satisfaction (CSAT) Survey Instrument to be Conducted during Onsite Recruitment and Scheduling

Thank you again for your time today. I have a few questions about your experience to provide the DCSEU with information to help them identify ways to improve their efforts.

L1  First, will you please rate your level of satisfaction for each of the following items using a scale of 1 to 5, where 1 is ‘not at all satisfied’ and 5 is ‘extremely satisfied’?

How satisfied were you with…?

__  [RECORD RESPONSE]

7  I’m not sure
8  Refused
9  Not applicable

[READ AND ROTATE LIST; RECORD 1 TO 5 FOR EACH]

A  Your experience overall [do not rotate – always first]
B  The energy efficient equipment eligible or available through the program
C  [FOR LICP] Incentive amount
D  [FOR LICP] Amount of time it took to receive the incentive
E  Interactions with the staff from DC SEU
F  [FOR ICDI] The contractor who installed the equipment
G  The performance of the new equipment

L2  [For each item rated <4] You gave a rating of [FILL with rating] for [insert L1 item]. Why was that?

L3  Was there any part of the process that you would you say was the most complicated or difficult? (For example, establishing eligibility, getting tenant buy-in, having the assessment completed, installing the equipment?)

L4  Do you plan to utilize the program for other properties?
END That’s all the questions I have. I’d like to thank you for your help with this survey [and scheduling an onsite verification visit – AS PERTINENT].
Residential Solar PV & Thermal Post Installation Inspection

Inspector’s Name: _____________________________________________ Date: ___________________

Participant’s Name: __________________________________________ Phone: _______/_______/_______

Physical Address: _____________________________________________

City: _________________________________________________________ Zip: ______

Renewable Energy Project

☐ Solar Photovoltaic

Manufacturer: ___________________________________________ Model Number: _______________________

Solar collector Location: ___________________________ Solar collector direction: _________

Solar collector capacity: _________ kW Number of solar collectors: _________

Array type: ☐ Fixed ☐ 1 or 2 Axis tilt

Axis tilt: _________ degrees Array azimuth: _________ degrees

Are you metering the output of the system?

☐ Yes ☐ No
If Yes, please record the available data:

___________________________________________________________________________
___________________________________________________________________________

□ Solar Hot Water

Manufacturer: ___________________________________________ Model Number: __________

Solar collector Location: ____________________________ Solar collector direction: __________

Solar collector area: ______ sq. ft. Storage Volume: ______ gallons

Number of solar collectors: ____________ Back-up heating fuel: __________________

Was the old hot water heating system replaced? □ Yes □ No

Describe any differences from the equipment described in the project file and what is observed or verified onsite.

1. _____________________________________________________________________________
   _____________________________________________________________________________
   _____________________________________________________________________________
   _____________________________________________________________________________

2. _____________________________________________________________________________
   _____________________________________________________________________________
   _____________________________________________________________________________
   _____________________________________________________________________________
3. __________________________________________________________________________

4. __________________________________________________________________________

5. __________________________________________________________________________

General Questions

1. Have there been any changes to the project since it was installed?

   If yes, please explain: __________________________________________________________

2. Are you satisfied with the performance of the renewable energy project and is it performing as expected?

   □ Yes □ No

   If No, please explain: __________________________________________________________
3. Do you have a maintenance contract on the system that was installed?

□ Yes □ No

• If Yes, please describe:

4. If you had not received an incentive from the DC Sustainable Energy Utility would you still have considered undertaking the same renewable energy project?

□ Yes □ No

If Yes, please explain:

5. Are you considering undertaking any additional renewable energy projects or expanding your current project?

□ Yes □ No

If Yes, please explain:

6. Will you consider undertaking any additional renewable energy projects in the future without incentives from the DC Sustainable Energy Utility?

□ Yes □ No

7. Were you satisfied with the workmanship of the equipment installer?

□ Yes □ No

If No, please explain:

8. Is there anything you would like to tell us about your experience?
## APPENDIX F: MULTI-FAMILY ICDI LOGIC MODEL

### Multifamily Implementation Contractor Direct Install (7610ICDI) FY15

#### Logic Model – updated February 5, 2015

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC SEU program staff</td>
<td>Develop &amp; Maintain/Continuously Improve Program Infrastructure</td>
<td>Infrastructure, tracking systems, program procedures in place that will support program goals and objectives</td>
<td>A sufficient number of implementation contractors are recruited to the program</td>
</tr>
<tr>
<td>Low Income Multi-family (LMI) Residences</td>
<td>Market Program to Recruit Customers</td>
<td>Developed pipeline</td>
<td>Developed pipeline</td>
</tr>
<tr>
<td>RFQs for Qualified Implementation Contractors</td>
<td>DC SEU Conduct a Site Assessment</td>
<td>Residents are introduced to energy efficiency by a trusted source</td>
<td>Contractors recommend program to other property managers or owners</td>
</tr>
<tr>
<td>CBE and non-CBE Certified Implementation Contractors</td>
<td>List of eligible measures/products for the site</td>
<td>Energy savings and Green Jobs</td>
<td>Better more sustainable building and community</td>
</tr>
<tr>
<td>List of approximately 300 (70,000 – 80,000 units) existing LMI possible customers</td>
<td>DC SEU provides resident educational materials on equipment to be installed</td>
<td>Verified energy savings and other benchmark calculations</td>
<td>Improved program design and program results</td>
</tr>
<tr>
<td>DSCEU Account Managers</td>
<td>KITT updated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leads from developers, architects, and contractors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DCSEU Energy Consultant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Three-way incentive agreement</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scope of work signed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CBE and non-CBE Certified Implementation Contractors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% Direct Install</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC SEU Energy Consultant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E&amp;MV Contractor (Tetra Tech)</td>
<td>E&amp;MV completed on a sample of projects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VEIC M&amp;V Contractor</td>
<td>Impact and process evaluation report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC TRMI</td>
<td>Recommendations to improve savings</td>
<td></td>
<td></td>
</tr>
<tr>
<td>KITI Database</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M&amp;V Framework</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E&amp;MV Plans</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**APPENDIX G: MULTI-FAMILY LICP LOGIC MODEL**

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| • DC SEEU program staff (Account Manager)  
  • Low income Multifamily (LIMF) Residences – new construction, major rehabilitation, redevelopment | Develop & Continuously Improve Program Infrastructure and Support  
  Market Program to Recruit Customers  
  Conduct Project Review and Analysis to Assess Energy Efficiency Measures  
  Implement Measures  
  Conduct Evaluation, Measurement, & Verification (EM&V) | Infrastructure, tracking systems, program procedures in place that will support program goals and objectives  
  A sufficient number of customers express interest in the Comprehensive Efficiency Program | DCSEEU viewed as a Trusted Energy Advisor  
  Incentive Agreement signed  
  Energy savings  
  Energy efficient LIMF community & sustainability industry development  
  Relationships are established with developers, architects, and engineers |
| • Program information on DC SEEU website  
  • List of possible existing LIMF customers  
  • Leads from trade allies |  
  Customer Incentive agreement  
  DC SEEU EC provides Scope of Work with estimated Incentives  
  KITT updated  
  Continuous QA/QC on measures implemented (100% desk reviews and on-sites)  
  Savings calculations review  
  Incentive payments issued  
  KITT updated  
  CAT utilized |  
  E&MV completed on a sample of projects  
  Impact and process evaluation report  
  Recommendations to improve savings  
  KITT and CAT updated | |
|  | • Completed program forms  
  • DC SEEU Intake Coordinator and Energy Consultant (EC)  
  • Incentive Agreement signed  
  • Customer Contractors |  
  • KITT Database  
  • M&V Framework  
  • E&MV Plans |  
  E&MV completed on a sample of projects  
  Impact and process evaluation report  
  Recommendations to improve savings  
  KITT and CAT updated | |

*Low Income Multifamily Comprehensive Efficiency Improvements (7612LICP) FY15 Logic Model – updated February 5, 2015*
### APPENDIX I: SOLAR HOT WATER & SOLAR PV LOGIC MODEL

#### Solar Hot Water (7110SHOT) & Solar Photo Voltaic (7107PV) FY2014 Logic Model – updated March 2015 (Draft)

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Renewable Portfolio Standards (RPS)</td>
<td><strong>Develop and Maintain Program Infrastructure</strong></td>
<td>• Outline of qualifications and procedures</td>
<td>• Add to the energy mix for DC</td>
</tr>
<tr>
<td>• Renewable Energy Incentive Program (REIP)</td>
<td><strong>Installation Contractors Enroll Customers</strong></td>
<td>• Smart Solar Initiative RFP issued for District Based Contractors</td>
<td>• Provide a program for low-income community not currently served by the existing RPS and REIP</td>
</tr>
<tr>
<td>• Community Solar Cooperatives</td>
<td><strong>Contractors Install Systems</strong></td>
<td>• Contractor reviews electric bills for proper sizing</td>
<td>• Support local job creation</td>
</tr>
<tr>
<td>• DCSEU account managers monitor pipeline and spend</td>
<td><strong>Conduct Evaluation, Measurement &amp; Verification (EM&amp;V)</strong></td>
<td>• Independent EM&amp;V Contractor</td>
<td>• DCSEU supports renewable energy project installations within the District</td>
</tr>
<tr>
<td>• DCSEU pre-approved projects</td>
<td></td>
<td>• VERC EM&amp;V Senate Group</td>
<td>• EM&amp;V completed on a sample of projects</td>
</tr>
<tr>
<td>• Customer education and support</td>
<td></td>
<td>• KITI Database</td>
<td>• Impact and process evaluation report</td>
</tr>
<tr>
<td>• Independent EM&amp;V Contractor</td>
<td></td>
<td>• M&amp;V Framework</td>
<td>• Recommendations to improve savings</td>
</tr>
<tr>
<td>• Solar Hot Water (7110SHOT)</td>
<td></td>
<td>• EM&amp;V plans</td>
<td></td>
</tr>
<tr>
<td>• LiMF Market (7110SHOT)</td>
<td></td>
<td>• SOLAR HOT WATER &amp; SOLAR PV LOGIC MODEL</td>
<td></td>
</tr>
</tbody>
</table>

**Development and Maintenance Program Infrastructure**

- Contractor provides all data tracking fields to DC SEU, proof of installation
- 100% in-field review conducted to verify system installation and quality of installation
- DCSEU payment to contractor upon verification
- KITI updates
- Contractor submits certificate of completion and Electrical inspection certification
- Contractor connects system to grid once utility notifies contractor system can be made operational

**Installation Contractors Enroll Customers**

- Contractor reviews electric bills for proper sizing
- Contractor submits interconnection application agreement to utility

**Contractors Install Systems**

- EM&V completed on a sample of projects
- Impact and process evaluation report
- Recommendations to improve savings

**Conduct Evaluation, Measurement & Verification (EM&V)**

- EM&V completed on a sample of projects
- Impact and process evaluation report
- Recommendations to improve savings

**Outcomes**

- Verified energy savings and other benchmark calculations
- Improved program design and program results
APPENDIX J: SOLAR PV PROCESS FLOW CHART

DCSEU FY14 Solar Process Flow
dcseu+contractor+pepco

- Pepco contacts contractor if application is incomplete
- When complete, will send email confirm to contractor
- Pepco determines circuit impact, operating conditions, etc. They may request amendments to the contractor
- When app is reviewed and approved, Pepco sends "Approval to Install" notification to contractor

Pepco: Approves the Interconnection Application Agreement

Dcseu: John reviews the mlp for the fy14 projects, budgets and goals

Dcseu (John) assigns the bulk money to 2014 Dcseu Solar Contractors

The Contractors: Submit Project Information to Pepco and to Dcseu

The Contractor: Received Pepco's approval and the Work Order from Dcseu, Installation can begin

Dcseu: Inspection, Review, and Check Request

Dcseu: Internal Functions for project creation

- PIC creates the opportunity
- converts to a project
- checks for sOW, spec sheets, application, inspection form, income qualification materials
- PIC creates solar CAT and assigns project to EC
- PIC updates solar work order tracker

Contractor: Submits a certificate of Completion and Electrical Inspection Certification to Pepco after the solar install is completed and tested

Pepco: Upon receipt of completion and inspection, they have the order programmed to support the solar system

Contractor: Can turn on Solar PV System

J-1
## APPENDIX K: HPWES AND FEDERAL HOME LOAN BANK LOGIC MODELS

### Home Performance with Energy Star (7420HPES) & Federal Home Loan Bank (7401FHLB) FY2014 Logic Model – updated March 2015 (Draft)

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| • DC SEU program staff  
• National Home Performance with Energy Star Program | • Develop and Maintain Program Infrastructure  
• Market Program to Recruit Customers  
• Conduct Home Energy Assessment  
• Install Measures  
• Conduct Evaluation, Measurement, & Verification (EM&V) | • Infrastructure, tracking systems, program procedures in place that will support program goals and objectives  
• Support local job creation  
• Customers follow through with more comprehensive recommended measures  
• Energy savings and Green Jobs created  
• A self-sustaining Home Performance Industry develops  
• Improved program design and program results | • Infrastructure, tracking systems, program procedures in place that will support program goals and objectives  
• Support local job creation  
• Customers follow through with more comprehensive recommended measures  
• Energy savings and Green Jobs created  
• A self-sustaining Home Performance Industry develops  
• Improved program design and program results |
| • BPI-Certified Contractors  
• Program Info on DC SEU website | • Online form submission  
• Leads from Contractors and Program Partners | • BPI-Certified Contractor conducts a "test out" & incentive form submitted  
• QA/QC completed (desk review, onsite) on sample  
• Incentive payments  
• KITT updated | • Independent EM&V Contractor  
• HDC EM&V Services Group  
• DC SEU TRM  
• KITT Database  
• M&V Framework  
• EM&V Plans |
| • Interested customers  
• BPI-Certified Contractors scheduled | • Direct Install measures  
• Contractor provides Scope of Work with estimated incentives | | |

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# APPENDIX L: RETAIL EFFICIENT PRODUCTS LOGIC MODEL

## Retail Efficient Products – Appliances and Lighting (7710 APPL) FY2014
Program Logic Model – updated March 2015 (Draft)

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>* DC SEU program staff * Initiative Design * Standard Operating Procedures</td>
<td>* Develop and Maintain Program Infrastructure * Enroll Retailers * Customers Purchase and Install New Energy Efficient Products * Retailers and Manufacturers are Reimbursed</td>
<td>* Product promotion RFP to Manufacturers (CFLs and LEDs) * Retailers</td>
<td>* Identify additional suppliers for retailers * District customers have increased access to standard and specialty CFLs, LEDs, and energy efficient appliances * Less efficient equipment removed from the grid</td>
</tr>
</tbody>
</table>

- Manufacturers (CFLs and LEDs) * Retailers * Program Information on DC SEU website * DC SEU staff
- DC SEU promotion * Program partners – enrolled manufacturers and retailers * Customer education * Program partner marketing
- Per bulb incentives * Monthly invoice and activity reports * Qualified Fulfillment Contractor (EFI)
- Independent EM&V Contractor * VEIC EM&V Services Group * DC SEU TRM * KITT Database * MS&V Framework * EM&V Plans

*APPENDIX L: RETAIL EFFICIENT PRODUCTS LOGIC MODEL*
APPENDIX M: T12 MARKET TRANSFORMATION LOGIC MODEL

Small Commercial T12 Market Transformation (7510MTV) FY 2014
Logic Model – updated March 2015 (Draft)

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
</table>
| • DSEU program staff
  • RFIs for Qualified Contractors | • Develop & Maintain/continuously improve Infrastructure
  • Quality Contractors for Preferred List | • Infrastructure, tracking systems, program procedures in place that will support program goals and objectives |
| • Certified Business Enterprise (CBE) Certified Contractors employing DC residents
  • DSEU Account Managers | • Recruitment of Customers for T12 Replacement
  • Measures Installed and Verified | • Contractors are well-informed of program offerings |
| • Certified Business Enterprise (CBE) Certified Implementation Contractors
  • Customer outreach materials produced by DSEU
  • DSEU Account Manager Outreach | • Contractors agree to participate and Green Jobs are generated |
| | • DSEU Energy Consultants
  • Signed project pre-approval form | • Pipeline developed |
| | • EM&V Contractor
  • CBE EM&V Contractor
  • DC TRM
  • KITT Database
  • EM&V Framework
  • EM&V Plans | • Energy savings |

• Installation documentation submitted by contractor
  • 100% QA/QC of request review, onsite
  • Incentive payments
  • Project data entered into KITT database |

• EM&V completed on a sample of projects
  • Impact and process evaluation report
  • Recommendations to improve savings

Energy efficient lighting available to small businesses that could not otherwise afford

DCSEU viewed as a Trusted Energy Partner

Improved program design and program results
APPENDIX N: BUSINESS ENERGY REBATES LOGIC MODEL

C&I Business Energy Rebates (BER) (7510CIRX) FY 2014
Logic Model – updated March 2015 (Draft)

**Inputs / Resources**
- DCSEU program staff
- List of customers less than 10,000 square feet who applied in FY2012
- Certified Business Enterprise (CBE) Contractors
- Program Information on DCSEU web-site
- WOEP, DMCC, Main Street
- DCSEU Account Managers
- Customer Contractors
- Pre-built rebates
- Marketing materials, Trade magazines, Associations
- DCSEU Customer Support Staff
- Customer documentation of installation
- DCSEU Project Specialist
- DC TRIM
- KITT Calculations
- EM&V Framework
- EM&V Contractor
- VBC MEV Contractor
- DC TRIM
- KITT Database
- EM&V Framework
- EM&V Plans

**Activities**
- Develop & Maintain/continuously
  Improve Infrastructure
- Train/Educate Trade Allies to sell Energy Efficiency Incentives
- Customer Outreach
- Measures Installed and Verified
- Conduct Evaluation, Measurement, & Verification (EM&V)

**Outputs**
- Program documentation
- Program info on web site
- Program process flows
- Rebate structures
- Regular communication with active trade allies
- Technical support available to supply chain
- Business customers are reached via contractors, website, email blasts
- Customers are preapproved for large projects
- 100% QAQC (desk review, on-site)
- Feedback from trade allies is solicited
- DCSEU processes rebates
- KITT database is updated
- EM&V completed on a sample of projects
- Impact and process evaluation report
- Recommendations to improve savings

**Outcomes**
- Simplified path available for all C&I customers who want to participate in energy efficiency
- Supply chain trade allies are well informed of program eligible measures and participation processes
- Pipeline developed
- Energy savings
- Verified energy savings and other benchmarks, calculations
- DCSEU develops and deepens relationships with trade allies, contractors, supply chain and customers
- DCSEU viewed as a Trusted Energy Partner
- Improved program design and program results
## APPENDIX O: CUSTOM SERVICES FOR C&I CUSTOMERS

### Commercial Custom Services (7520CUST) FY2014
Logic Model – updated March 2015 (Draft)

<table>
<thead>
<tr>
<th>Inputs/Resources</th>
<th>Activities</th>
<th>Outputs</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCSEU C&amp;I Program Manager</td>
<td>Develop &amp; maintain/continuously improve Infrastructure</td>
<td>Infrastructure, tracking systems, program procedures in place that will support program goals and objectives</td>
<td>Customer agrees to get more information about potential opportunities at their facility</td>
</tr>
<tr>
<td>RFQ for Qualified Contractors</td>
<td>Recruit customers – customer engagement strategy</td>
<td>A sufficient number of Largest Energy Users express interest in the program</td>
<td>DCSEU viewed as a Trusted Energy Advisor</td>
</tr>
<tr>
<td>AM and EO team work closely together to improve program structure</td>
<td>Conduct technical assessment/establish baseline</td>
<td>Existing Conditions and Custom Savings Analysis</td>
<td>Energy Savings</td>
</tr>
<tr>
<td>DCSEU Account Managers (AM) / Energy Consultants (EC)</td>
<td>Install measures/complete projects</td>
<td>DCSEU Incentives</td>
<td>Verified energy savings and other benchmark calculations</td>
</tr>
<tr>
<td>Contractors</td>
<td>Conduct Evaluation, Measurement, &amp; Verification (EM&amp;V)</td>
<td>DCSEU Energy Consultants</td>
<td>Improved program design and program results</td>
</tr>
<tr>
<td>List of largest users</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Report customers</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Project Intake Coordinator (PIC)</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>DCSEU Energy Consultants</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>C&amp;I Energy Services General</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Custom Measure Protocol</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Custom Analysis Tool (CAT)</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Billing Data (Metered Data)</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>DCSEU Incentives</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Custom Incentive Agreement</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>EM&amp;V Contractor</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>VSC M&amp;V Contractor</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>DC TRM</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>KITT and CAT Calls</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>M&amp;B Framework</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>EM&amp;V Plans</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
<tr>
<td>Custom Project Files</td>
<td></td>
<td>DCSEU Incentives</td>
<td></td>
</tr>
</tbody>
</table>

Largest Energy Users are contacted
- Project leads from Contractors and DCSEU AM
- PIC answers questions and routes customers into correct track

Existing Conditions and Custom Savings Analysis
- Custom Project File and Incentive Agreement

Measures installed
- QA/QC completed by DCSEU Energy Consultants
- 100% QA (desk review, create)
- Incentive payment
- KITT updated

EM&V completed on a sample of projects
- Impact and process evaluation report
- Recommendations to improve savings

Verified energy savings and other benchmark calculations

Improved program design and program results