



## 2013 Commercial & Industrial Energy Conservation Funding Calculation Worksheet

### User Guide

~ updated when *The Works!* retrofit lighting program was initiated in September ~

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### A. Introduction

**New versions of the Seattle City Light Retrofit Lighting Worksheets were issued in September 2013** to add *The Works!* funding calculations. Under *The Works!* a customer may receive 15% more funding for replacing all the inefficient lighting in their facility, or 30% more funding if they also add occupancy sensors and beat the 2012 Seattle Energy Code interior lighting power allowance by 10%.

These Guidelines offer information that may be helpful to energy analysts, contractors, and customers interested in using the worksheets to estimate energy savings or utility funding.

### B. Getting Started on a Project

The customer must sign a contract with Seattle City Light before equipment is purchased, so contact Seattle City Light early. The Seattle City Light Energy Advisor at 206-684-3800 can tell you whether the project falls under a program for large commercial and industrial facilities, or falls under the streamlined program for small commercial and industrial buildings. The project will also be assigned to a Seattle City Light energy analyst to the project.

### C. Overview of Worksheets

**Custom and Standard Funding Calculations.** Seattle City Light Funding Calculation Worksheets provide estimates of electrical energy savings and Seattle City Light funding for common energy conservation measures for new and existing buildings. Conservation strategies that are not covered by these Standard Calculations are referred to as Custom Measures. Custom Measures can be funded based on customized engineering calculations.

**Where to Get Copies of the Workbooks.** The Funding Calculation Worksheets for standard Lighting and HVAC measures can generally be downloaded from [www.energysmartservices.com](http://www.energysmartservices.com)

**HVAC Standard Measures.** Standard HVAC Measures are covered in worksheets in *SCL 2013 Worksheets for HVAC & NC LIGHTING*. / Do not enter backup equipment capacity into these worksheets.



**Lighting in New Construction.** Lighting in New Construction is covered in worksheets in *SCL 2013 Worksheets for HVAC & NC LIGHTING*. The baseline for lighting in new construction funding calculations is the Seattle Energy Code. The Seattle Department of Planning and Development (DPD) requires use of a code compliance *Lighting Summary Form* to calculate the allowed versus the proposed connected lighting load, in watts. The Seattle City Light baseline and proposed Funding Calculation Worksheets use this format as well, and many of the same inputs. Lighting controls are also eligible for funding where not required by code.

**Lighting in Existing Buildings.** Lighting upgrades are covered in worksheets in *SCL 2013 Worksheets for RETROFIT LIGHTING W*. Lighting in Existing Buildings is handled in a separate file because the complexity of the workbook exhausts some aspects of Excel workbook capacity. For the same reason, they are addressed in more detail in the last section of these guidelines. **New versions of the Seattle City Light Retrofit Lighting Worksheets were issued in September 2013** to add *The Works!* funding calculations.

**Custom Measures.** The Funding Calculation Worksheets for Standard Measures provide both an estimate of savings in kWh/year and an estimate of Seattle City Light Funding. For a Custom Measure, the savings are calculated independently. The results are entered in the *Project Summary Form* under the Annual Savings (kwh/year) column. Custom Measures can be entered into the green lines of any of the Funding Calculation Workbooks. If a project has only Custom Measures, you may choose to use the Custom Incentive workbook. That workbook also includes the Funding Factor table for custom measures. That table gives the funding per kWh as a function of measure life.

**Complex Projects.** If a project includes measure types that are covered by separate workbooks, you may choose, if it is a large project, to issue separate contracts, but more often you will want to combine the results of multiple workbooks onto a single *Project Summary Form*. This is done by copying the results from one *Project Summary Form* into the green lines of another *Project Summary Form*. It's most likely to occur where a project for an existing building involves both lighting and HVAC.

### Summary of Funding Calculation Worksheet file names

<i>Application</i>	<i>File Name</i>
Lighting in New Construction	SCL 2013 Worksheets for <a href="#">HVAC &amp; NC LIGHTING</a>
HVAC in New & Existing Bldgs	SCL 2013 Worksheets for <a href="#">HVAC &amp; NC LIGHTING</a>
Lighting in Existing Buildings	SCL 2013 Worksheets for <a href="#">RETROFIT LIGHTING W</a>
Custom Incentives	SCL 2013 Worksheets for <a href="#">CUSTOM INCENTIVES</a>

### D. Use of the Worksheets – Tips for Success

**Start by filling in the facility name and address on the *Contract Request*.** This auto-populates information on the other worksheets. Then use the *Table of Contents* to move to the worksheets relevant to your project. A navigation button in the top right corner of each worksheet takes you back to the table of contents.

**Navigation.** Navigation through the workbook is achieved using the *Table of Contents* or *Menu* at the beginning, and tabs along the bottom of the screen. If you have enabled macros, there are also convenient navigation buttons.



**Green Cells.** The user completes worksheets by entering information in the green cells. White cells are either left blank or will be auto-populated by the worksheet. Due to the complexity of the Seattle Energy Code baseline for some of the HVAC calculations, a large number of green cells need to be filled in to determine a funding amount. If the calculation results aren't populating, check that you've filled all the relevant green cells. / In HVAC calculations, don't leave the number of unique pieces of equipment (first column on the left) empty.

**Deleting Data, or Clearing Cells.** When deleting the contents of a cell, use the "delete" key, enter a zero, or select *Edit/Clear/Values*. Do not use the spacebar to empty a cell...the resulting cell looks empty, but it's not.

**Cutting and Pasting.** You can cut and paste data into these worksheets. If you use *Edit, PasteSpecial, Values*, rather than simply *Edit/Paste*, you will retain the user-friendly formatting.

**Large Projects.** Some of the worksheets have more lines than are printed using the default print range. For large projects, extend the print range down the page as necessary to include all lines that include data. [Highlight the total area to be printed, then select *File/Print Area / Set Print Area,*]

**Cost-based Funding Caps.** Take a look at the *Project Summary Form* when you're done. Funding estimates in the *Project Summary Form* include the effects of any cost-based funding caps. Seattle City Light doesn't pay more than 70% of the cost for retrofit projects (no more than 100% of the incremental cost for new construction), and doesn't buy down the payback for the customer to any less than ½ years. Cost-based funding caps are based on the total project funding, with the effects applied proportionately to all the individual measures.

**Use of Excel Macros – optional except for retrofit lighting worksheets.** Use of these workbooks is easiest to use if you "enable macros." [In *Excel 2003*, enable macros as the file opens. It's easy. In later versions of Excel, click on the symbol in the upper left hand corner and select the following options: *Excel Options/Trust Center/Trust Center Settings/Macro Settings*, select "Disable All Macros with Notification." Then under *Windows/Excel Options/Trust Center/Trust Center Settings/Message Bar*/select "Show the message bar in all applications when content has been blocked." When you open the SCL workbook file, it may show a warning message on the message bar, along with an "options" button. Click on options and enable the macros, or the blocked object. When saving the file, save to a "macro-enabled" worksheet.] The retrofit lighting worksheets were generated in Excel 2010 and require use of 2007 or later. It is a macro-enabled file.

## E. Lighting in Existing Buildings

**User-Friendly Features.** The Retrofit Lighting workbook offers the following user-friendly features:

- Higher funding levels are offered for customers that replace all of the inefficient lighting in their facility.
- A Fixture Schedule may be used to auto-populate parts of the Fixture Count worksheets for large, complex projects.
- Savings and funding are estimated for bi-level fixtures using actual occupied and unoccupied input watts from fixture equipment submittals. Software provides default percent-of-time in unoccupied mode as a function of occupancy type.



### Where to Start.

The Main Menu gives a list of the steps to obtain Seattle City Light funding. The Calculation Menu sets up the user to calculate energy savings and funding for a specific project. The Calculation Menu lists the types of equipment covered by the calculations, and allows the user to set up the structure of the worksheets to suit his or her preferences: (1) The user decides whether to enter the per-unit total costs, or the per-unit material costs. (2) The user decides whether or not to use a Fixture Schedule. The fixture schedule approach is best suited to large complex projects. Use of the Fixture Schedule reduces the amount of information entered line-by-line in the Fixture Count, and automatically calculates the total number of fixtures per fixture-type.

**The Works! – a new, whole-building lighting program introduced in September 2013.** Under *The Works!* a customer may receive 15% more funding for replacing all the inefficient lighting in their facility, or 30% more funding if they also add occupancy sensors and beat the 2012 Seattle Energy Code interior lighting power allowance by 10%. A single Excel file handles projects that go through *The Works!* and those that go through the standard program at the lower funding levels. The new file includes a Works! Program Requirements Checklist, and a Works! Qualification Worksheet. Otherwise the calculations remain the same. Each worksheet in the new version has “2013 + W!” in the upper right hand corner so you can quickly determine whether or not you are using the new version. To apply for the higher funding levels, read the Checklist, then fill out the Qualification Worksheet. The appropriate funding levels are automatically applied based on entries to the Qualification Worksheet.

**Proposed Fixture Types.** In the Fixture Count or the Fixture Schedule, the Proposed Fixture Type is selected from a pull-down menu. The Proposed Fixture Type should be chosen carefully because this input determines the standard funding levels, in \$ per estimated first-year kWh savings, as shown in the following table. The information then entered into the Qualification Worksheet determines whether an additional 15 or 30% gets added to the standard funding.

### 2013 FUNDING FACTORS (in \$/kWh, using first-year kWh savings)

Energy Conservation Measure	Standard \$/kWh	15% more	30% more
		<i>Works!</i> <sup>Basic</sup> \$/kWh	<i>Works!</i> <sup>PLUS</sup> \$/kWh
Fixture Removals	\$0.11	\$0.13	\$0.14
T8/T5 Delamp-Only	\$0.02	\$0.02	\$0.03
Fixture-mounted Occ Sensor Retrofits	\$0.23	\$0.26	\$0.30
T8/T5 Relamp-Only	\$0.07	\$0.08	\$0.09
CFL Screw In Retrofits	\$0.03	\$0.03	\$0.04
CFL Lighting, Hard Wired	\$0.23	\$0.26	\$0.30
Fluorescent Lighting, Hard Wired	\$0.23	\$0.26	\$0.30



CMH Screw In Retrofits		\$0.07	\$0.08	\$0.09
HID &/or Induction, Hard Wired		\$0.23	\$0.26	\$0.30
Induction &/or Cold Cathode Screw Ins		\$0.11	\$0.13	\$0.14
LED Screw In Retrofits*		\$0.17	\$0.20	\$0.22
LED Lighting, Hard Wired*		\$0.23	\$0.26	\$0.30
Exit Signs		\$0.17	\$0.20	\$0.22
Central Lighting Controls		\$0.23	\$0.26	\$0.30
Occupancy Sensors (Wall / Ceiling Mount)		\$30/\$90	\$34/\$104	\$39/\$117

\* These measures will receive 10% beyond the amount stated here, as part of the Demonstration Technology Bonus program. The 10% bonus is automatically applied on the *Project Summary Form*.

**Cost Information.** A checkbox located in The Calculation Menu allows you to choose whether to enter line-by-line total costs or line-by-line material costs. Costs that aren't covered by the line-by-line entries get entered into the cost summary table at the top of the Fixture Count worksheet. Before you are done, review the cost summary table at the top of the Fixture Count worksheet.

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