Commercial and Industrial Retrofit Program

**PROGRAM INFORMATION**

The program is intended to encourage small, medium, and large commercial and industrial customers in Seattle City Light’s service territory to undertake energy retrofits of existing buildings and equipment. Types of eligible projects include building control and HVAC system upgrades, industrial process improvements, water heating, and LED lighting conversions including new fixtures, retrofit kits, and networked lighting controls. In addition, City Light also incentivizes complex multi-measure building system upgrades, which also follow these Program Requirements.

**Eligibility**

To be eligible for funding for a commercial or industrial retrofit project, the customer must have a commercial account in City Light’s service territory. In order to receive an incentive, *equipment installation cannot begin and products/equipment shall not be purchased until the project has been reviewed and approved by City Light and there is a signed Participation Agreement*, as detailed below in the Project Timeline and Required Documentation section. For any product to be eligible for an incentive, it must comply with all product specifications, be clearly marked with product information, and meet all applicable federal, state, and local code requirements. Further details on product eligibility are included in the Product Specifications section below.

If you are not upgrading an existing building or piece of equipment, please visit our website to view our new construction program offerings at [https://energysolutions.seattle.gov/your-business/new-construction/](https://energysolutions.seattle.gov/your-business/new-construction/).

You may also contact an Energy Advisor to see if your project qualifies for an incentive at (206) 684-3800 or SCLEnergyAdvisor@seattle.gov.

**Participant Obligations**

Once an eligible application form has been received and approved, City Light will send the customer a Participation Agreement outlining the terms and conditions of participation and incentive payment. The customer must sign and return this agreement within 30 days of receiving the incentive offer. All terms and conditions are legally binding and required. The Participation Agreement will be active for a specified contract term from the date the agreement was signed. Project installation, project review and verification, and incentive payment must be completed within the contract term.

**Program Incentive Summary & Funding Caps**

City Light’s retrofit incentives are paid based on calculated annual energy savings or on a per-unit basis as indicated in your contract. Retrofit incentive rates are published at [https://energysolutions.seattle.gov/your-business/business-tools-and-resources/](https://energysolutions.seattle.gov/your-business/business-tools-and-resources/). This list is not comprehensive and subject to change without notice.

Incentives are also capped so that City Light does not pay more than 70% of the incremental project cost. To calculate the incremental cost, you will be required to provide the invoiced cost of your energy

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1 In most cases, multifamily property owners may apply for commercial retrofit incentives if more than 4 units.
measures. Do not include tenant improvement, seismic, IT upgrades, or fire and life safety costs in this total.

- For lighting and other discretionary energy conservation projects, the incremental cost is equivalent to the total project cost (see Eligible Costs, under Post-Installation Documentation).
- For HVAC and other equipment replaced at or near the end-of-life, the incremental cost is 25% of the total project cost related to energy conservation.
- For prescriptive measures, the incremental cost is determined by Bonneville Power Administration or the Regional Technical Forum based on published research. The City Light prescriptive incentive will pay up to 70% of the invoiced cost or the total prescriptive incentive amount, whichever is less.

**PROJECT TIMELINE & REQUIRED DOCUMENTATION**

To receive an incentive, you must provide City Light with documentation demonstrating the proper installation of energy efficient products. If project documentation is incomplete or insufficient, then an incentive payment may be delayed or denied. Further detail on required documents is included in the following table, and summarized below:

<table>
<thead>
<tr>
<th>Step 1: Pre-Installation</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ Product specification sheets</td>
<td></td>
</tr>
<tr>
<td>▪ Signed application form</td>
<td></td>
</tr>
<tr>
<td>▪ Pre-installation documentation including scope of work and plans</td>
<td></td>
</tr>
<tr>
<td>▪ Estimated project cost</td>
<td></td>
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</tbody>
</table>

| Step 2: Signed Participation Agreement |

<table>
<thead>
<tr>
<th>Step 3: Post-Installation</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ As-built documentation</td>
<td></td>
</tr>
<tr>
<td>▪ Invoice(s)</td>
<td></td>
</tr>
</tbody>
</table>

**Pre-Installation**

Contact an Energy Advisor at (206) 684-3800 or SCLEnergyAdvisor@seattle.gov to initiate an incentive application. If applicable to your project, an Energy Advisor will send you a retrofit workbook. Complete the application tab. Upon receipt of the returned file, an Energy Management Analyst will be assigned to work with you as identify your retrofit project. We are happy to work with you even before the project has been clearly defined. To qualify for program funding, the following required documentation must be submitted to City Light for review and approval. **Your project will not qualify for incentive funding if equipment has been purchased and/or if installation has begun prior to review and approval from City Light staff and signed Participation Agreement.**

The time needed to calculate or validate energy savings can vary for each project and may include on-site pre-installation equipment verification. Please allow time in the project scheduling for this review.

**Documentation**

- **Product Specification Sheets**: Product Specification Sheets (also referred to as cut sheets or spec sheets) are required for all products and equipment. Note: If an existing product is being replaced by multiple pieces of equipment not covered by a single product specification sheet, (i.e., separate driver, sensor, ballast, etc.), cut sheets must be submitted for each separate component.

- **Estimated Project Cost**: Proposed project cost shall be submitted in the
Proposed project costs should include all costs borne by the customer for the associated scope of work including, but not limited to, contracted or in-house labor, equipment and materials, rental equipment, applicable permits, and associated disposal fees.

- **Pre-Installation Documentation**: Customers must work with an Energy Management Analyst from City Light to provide all required information on existing conditions.

## Participation Agreement

**Action**

Once the required pre-installation documentation has been submitted, City Light will confirm the project’s eligibility to receive an incentive based on the program specifications contained herein and any project-specific addenda. All projects are subject to verification of energy savings calculations and/or visual on-site verification. Final incentive funding is solely the discretion of City Light review.

Once the City Light customer has received the signed the Participation Agreement from City Light, the customer can proceed with purchasing and installing (either in-house or notifying the contractor to start the installation.)

**Documentation**

- **Participation Agreement**: The Participation Agreement outlines what will be required for incentive payment (monitoring, verification, invoices, etc.). The customer must sign and return this agreement within 30 days of receiving the incentive offer. All terms and conditions are legally binding and required. The Participation Agreement will be active for a specified term from the date the agreement was signed. Project installation, project review and verification, and incentive payment must be completed within the project contract term.

- **Change in Scope from Pre-Installation**: If the customer would like to make any changes to the scope of the project after signing the Participation Agreement, contact City Light immediately to make sure the project is still eligible for an incentive. If no changes are made to the project, there is no need to contact City Light until the project is complete.

## Post-Installation

**Action**

Once the project is completed and the equipment is operating according to scope, contact your assigned Energy Management Analyst to notify City Light that the project is complete and initiate an incentive payment. Projects may also require additional verification in the form of a post-installation site verification, trend logs from the Building Automation System, or electrical metering of equipment to verify equipment installation and confirm proper operation. Refer to the product specifications below and any included project-specific specifications for detailed requirements.

During the post-installation verification, equipment must be labeled with model information or a visible nameplate that matches the equipment submittals.

**Documentation**

- **As-built documentation** must be submitted reflecting the final installation counts and final equipment model numbers. If equipment selection has
changed during the project, product specification sheets for the new equipment must be submitted. As noted in the Participation Agreement section above, you must notify City Light immediately of any change in scope to ensure incentive eligibility and approval.

- **Invoice(s):** All projects are required to submit a customer invoice that reflects the total project cost in the Commercial Retrofit Workbook, itemized with material and labor costs for the energy-related portion of the work. The project invoice shall be the final invoice for the work completed and should reflect the final amount paid by the customer. If the invoice does not come directly from the customer to City Light, then the customer must be copied on all communication by the sender. All project invoices must provide the following level of detail:
  - Contractor company name and address
  - Customer name and site address
  - Unique invoice number
  - Date
  - Quantity of each item by model number (cost-allocation not required)
  - Total customer cost (Eligible Costs) including the following elements:
    - Equipment
    - Labor
    - Permitting
    - Disposal fees
    - Equipment rental specific to completing the project
    - Design or system commissioning
    - Sales tax

- **Payment Assignment Form:** If the City Light customer would like the incentive payment to go directly to a contractor, this form can be completed and signed by both parties to assign payment to a third party. This form is located within the Commercial Retrofit Workbook.

- **W9 Form:** If assigning payment to a contractor, a W9 form for the contractor will be required if not already on file.

- **Submittals:** Additional submittals may be required depending on the project. Refer to the Participation Agreement specifications for additional technology-specific requirements.
PRODUCT SPECIFICATIONS

For any product to be eligible for an energy efficiency incentive, it must be clearly marked with product information and meet all applicable federal, state, and local code requirements. All equipment must carry a safety certification by an approved testing laboratory (UL, CE, ETL, etc.). In addition, products will need to meet the following City Light specifications.

Retrofit Lighting

<table>
<thead>
<tr>
<th>Measure</th>
<th>Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Lighting</td>
<td>For any lighting product to receive an incentive it must meet the criteria included in this table. It is the responsibility of the customer to ensure appropriate illumination levels. To be eligible for lighting incentives, all products must meet one of the following requirements:</td>
</tr>
<tr>
<td></td>
<td>1) The product is listed on a City Light-recognized Qualified Product List (QPL) below:</td>
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<tr>
<td></td>
<td>• DesignLights Consortium (DLC) lighting fixtures</td>
</tr>
<tr>
<td></td>
<td>• DLC QPL for Networked Lighting Controls (NLC)</td>
</tr>
<tr>
<td></td>
<td>• ENERGY STAR</td>
</tr>
<tr>
<td></td>
<td>• DLC Horticultural QPL (see Indoor Horticulture section for additional specifications)</td>
</tr>
<tr>
<td></td>
<td>Or</td>
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<td></td>
<td>2) Ad-hoc approval by City Light staff with the following product documentation requirements:</td>
</tr>
<tr>
<td></td>
<td>• Product LM-79 test results</td>
</tr>
<tr>
<td></td>
<td>• Other documentation as requested</td>
</tr>
</tbody>
</table>

LM-79 test results will be used to verify that proposed lighting products not listed on a QPL meet the following minimum technical specifications specific to the appropriate luminaire category.

**LM-79 Test Results:**

<table>
<thead>
<tr>
<th>Luminaire Category</th>
<th>Lumens per Watt</th>
<th>Warranty (Years)</th>
<th>CRI</th>
<th>Power Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor low output</td>
<td>≥90</td>
<td>≥5</td>
<td>≥65</td>
<td>≥.9</td>
</tr>
<tr>
<td>Outdoor high output</td>
<td>≥95</td>
<td>≥5</td>
<td>≥65</td>
<td>≥.9</td>
</tr>
<tr>
<td>Indoor Directional</td>
<td>≥65</td>
<td>≥5</td>
<td>≥80</td>
<td>≥.9</td>
</tr>
<tr>
<td>Indoor Ambient</td>
<td>≥100</td>
<td>≥5</td>
<td>≥80</td>
<td>≥.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥70 (high bay)</td>
<td></td>
</tr>
<tr>
<td>High output - Mogul base</td>
<td>≥90</td>
<td>≥5</td>
<td>≥65</td>
<td>≥.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>≥70 (high bay)</td>
<td></td>
</tr>
</tbody>
</table>

City Light reserves the right to deny eligibility for products are not listed on a qualified products list.

In the Commercial Retrofit Workbook, fixture wattage must always be entered as
the full input wattage—combined wattage of the fixture (i.e., driver, ballast, on-board controls)—and must match the product specification sheet. See exception for task tuning/high end trim for Networked Lighting Controls below.

### LED Fixtures and Retrofit Kits

**LED Fixtures**

- New LED fixtures will include new fixture housing, LED chip board, and integral driver (power supply). New LED fixtures may include, but are not limited to, the following types: troffers, panels, wraps, wall packs, low-bay and high-bay style fixtures, ceiling trim fixtures (with no removeable lamp), and exterior fixtures (e.g., light poles).

TLEDs, downlights, and other LED lamps are not eligible through the Commercial and Industrial Retrofit Program. You can get instant discounts on these LED lighting products and more through Lighting to Go: [https://energysolutions.seattle.gov/wp-content/uploads/L2G_Overview_040219.pdf](https://energysolutions.seattle.gov/wp-content/uploads/L2G_Overview_040219.pdf)

**Retrofit Kits**

- Integrated-style retrofit kits (as defined by the Primary Use category on the DLC QPL) receive the same incentive as new fixtures. All other retrofit kits (i.e., component retrofit kits including linear or strip-style) receive a lower incentive level. See the City Light’s Commercial and Multifamily Retrofit Incentive List for incentive levels published on [https://energysolutions.seattle.gov/your-business/business-tools-and-resources/](https://energysolutions.seattle.gov/your-business/business-tools-and-resources/).
  - Integrated kits: Retrofit systems which replace the entire optical systems of the existing luminaire and fully integrate a replacement light source, optics, and reflective panel, where the panel connects with the fixture housing front along two opposing sides or more and when installed, fully conceals the interior of the existing housing. Indoor and outdoor applications.
  - Component kits: Retrofit kits that have exposed LEDs, tube style lenses, or bar-style components for indoor applications.
  - Retrofit kits may not employ existing lamp sockets or “pin” bases.

**HID Replacement LED Lamps**

- HID replacement LED lamps are not considered retrofit kits and are not eligible for the $50/fixture NLC bonus incentive even if they are controlled by a system listed on the DLC’s NLC QPL.

### Controls

**Standard Lighting Controls**

- Standard Lighting Controls include:
  - Daylight sensors
  - Occupancy sensors
  - Occupancy with daylight sensors
  - Non-QPL networked lighting controls

If fixtures are upgraded in addition to the standard lighting controls, there is also an incentive for fixture savings.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| Networked Lighting Controls (NLC) | - Search for the system on the DLC's Networked Lighting Controls QPL. Provide a screenshot of the QPL listing with your pre-install documentation.  
- In addition to being listed on the QPL, systems must have the following capabilities installed, configured, and enabled in order to be eligible for the $50/fixture incentive:  
  ▪ High-end trim  
  ▪ Occupancy sensors  
  ▪ Daylight sensors  
  ▪ Zoning  
    ▪ For non-LLLC applications, zoning set up should follow daylight responsive controls in the Seattle Energy Code active at project submission  
    ▪ There must be at least two zones per 300 square feet for any space with fixtures controlled by NLCs  
- Additional documentation:  
<table>
<thead>
<tr>
<th>Pre-install</th>
<th>Post-install</th>
</tr>
</thead>
</table>
  | Sequence of operations by space type (Click here for guidance: Lighting Design Lab Guide)  
  | Floor plan | As-built sequence of operations and floor plan  
  | Site visit including a sampling to confirm sequence of operations |
| Controls-Only Projects | - Proposed controls-only projects may be submitted via the Commercial Retrofit Workbook and receive the same energy savings incentive as standard lighting projects. |

Note: TLED products and HID LEDs are not eligible for the $50/fixture incentive even if they are controlled by systems listed on the DLC's NLC QPL.
Other Lighting Specifications

**Fixture Removal**
- Incentives for fixture removal are only eligible within the context of a larger project (i.e., as part of a retrofit project being submitted to City Light) and qualify for the energy savings incentive. To receive funding for Fixture Removal, the fixture must be completely removed from the premises, and the electrical wiring to the fixture must be removed from the source junction box.

**Small Business Bonus Incentive for Lighting**
- City Light customers with rate schedules beginning with “ESM” qualify for the small business bonus incentive. The small business bonus incentive applies a 20% incentive bonus to new fixtures, retrofit kits, and standard controls.

Notes: The 20% bonus does not apply to Networked Lighting Controls or HID replacement lamp products. Projects eligible for the small business bonus incentive are still subject to the cap that limits the incentive to 70% of the project costs.

**Indoor Horticulture**
- Starting April 1, 2020, City Light requires all products and equipment submitted for indoor horticulture projects to be listed on DLC’s Indoor Horticulture Qualified Products List or meet all the criteria in the following table:

<table>
<thead>
<tr>
<th>Parameter/Attribute/Metric</th>
<th>Requirement</th>
<th>Method of Evaluation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Photosynthetic Photon Efficacy (PPE)</td>
<td>$\geq 1.9 \ \mu{\text{mol}}/J \ +/\ -5%^*$</td>
<td>LM-79</td>
</tr>
<tr>
<td>Photosynthetic Photon Flux Maintenance (PFMp) Q90</td>
<td>$\geq 36,000 \ \text{hours}$</td>
<td>LM-80</td>
</tr>
<tr>
<td>Warranty</td>
<td>5 years</td>
<td>Specification sheet</td>
</tr>
<tr>
<td>Power Factor</td>
<td>$\geq 0.9$</td>
<td>LM-79</td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>$\leq 20%$</td>
<td>LM-79</td>
</tr>
<tr>
<td>Safety Certification</td>
<td>UL or ETL/Interek listed</td>
<td>Specification sheet</td>
</tr>
</tbody>
</table>

* Applies to fixtures used in vegetation and flowering stages.

- In addition to the required documentation for all standard lighting projects, indoor horticulture projects must also provide:
  - Cannabis projects only:
    - Washington State Liquor and Cannabis Board (WSLCB) license
    - Seattle/local Marijuana Regulatory Business License
    - Seattle/local Business License Tax Certificate
  - Cooling equipment description
  - For change of use or new construction: a fixture spacing floor plan showing the layout and area of the lighting racks

- Tunable fixtures (any fixtures with variable wattage input) must use full input wattage to calculate incentive levels and energy savings in the Commercial Retrofit Workbook.

Note: City Light only provides funding for LED fixtures that meet DLC specifications.
## Retrofit Non-Lighting

<table>
<thead>
<tr>
<th>Measure</th>
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</tr>
</thead>
</table>
| **All Non-Lighting Projects** | • Backup equipment is not eligible for funding. Backup equipment is defined as equipment that is redundant to the primary equipment and rarely operates.  
• Equipment operating in a lead/lag configuration (alternating on/off sequence) is eligible for funding. Funding shall be based on the savings of the combined operating hours of each item.  
• Savings are calculated based on AHRI-rated equipment efficiencies at full load and part load conditions. Full load efficiencies cannot be substituted for weighted average or seasonal efficiencies. Integrated Part Load Value (IPLV) will be used for standard conditions and Non-Standard Part Load Values will be used for non-standard conditions, and the two will not be interchangeable.  
• If your project results in both gas and electric savings, you may be eligible for incentives from both City Light and PSE. Your total incentive from both utilities may not exceed 70% of the total project cost. You will need to apply separately to both utilities. |
| **Baseline assumptions** | • In most cases, energy savings will be calculated using the Seattle Energy Code as the baseline condition for equipment replacement. Key exceptions are VSDs, HVAC controls, and electric resistance heating retrofit projects.  
• Upgrades that involve several complex measures such as control projects, heat recovery, changing out large parts of a HVAC system, or whole building level changes may be eligible for custom incentives that use a pre and post evaluation as a basis for savings. |
| **Water-Cooled Chillers** | • The as-built sequence of operation for the chiller and cooling tower must be submitted prior to payment and reflect the following:  
  ▪ The condenser water temperature setpoint must automatically reset at part loads down to a minimum setpoint of no greater than 65°F condenser water returning from the cooling tower to the chiller.\(^2\)  
  ▪ If the chiller manufacturer indicates the proposed control would damage the chiller, notify City Light and set up a meeting to discuss. Do not institute any sequence that is not recommended by the chiller manufacturer.  
• During the on-site verification of installed equipment, the condenser water temperature setpoint must be consistent with the as-built sequence of operations.  
• Water-cooled centrifugal chillers located in a penthouse or indoors are eligible for a higher incentive, as they have a longer life. |

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\(^2\) This is consistent with the AHRI test standards for IPLV and NPLV ratings used as the basis for City Light energy conservation funding, which uses 65°F condenser water at all loads below 50% rated capacity (AHRI Standard 550-590).
<table>
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</thead>
</table>
| **Variable Speed Drives (VSD) on Air Handling Units (AHUs)** | - Existing constant volume AHU must serve variable air volume (VAV) systems.  
- Incentives shall be based on the total rounded HP that is controlled by the VSD.  
- The new VSD shall have a screen or digital readout that indicates output frequency, current, voltage, power (kW), power factor and percent speed.  
- If the VSD will be connected to the building’s control system, the VSD must communicate kW and percent speed as trendable data points.  
- Existing flow control devices (e.g. fan inlet vanes, inlet cones, or outlet dampers) being replaced by a VSD shall be fixed in the open position or completely removed.  
- VSD control status must be set to “auto”.  
- Post-installation, customer must demonstrate the fan speed varies below 80% for 1 hour based on zone conditions, via a weekly trend. |
| **Dedicated Outdoor Air System** | - Dedicated Outdoor Air System (DOAS) retrofits will be treated as a custom project.  
- If DOAS is coupled with VRF:  
  - Controls must lock out heating on VRF whenever free cooling is enabled.  
  - Heating setpoints should be well below free cooling setpoint.  
  - Heating/cooling system and HRV should be in an unoccupied mode at night. Recommended heating setback of >10 degrees F, and cooling setback of >6 degrees.  
  - Heating and cooling fans shall be off whenever setpoint is met. |
| **Refrigeration equipment and VRF heat pump equipment (with line sets)** | - Installer must have a refrigeration and air conditioning contractor’s license. See Refrigeration Licensing code requirements at [http://www.seattle.gov/sdci/codes/licensing-and-registration/refrigeration-licensing](http://www.seattle.gov/sdci/codes/licensing-and-registration/refrigeration-licensing)  
- VRF retrofits must replace electric resistance heating unless the new system is a ground- or groundwater-source VRF. |
| **Data Center and IT efficiency measures** | - Data Center / IT measures are available for Commercial Customers only.  
- Uninterruptible Power Systems (UPS) ≥10 kVA may receive a $0.23 per kWh incentive, smaller systems <10 kVA qualify for $0.12 per kWh.  
- Plug load reduction shall use a custom calculation. Submetering may be required to determine the energy savings.  
- Computer Room Air Conditioners (CRACs) projects may be air-cooled, water-cooled, glycol-cooled, or fluid econo-cooled. New units must incorporate efficiencies above code requirements, such as VSDs or Electronically Commutated Motors (ECM) motors and controls.  
- Air flow management energy savings shall use a custom calculator developed by City Light. |

**Note:** An AHU includes both the supply and return fan.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Specifications</th>
</tr>
</thead>
</table>
| Other measures | - Process loads incentives are available for industrial customers. These require custom calculations.  
- HVAC controls upgrades (City Light will provide incentives based on the energy savings portion only, not the full scope of the project).  
- If your building must comply with the City of Seattle’s Tune Up ordinance, you may apply for Building Automation System controls improvement incentives 18 months prior to your required tune-up date. |

(City Light will provide customer with additional requirements if pursuing these measures)