

2019 BCSOP-MEASURE GUIDELINES

The following guidelines are applicable to certain measures offered through Oncor Commercial Standard Offer Programs. The supplemental information presented below is intended to help Service Providers to submit and complete a successful project. These guidelines do not address all measure requirements, and is not intended to replace the information in the Program Manual, in the event there is a conflict between information contained in these guidelines the Program Manual will take precedence over this document.

GENERAL

- Equipment must exceed applicable federal energy standards adopted at the time the Service Provider submits the Project Application.
- No used or reconditioned equipment shall be qualified for incentives. All equipment shall be new.
- Service Provider must follow all state and local building codes. Service Provider shall be responsible for licenses, building permits, and inspections. Any fees/payments for licenses, building permits, and inspections shall be paid by the Service Provider.

COOLING MEASURES

- Commercial retrofit of an existing central air-conditioning system with a new central air-conditioning system (packaged unit, chillers or split system consisting of an indoor unit with a matching remote condensing unit). The complete system must be replaced to be eligible for incentives.
- For the installation of split units, the model and serial number of the new equipment, including the Condensing Unit, Indoor Air Handling Unit, and Furnace (if not a Heat Pump), will be required. This information should be listed in the E3 File as separate line items (e.g., CU1, AHU1, FURN1; CU2, AHU2, FURN2, etc.).
- AHRI specification sheets are required for all HVAC units < 20 tons. For units \geq 20 tons, AHRI or manufacturer specification sheets at AHRI conditions are required.
- The rated (nominal) tonnage of new HVAC units is required (total net cooling capacity). If the tonnage is not listed in the AHRI or manufacturer specification sheets, this value can be calculated by dividing the total net cooling capacity (Btuh) of the unit by 12,000.
- The installed AHRI rated efficiency (kw/ton) of new HVAC units is required. If the efficiency is not provided in the specification sheets, this value can be calculated by using the kW/ton Calculator in the top right corner of the E3 File. For units < 5.4 tons, use the SEER rating as data input to calculate the efficiency. For units \geq 5.4 tons, use the EER rating as data input.
- The installed IEER or IPLV (kw/ton) value of the new equipment is required. For

eligible equipment, this will allow an incentive to be calculated for full and partial load conditions.

- For early retirement (ER) Only: Photograph of retired unit nameplate demonstrating model number, serial number, and manufacturer if blueprints are not provided; if photograph of nameplate is unavailable or not legible, provide a photo and/or description documenting the reason why the nameplate photo was unobtainable (alternate forms of documentation can be approved at the evaluator's discretion)

LIGHTING MEASURES

IES Recommended Light Levels

Lighting Projects must meet Illumination Engineering Society (IES) recommended light levels to qualify for an incentive, unless there is an approved exception by Oncor. Lighting retrofits that reduce the number of fixtures by 15% or more must submit a lighting simulation that includes all lighting being installed. Oncor may request a lighting simulation for any lighting project to document meeting IES recommended light levels.

Design Lights Consortium (DLC) Listing of LEDs

- When an "LED retrofit kit" is submitted to DLC for review, it is reviewed as a complete system to be used in a fixture housing approved for the application category. For example, a retrofit kit approved for use in parking lot/outdoor lighting may be used in a cobra head or shoe box fixture housing or other approved housing as long as the components of the actual kit are not modified. If any component of the kit is modified, the retrofit must be resubmitted to DLC in that configuration for review and approval.
- If a customer requests a custom LED retrofit kit, that kit must be submitted to the DLC for review and approval. Using components from an existing DLC approved fixture or retrofit kit to create a new fixture or retrofit kit does not make the new design "DLC Listed." The new configuration must be submitted to DLC for review and approval in the appropriate use category. If during an inspection it is determined that a fixture or kit has been modified, the project will fail inspection and the project may not be eligible for incentives.
- When an LED product is submitted to the DLC for review, it is submitted in one or more usage categories. Each category has different specifications and the product is only reviewed and listed for use in the category in which it was submitted and approved. If a product is approved for outdoor lighting and it is installed indoor (in a high bay application, for example), the product is not considered in DLC approved for the category and therefore ineligible for incentives. It is recommended that the manufacturer resubmit the product to DLC in the new usage category. In most cases, the same test data may be used and the DLC review time may be two weeks. If the product is then listed by the DLC in the appropriate usage category, then contact the Oncor Program Manager to proceed with your project.
- If during an inspection the LED product label does not match the DLC or ENERGY STAR® (ES) nomenclature, or the DLC or ES Model Number is missing from the

product label, the project cannot proceed until proof is provided that the installed LED is the same fixture listed by the DLC or ES. This may require the Service Provider and LED manufacturer to contact the DLC or ES to resolve the issue. Please note that the DLC allows manufacturers to submit private part numbers to be listed in conjunction with the DLC nomenclature.

- If a non-qualifying LED product is used on a retrofit project, then it must be listed on the measure detail and the wattage will be adjusted to match the pre-retrofit wattage and no incentive will be attributed to that product. See Non-qualifying LED fixture section below.
- DLC/ES are the default means to qualify product at Oncor discretion can allow service providers use alternative methods: LED lamps and fixtures must have their input power (wattage) and an L70 rated life (hours) verified through some combination of the following references: DesignLights Consortium™ (DLC), ENERGY STAR®, DOE LED Lighting Facts, or independent lab testing (e.g., LM-79, LM-80, TM-21, ISTMT). Rated life for LED fixtures should be greater than or equal to 50,000 hours and greater than or equal to 10,000 hours for integrated-ballast LED lamps.
- Wattage for installed LED fixtures may be rounded up or down to the nearest half watt; all other wattages should be rounded to the nearest watt.

The “Manufacturing” building type is specified with 1, 2, and 3 shift options:

- 1 Shift: typical operation of 9.5-11.5 hours per day and 4-6 days per week (< 70 hours per week)
- 2 Shift: typical operation of 18-20 hours per day and 5-6 days per week (70-120 hours per week)
- 3 Shift: typical operation of 24 hours per day and 5-6 days per week (> 120 hours per week).
- A letter or an email from the facility management team must be submitted with the project showing the facility shift hours and if the shifts are seasonal.
- “Outdoor Dusk-to-Dawn” applies to outdoor fixtures controlled by a photocell or timer with dusk-to-dawn operation throughout the entire year. Outdoor fixtures controlled by timers with less than dusk-to-dawn operation (excluding for athletic fields and courts) may be claimed separately using the “Outdoor Less than Dusk-to-Dawn” building type or using a Custom timer schedule.
- Outdoor: Athletic Fields and Courts applies to actual fields and playing courts.

New Construction Exterior Space Lighting Zones

To determine the appropriate lighting zones for outdoor lighting the first step is to define if the property is in either a rural or urban census tract. The US census bureau website <http://factfinder.census.gov/faces/nav/jsf/pages/searchresults.xhtml?refresh=t#none> will allow the service provider to search the facility’s address. An address shown as

rural will use zone 2 and an address shown as urban will use zone 3. The service provider will be required to attach a screen shot from the US Census Bureau website which shows the address and geographic type and code as part of the new construction project documentation.

FIXTURES INSTALLED WITHOUT LABELS, PARTIAL MODEL NUMBERS OR INCORRECT LABELS

In normal circumstances each fixture should have a label that includes a model number that has been qualified by DLC, Energy Star, Design Labs or Lighting Facts which must be verified prior to a project being paid an incentive. Instances when fixtures do not have a label the following procedures should be followed:

- Before a project is moved to the post inspection phase the Service Provider should attach photos of the manufacturer fixture labels (attached to the fixture, lamp or box label). If the label does not show the complete model number as shown on the DLC/ES screen shot, you may provide photos of the fixture boxes along with a copy of the packing slip which match the model numbers listed in the measure details. The number of fixtures on the packing slip should also match the number of fixtures which were actually installed on the project. The Program Manager will determine if the documentation is acceptable before moving the project to post inspection
- If the Program Manager determines any of the fixtures/lamps are not a qualified product or the product cannot be verified as a qualified product the Service Provider will show the product as a non-qualified fixture on the E-File or the Program Manager will allow the Service Provider a pre-determined amount of time not to exceed thirty calendar days to correct issue before the project is moved to post inspection
- If during the post inspection it is found that a fixture/lamp does not have a qualifying model number or the label is missing, the project may have a reduced incentive (not paying on those impacted fixtures) or it may be cancelled. Once the project is rejected back to the Service Provider and the Service Provider will have a maximum of thirty calendar days to get the fixture qualified. If the fixture is not qualified by the end of the thirty days the fixture will be shown as a non-qualifying fixture and the incentive will not be paid on these fixtures
- If a Service Provider has encountered multiple inspection issues, including data incomplete, missing labels and/or inaccurate reporting, management may determine to cancel the project

Non-qualifying LED Fixtures – New Construction

The intent of Oncor's energy efficiency programs is to encourage and incent the use of DLC and ES approved LED fixtures. In some cases, the use of non-qualified LED fixtures is unavoidable. In those cases, incentives will not be paid on the non-qualifying fixtures. The following process will be used for evaluating projects with non-qualifying fixtures:

- New Construction Project Qualification
 - Non-qualifying ratios will be calculated using the following equations:
 Non-qualifying fixture ratio = Non-qualifying fixtures / Total fixtures
 Non-qualifying wattage ratio = Total Non-qualifying wattage / Total project wattage
 - If the non-qualifying fixture ratio or the non-qualifying wattage ratio exceeds 10%, the project will not be permitted in any Oncor energy efficiency program, and will be denied incentives.
- If the project passes qualification, the following adjustments will be made to the project:
 - Service providers will list all fixtures / retrofit kits in the N1 file. Non-qualifying fixtures will be designated using the non-qualifying fixture code.
 - When the non-qualifying fixture code is added, a pop-up will request the rated wattage of the fixture from the cut sheet. The wattage will be multiplied by a factor of 5. The adjusted wattage will be used in the calculation of the lighting power density and savings reduced accordingly.

Oncor will validate the non-qualifying fixture ratio and the non-qualifying wattage ratio using actual installed equipment. Oncor reserves the right to cancel a project in any phase of construction, should either ratio exceed 10%. To avoid reduced incentives or cancelled projects, service providers should use only DLC qualified fixtures in all projects.

PLEASE NOTE: As the Service Provider, you are responsible for ensuring that the products ordered and installed are DLC or ES listed and are used in appropriate applications. If DLC or ES information cannot be located, labels are incorrect or the product has been modified and does not qualify, it is the responsibility of the Service Provider to explain to the customer the issues related to the project. Any violation of use of the DLC and ES logo, or misrepresentation of a product may be reported to the DLC and ES by Oncor for their review.

Fluorescent fixtures and High Intensity Discharge Fixtures

- For Retrofit and New Construction applications:
 - All fluorescent fixtures must use a ballast from the CEE list to qualify for incentives. CEE has currently stopped listing products, so products on the last published CEE list will be eligible for incentives.
 - Metal Halides, and High and Low Pressure Sodium fixtures are not eligible for incentives.

Streetlights

- Streetlights are not eligible for incentives. Streetlights may be identified by either rate

class or function. Parking lots, wall packs, and other outdoor non-decorative lighting tied to a commercial meter are eligible for participation in the Commercial Standard Offer Programs as deemed eligible by Oncor.

Fluorescent Fixtures

- Only with complete new luminaries, hard-wired ballast retrofits, or socket conversions.
- Luminaries with cord and plug connected devices are not eligible for incentives.

Electronic Ballasts

- Electronic ballasts must be CEE approved and/or classified as NEMA Premium, and have a Total Harmonic Distortion (THD) of no greater than 20%.
- Electronic ballasts must have a THD of no greater than 32% for luminaries having 5' to 8' lamps.

Fluorescent Luminary Retrofits

- T-12 lamps and magnetic ballasts qualify for retrofit using a T-8 lamp and electronic ballast baseline.
- Lamps must have a Color Rendering Index (CRI) of at least 75.
- Lamps must be tri-phosphor.
- Delamping energy savings may qualify for incentives if done in conjunction with lighting retrofits.
- Unused lamps, lamp holders, and ballasts must be removed from luminary.
- Old lamps and ballasts must be disposed of in accordance with local, state, and federal environmental laws.

Screw-In LEDs

- LED lighting Projects must be used in permanent lighting scenarios to be eligible. Exhibit lighting or display lighting which use track lighting is not eligible.

LED Linear Replacement Lamps Type Eligible

External Driver Lamp-Style Retrofit Kits (UL Type C) qualified by DLC

External Driver Lamp-Style Retrofit Kits (UL Type C): Eligible

- Must employ lamp holders to connect to the fixture being retrofitted
- Cannot operate off the existing fluorescent ballast
- require rewiring of the existing fixture to replace the ballast with an external driver

- wired to receive only the low-voltage electricity supplied by the external driver

Oncor will pay incentives on External Driver Lamp-Style Retrofit Kits (UL Type C) qualified by DLC:

Two-foot, three-foot, four-foot, eight-foot, and U-bend LED "tubes" designed to replace two-foot, three-foot, four-foot, eight-foot, and U-bend fluorescent lamps, respectively. Products in this category employ lamp holders to connect to the fixture being retrofitted, do not operate utilizing the existing fluorescent ballast, and require rewiring of the existing fixture to replace the ballast with an external driver. The lamp holders are then wired to receive only the low-voltage electricity that is supplied by that external driver.

When multiple fixtures have one ballast converting to one driver it will be considered as one fixture.

Incentives for Type "C" LED tubes is paid per fixture and not based on kW and kWh savings. Oncor will pay a flat \$6.00 per fixture for DLC qualified Type "C" LED Tubes*. The SP must show the total wattage of the fixture based on the number of tubes multiplied by the DLC rated wattage. Example: the fixture has 3 LED Type "C" tubes rated at 15 watts per tube the fixture code would be shown as LED045-TUBE. The total wattage must be less than the fixture it is replacing and/or the total wattage of the room represented on the line in the E-1 file.

***Typical fixture and screw-in lamp replacements are paid based on kW and kWh reductions and an additional 15% payment for all Projects, calculated on a site basis, outside the five-county Metroplex area. The Metroplex area includes Dallas, Tarrant, Rockwall, Denton, and Collin counties. This additional adder does not apply to tube LEDs.**

LED Linear Replacement Lamps types Not Eligible

Replacement Lamps (UL Type A): Non-Eligible

- can operate off an existing fluorescent ballast
- do not require mechanical or electrical changes to the fixture

Internal Driver/Line Voltage Lamp-Style Retrofit Kits (UL Type B): Non-Eligible

- do not operate off the existing fluorescent ballast.
- require rewiring of the existing fixture to bypass the ballast and send line voltage directly to the lamp holders

Dual Mode Internal Driver (UL Type A and Type B): Non-Eligible

- operate off the existing fluorescent ballast

- also have the ability to operate off of line voltage if the troffer is rewired to bypass the ballast

Incentive will only be paid for replacing fluorescent lamps to TLED lamps and ballast to drivers.

Like for like lamps replacements are considered maintenance and are not eligible for incentives.

Lighting Control Definitions

Control Type	Description
None	No controls
Occupancy	Adjusting light levels according to the presence of occupants -Wall or Ceiling-Mounted Occupancy Sensors -Integrated Fixture Occupancy Sensors -Time Clocks -Energy Management Systems
Daylighting (Indoor)	Adjusting light levels automatically in response to the presence of natural light -Photosensors
Outdoor	Outdoor on/off photosensor/time clock controls; no savings attributed because already required by code
Personal Tuning	Adjusting individual light levels by occupants according to their personal preference; applies to private offices, workstation-specific lighting in open-plan offices, and classrooms -Dimmers -Wireless ON/OFF switches -Personal computer based controls -Pre-set scene selection
Institutional Tuning	Adjustment of light levels through commissioning or provision of switches or controls for areas or groups of occupants -Dimmable ballasts -On/Off or dimmer switches for non-personal tuning
Multiple Types	Any combination of the types described above

AIR INFILTRATION AND INSULATION MEASURES

- Ceiling insulation and air infiltration measures apply only to master metered

multifamily projects.

- The Service Provider will be required to supply the manufacturer and model number of the outside air-conditioning equipment for the measure treated.

ENERGY STAR ROOF MEASURES

- Reflectivity must be at least 65% at three years, have at least a 10-year life, and be listed on the ENERGY STAR® list of qualified products.
- The manufacturer specification sheet is required.