SMUD™
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2014 Advanced Lighting Controls Incentive Program
Project Requirements

- All projects must be pre-approved by SMUD
- Lighting control system must be on SMUD's Qualified Product List
- Customers / Contractors are responsible for obtaining applicable Building Permits and compliance with applicable Title 24 Building Energy Codes
- Customer must complete and sign a custom incentive application (SMUD form # 2387)
- A copy of the Contractor's proposal must be provided to SMUD. At a bare minimum, the proposal must include the following information:
    - Completed Savings Calculation Spreadsheet (this spreadsheet will be provided by SMUD)
    - Manufacturer cut sheets for ALL products to be used
    - Project costs including labor, materials and software
    - Manufacturer warranty
    - Installation (labor) warranty
    - Training for the customer
    - One year (minimum) technical support agreement
    - Block diagram and description of the system architecture to show how SMUD's OpenADR capable requirements will be met
- Ability to dim the lighting systems down to the following minimum levels*:
    - Linear fluorescent lighting: continuous dimming down to 20%
    - LED lighting (all formats): 10%
    - Compact fluorescents: dimming down to 50%
    - HID (e.g. metal halide): continuous dimming down to 50%
    - Induction: continuous dimming down to 50%

*Please note: It will often be necessary to install dimming ballasts or drivers as part of a project to facilitate dimming. Unless the facility already has full dimming capability, this must be included in the project. Bi-level or step dimming is not acceptable for this program.

- Exterior lighting is now eligible for this program if it is integrated with a qualified interior project. Please contact SMUD for guidance).

- LED lighting technology (if used) must meet the following requirements:
  - Must be dimmable (down to 10%)
  - LED fixtures must be approved by either Energy Star or the Design Lights Consortium (DLC) http://designlights.org/solidstate.about.php
  - Integral LED replacement lamps must be approved by Energy Star
  - LED T8 replacement lamps are not eligible for this program

- All projects will require a Graphical User Interface (GUI) and control system to be configured to provide the following features:
  - Display "near real time" status of the lighting fixtures (i.e. on, off dimmed mode) overlaid onto a floor plan or reflected ceiling plan of the controlled space. "Near real time" is defined as being updated at intervals of no longer than every three minutes.
  - Ability to modify operating schedules for the lighting fixtures within each lighting control zone via internal as well as external means (software interface, Internet connection, Smartphone, etc.).
  - Ability to measure, track and generate reports for the following parameters in each lighting control zone:
    - Energy consumption (kWh)
    - Electrical demand (kW)
    - Estimated energy savings (compared to original lighting system)
    - Estimated utility bill cost savings (compared to original lighting system)
  - Ability to set maximum operating limits (e.g. fixtures limited to 80% of maximum output) for each lighting control zone via the software interface. This function is often referred to as "task tuning" within the lighting controls industry.

- Ability to modify time delays and operating schedules for occupancy and/or vacancy sensors within each lighting control zone via the software interface.
- Ability to modify settings for the daylight harvesting sensors within each lighting control zone via the software interface.
- Auto Demand Response (ADR) capable (please see details below).

AutoDR capable is defined as a lighting control system or EMCS that has:

- Broadband Internet connection, DSL or better, with continuous connectivity to the Internet.
- The ability to communicate via the Internet with OpenADR version 1.0 (and its successors) compliant interface(s) to include an OpenADR software client; Client Logic with Integrated Relay (CLIR); or similar hardware/software devices, such as JACE devices, that are capable of being configured to utilize OpenADR protocol to trigger programmed AutoDR strategies within the facility(s).
- Programming functionality and configurability to enable AutoDR strategies to be designed and implemented (e.g. lighting system demand limiting).
- The ability to be configured to respond to an OpenADR signal sent via the Internet from a Demand Response Automation/Management system or Demand Response Service Provider.
- Digital controls capable of responding to EMCS control signals for the purpose if effecting chang.es in the facility electrical load through preprogrammed AutoDR control strategies in the EMCS.
- Ability to select any lighting control zone for inclusion in DR load shed.