

Willdan Engineering Services, Strategic Program Initiatives

California Energy Efficiency Programs Deemed Lighting Strategy

March 3, 2022



Simplified Lighting Strategies

Custom: Modified Lighting Calculator

- Existing DEER assumptions and methods
 - HOU/Interactive Effects
 - Attributes (Building type, MAT, etc.)
 - Savings adjustments (GRR, NTG)
- Custom approaches approved via CPUC tool review
 - DLC/Energy Star product types
 - Standard practice baselines
- Continue to add features to support programs
 - DLC/Energy Star product types

Deemed:

Current Measure Packages

- Type A/B/C TLED
- Not currently using LED Highbay

Develop New Comprehensive Measure Packages

- Migrate approved MLC methods
- Include all DEER building types and applications
- Update measure/standard practice costs
- All MATs: AR/NR/NC
- All delivery types: Upstream, downstream, direct install

Tasks for Developing Comprehensive Lighting Measure Package

- Update existing technology table to reflect currently available replacement components (lamps, ballasts, fixtures, etc.)
- Measure definition:
 - Narrow output ranges to reduce savings uncertainty
 - Efficiency levels established to encourage adoption of highest efficacy levels where sufficient products are available
 - Tier 1: $50 \leq \text{efficacy percentile} < 75$
 - Tier 2: efficacy percentile ≥ 75
- Measure catalog with matching existing, standard practice (from MLC) and measure technologies
- Measure and standard practice costs
- Accelerated replacement due diligence requirements, guidance and tool kit
- Develop additional needed EUL values

Relationships of Modified Lighting Calculator and Measure Packages

MLC efforts supporting MP development

- Eligible products from applicable voluntary standards
 - DLC version 5 or 5.1
 - Energy Star version 2.2
- Standard practice baseline efficacies (lm/w) by product class
 - Based on analysis of DLC and EnergyStar product listing
 - Includes annual lm/w increase
- Missing deemed parameters
 - eg: EULs removed in recent DEER
- Existing=>measure case equivalence

Portions of an approved MP that would support improvement of MLC

- EUL updates
 - Legacy EULs removed by E-5152
 - New product classes (e.g. E* fixtures w/>3-year warranty)
 - Missing use sub-categories
- Due diligence/rigor data collection and documentation for accelerated replacement per E-5115
- Measure and standard practice costs
 - QA/QC check on project specific incremental costs

Willdan's Lighting Measure Package Objectives

- Mid-cycle Submission
 - subject to CPUC mid-cycle review process
 - effective in current program year
- Incorporate all DLC and Energy Star product classes approved for use in the MLC where DLC lists sufficient quantities to define a measure
- Deemed input power/output lumens for existing technologies
 - Linear fluorescent
 - Ballasted HID (metal halide, high/low pressure sodium, etc.)
 - Compact fluorescent fixture
 - Screw-in compact fluorescent
- Create a “catalog” of measures that include existing, standard practice and measure technologies