



Energy Efficiency Implementation Project (EEIP) Meeting

Austin, Texas

October 3, 2018



ELECTRIC UTILITY
MARKETING MANAGERS
OF TEXAS

TRM 6.0

Summary of Key Measure Updates



Vol 2 Residential

- LIGHTING:

- **Standard and Specialty LEDs/CFLs:** Increment EULs for approaching EISA 2020 backstop and update interactive effects

- HVAC:

- **Duct Efficiency:** Incorporate “alternative approach” and leakage category guidance



Vol 2 Residential

- HVAC (CONTINUED):

- **Central AC/HP:**

1. Clarify use of rated vs. nominal capacity
2. Authorize use of new construction baseline when replacing window units and evaporative coolers
3. Address upsizing scenarios related to multiple unit configurations
4. Clarify use of condenser age to approximate system age for early retirement when individual system components were installed at different types
5. Clarify use of default RUL for early retirement projects
6. Clarify early retirement documentation requirements



Vol 2 Residential

- HVAC (CONTINUED):
 - **Smart Thermostats**: Incorporate previously filed new measure
 - **Large Capacity HVAC**: Re-introduce measure for HVAC systems > 65,000 Btuh
 - **Evaporative Cooler Replacements**: New measure that will be filed separately and incorporated into TRM 7.0



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- ENVELOPE:
 - **Air Infiltration:** No “alternative approach” expected
 - **Attic Encapsulation:** Remove closed cell recommendation and clarify savings units (specified per square foot of conditioned space below treated attic)
 - **Cool Roofs:** Incorporate previously filed new measure and clarify savings units (specified per square foot of treated roof area)



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- DHW:
 - **HPWHs**:
 1. Update efficiency rating from EF to UEF
 2. Separate medium and high usage draw patterns
 3. Update savings assumptions and deemed savings values



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- APPLIANCES:

- **Ceiling Fans:** Update ENERGY STAR specification and update interactive effects to match RES lighting updates
- **Refrigerators:** Update reference for determining baseline refrigerator energy consumption for early retirement projects
- **Advanced Power Strips:** New measure that will be filed separately and incorporated into TRM 7.0



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- LIGHTING:

- **Lamps and Fixtures:**

1. New building types: “Prisons/Jails” and “Other” (minimum values from other building types)
2. Authorize use of multiple outdoor operating schedules
3. Separate outdoor space type into “Outdoor: Dusk-to-Dawn”, “Outdoor: Less than Dusk-to-Dawn”, and “Outdoor: Athletic Fields/Courts”
4. Update peak coincidence factors for compliance with current peak definition, resulting in separate CFs by climate zone
5. Allow rounding of LED lamp/fixture wattages to nearest half watt

- **Lighting Controls:** Update savings factor for multiple/combined controls

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- HVAC:

- **All replacement measures (Split & Packaged AC/HP, Chillers, and PTAC/PTHP):**
 1. Add “Data Center” building type
 2. Address scenarios related to multiple unit configurations (custom calculation)
 3. Clarify use of condenser age to approximate system age for early retirement when individual system components were installed at different types
 4. Clarify use of default RUL for early retirement projects
 5. Clarify early retirement documentation requirements



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- HVAC (CONTINUED):

- **Split/Packaged:**

1. Map air conditioner cooling coefficients to un-modeled heat pump cooling coefficients
2. Allow un-modeled heat pump heating coefficients to use “Other” building type

- **Computer Room Air Conditioners (CRAC):** New measure that will be filed separately and incorporated into TRM 7.0

- **HVAC VFDs:**

1. Add “no control” baseline for constant volume systems
2. Update savings for “outlet damper” part-load fan control baseline



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- ENVELOPE:

- **ENERGY STAR Roofs:**

1. Consolidated to single modeling based approach for all utilities/climate zones
2. “Other” option available for all non-listed building types
3. Savings dependent on square footage, building type, HVAC type, and existing/installed insulation
4. Peak savings factors were derived for compliance with current peak definition

- **Entrance/Exit Door Air Infiltration:** Incorporate previously filed new measure



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- FOOD SERVICE:

- **Demand Controlled Kitchen Ventilation:** New measure that will be filed separately and incorporated into TRM 7.0

- REFRIGERATION:

- **Door Gaskets for Walk-in & Reach-in Coolers/Freezers:** Incorporate previously filed new measure

- MISCELLANEOUS:

- **PC Power Management:** New measure that will be filed separately and incorporated into TRM 7.0



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- **Appendix B – Measure Life Calculations for Dual Baseline Measures:**
 - Clarified that approach is applicable to all dual baseline measures vs. only being applicable to early retirement measures(e.g. RES Lighting until 2020 baseline is effective)
 - Added second weighting option to claim first tier savings against reduced EUL vs. claiming weighted savings over full EUL



Vol 4 M&V Protocols

- HVAC:
 - **GSHPs**: Remove VRF from baseline table, correct savings equations to match commercial HVAC measures from Volume 2, and add winter peak demand equation
 - **VRF**: Correct savings equations to match commercial HVAC measures from Volume 2, and add winter peak demand equation
- New M&V protocol provided for Retro-commissioning to cover projects where substantial savings are expected due to O&M activities





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