

STAKEHOLDER MEETING

2014 TRM Update

July 15, 2013



Presented by the Statewide Evaluation Team:

 **Nexant**


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APEX
ANALYTICS, LLC

2014 TRM Update

COMMERCIAL/INDUSTRIAL MEASURES



OVERVIEW OF TRM UPDATES

- Addition of (24) New Measures (Interim Measure Protocols)
- Revisions to Existing Measures in 2013 TRM
 - Better Assumptions/Algorithms
 - New Codes & Standards
 - Evaluation results
 - Any clarifications needed (definitions, language etc.)
- Revisions to 2014 TRM to align with the Phase II Evaluation Framework



TRM UPDATE METHODOLOGY

- List of Measures or Updates compiled from Sources
 - 2013 TRM Final Order
 - SWE Audit Activities
 - Qualitative feedback from EDCs
- Update Sources
 - Collaborative review with EDCs
 - Primary data, PA-specific, contemporary
 - Literature review, adjoining states



OVERARCHING REVISIONS



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TOPIC # 1

Issue: Use of TRM to determine *ex ante* and *ex post* savings

Recommendation: The 2014 TRM will be in alignment with the Phase II Evaluation Framework

- Insert definitions for types of protocols, deemed savings values, stipulated variables, open variables, default values, measure, end-use categories, usage groups
- Insert a table clearly specifying the responsibilities of EDC ICSPs and ECs in using the standard measure protocols in the TRM
- Establish kWh thresholds above which customer-specific information should be collected



TOPIC # 1 CONTINUED

End-Use Categories & Thresholds:

- Categorize all measures into various end-use categories
- kWh thresholds will be established at the end-use category level
- If a project involves multiple measures/technology types within the same end-use category, the savings for all those measures/technology types should be grouped together to determine if the end-use falls below or above a particular threshold
- End-use metering is the preferred method of data collection for projects above the threshold, but BMS and panel data are acceptable
- EDCs are encouraged to meter projects with savings below the thresholds that have high uncertainty but metering is not required
- Values for variables that should be determined using customer-specific information will be described in the TRM



TOPIC # 2

Issue: Paradigm Shift (revisit measures in the TRM)

Recommendation:

- Revisiting all measures in the TRM to clearly define variables as stipulated variables or open variables



TOPIC # 3

Issue: Clarify TRM version to use for reporting claimed savings

Recommendation:

- For replacements and retrofits, the “in-service date” (ISD) or “commercial date of operation” (CDO) is used
- For new construction, the date when the building/construction permit is issued is used



TOPIC # 4

Issue: Update language about Custom Measure Protocols for C&I custom projects

Recommendation:

- Update all references in the TRM to “CMPs” and any related process to reflect the latest status of the CMP's as delineated in Phase II Evaluation Framework
- CMPs are no longer required, but instead all evaluation sampled custom projects require an SSMVP developed by the EDC evaluator which must be available for SWE review
- Add Mass Market Protocols to TRM where applicable



TOPIC # 5

Issue: Update Table 1-1,
Coincident Peak Demand
Savings, peak hours

Recommendation:

- The definition of summer peak is adopted from PJM which is applied statewide in the TRM

Source: PJM Manual 18B for Energy
Efficiency Measurement & Verification

Period	Energy Savings	Coincident Peak Demand Savings
Summer	May through September	June through August (excluding weekends and holidays)
Winter	October through April	N/A
Peak	8:00 a.m. to 8:00 p.m. Mon.-Fri.	2:00 p.m. to 6:00 p.m.
Off-Peak	8:00 p.m. to 8:00 a.m. Mon.-Fri., 12 a.m. to 12 a.m. Sat/Sun & holidays	N/A



TOPIC # 6

Issue: Update language in Section 1.1 allowing the EDCs to use alternative methods for calculating savings

Recommendation: Update language to be consistent with recent PEG discussions

“For an Act 129 program, EDCs may, as an alternative to using the energy and demand savings values for standard measures contained in the TRM, use alternative methods for calculating savings values. The EDCs, however, must track savings estimated from the TRM protocols and alternative methods and report both these values and justify the reason for deviating from the TRM in a compliance report provided to the Commission. The alternative measurement methods are subject to review and approval by the Commission to ensure their accuracy. “



TOPIC # 7

Issue: Provide guidance on line loss factors for T&D System Losses

Recommendation: Update language to be consistent with recent PEG discussions

“The electric energy consumption reduction compliance targets for Phase II of Act 129 are established at the retail level i.e. based on forecasts of sales. The energy savings must be reported to the Commission at the customer meter level, which is used to determine if EDCs have met their statutory targets for Phase II. For the purpose of calculating cost-effectiveness of Act 129 programs, the value of both energy and demand savings shall be calculated at the system level. The EDC specific electric line loss factors filed in its Commission approved EE&C Plans, or other official reports filed with the Commission should be applied to gross up energy savings from the customer meter level to the system level. The EDCs are allowed to use alternate loss factors calculated to reflect system losses at peaking conditions when available to gross up demand savings to the system level. The Commission encourages the use of the most recent and accurate values for line loss factors for energy and demand known to the EDCs, regardless of what was filed in the original Phase II EE&C Plans.”



TOPIC # 8

Issue: Revise weather mapping methodology in Section 1.16 (Impact of Weather)

Recommendations:

- Mapped PA cities to CA climate zones based on cooling degree hours and average wet bulb temperatures
- This alters the deemed savings

PA City	California Climate Zone
Allentown	CZ15
Harrisburg	CZ15
Philadelphia	CZ15
Pittsburgh	CZ4
Wilkes Barre (Scranton)	CZ4
Erie	CZ9
Williamstown	CZ15



TOPIC # 9

Issue: Update Appendix A (Measure Lives)

Recommendation:

- Review measure lives for consistency between measure protocols and Appendix A
- Ensure Appendix A contains a comprehensive list of measure lives



C&I HIGH PRIORITY MEASURES



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TOPIC # 10

eQUEST Modeling

- HVAC Measures
 - Update EFLH for heating and cooling systems
- Motors and VFDs
 - Update motor operating hours for HVAC system fans and pumps
 - Update ESF and DSF values for VFDs installed on fans and pumps



TOPIC # 10 CONTINUED

Key Tasks	
1	Determine TRM data needs
2	Create master list of runs
3	Obtain DEER prototypes
4	Incorporate PA-specific data in prototypes
5	Determine best batch processing approach
6	Perform simulations
7	Extract data from eQUEST output files
8	Review output for erroneous data
9	Compile and report



TOPIC # 10 CONTINUED

- 21 Building Types
 - Based on available and applicable DEER building prototypes
 - Separated by HVAC system type (DX systems or Built-up systems)
- Incorporate applicable previous baseline study and CBECS data to create PA-specific DEER building prototypes
 - TMY3 Weather files
 - PA Baseline Study (Primary)
 - End-use EUI
 - Equipment efficiencies
 - Building Vintages
 - CBECS (Secondary)

Education	Community College
	University
	High School
	Primary School
	Relocatable Classroom
Lodging	Hotel
	Motel
Retail	Small
	Single Story Large
	3 Story Large
	Grocery
Office	Small Office
	Large Office
Healthcare	Hospital
	Nursing Home
Industrial	Bio-Tech
	Light Industrial
Restaurant	Sit Down
	Fast Food
Other	Conditioned Storage
	Assembly



TOPIC # 10 CONTINUED

Key Findings

- Space heating/cooling temperature setpoints differ greatly from eQUEST default values
- Phase I Baseline Study site visits were all conducted in the winter

	Heating (Occupied/Unoccupied)	Cooling (Occupied/Unoccupied)
<u>eQUEST</u>	72 / 62	76 / 86
PA Baseline Study	69 / 66	71 / 75

Recommendation

- Use assumptions in 2013 TRM until Phase II Baseline Study is completed
- Update assumptions in the 2015 TRM based on eQUEST modeling



TOPIC # 11

C&I Lighting: TRM changes for linear fluorescent lighting

- New EPACT standards impact linear fluorescent bulbs and ballasts,
 - phase out magnetic ballasts (effective October 1, 2010), and
 - most T-12 bulbs (effective July 14, 2012)
- 2013 TRM Final Order
 - Baseline for all lighting projects is the existing lighting system until May 31, 2016
 - Starting June 1, 2016, the baseline will become standard T8
 - Consistent with 2012 IL TRM
- Commission directed SWE to revisit this assumption and update the protocol based on more recent secondary information if available



TOPIC # 11 CONTINUED

2014 TRM changes for linear fluorescent lighting

- Two Scenarios – New Construction (NC) & Retrofit
- Consistent with the 2013 IL TRM
- The SWE will continue to monitor these standards and make improvements for future TRM updates
 - Plan to collect T12 storage and expected improvement strategies with commercial customers during the 2013 C&I Baseline and Lighting Metering study.



TOPIC # 11 CONTINUED

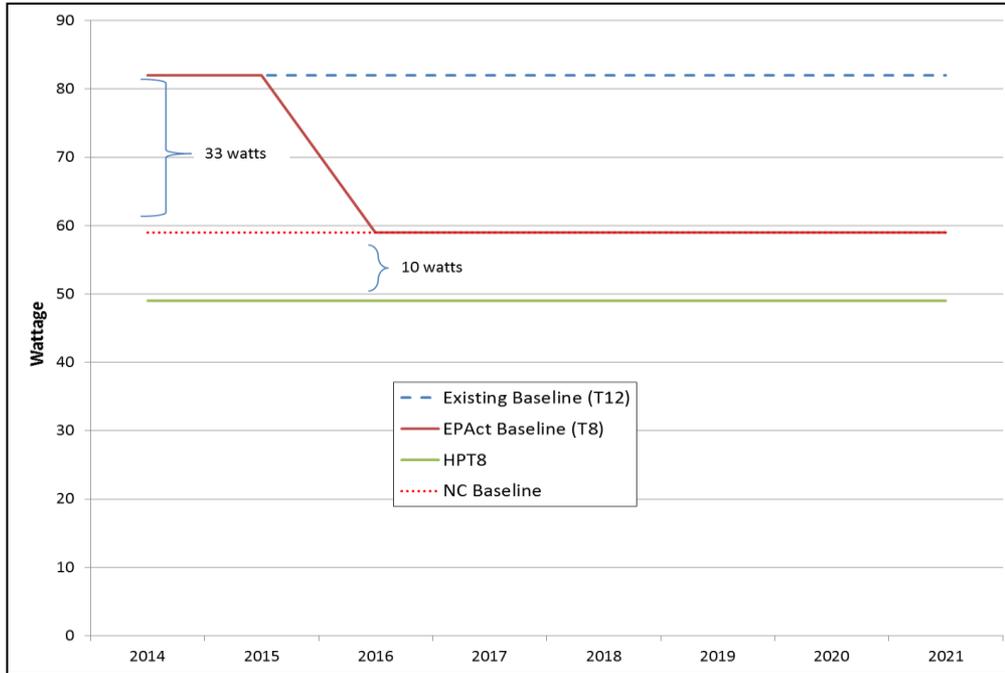
Proposed 2014 PA TRM treatment of T12 baseline:

	New Construction	Retrofit
Baseline Watts	Existing PA NC Codes	Prior to May 31 st , 2016, baseline is wattage of existing equipment. After May 31 st , 2016, baseline is equivalent standard T8 bulb.
Lifetime Savings	Existing PA NC codes for duration of measure life	Measures installed in 2014 will claim full savings for two years and 2015 for one year. Savings adjustment factors will be applied to the full savings for savings starting in 2016 and for the remainder of the measure life. Savings adjustment is equal to the ratio between wattage reduction from T8 baseline to HPT8 and wattage reduction from T12 EE ballast with 40 w lamp baseline, and is provided in reference table.



TOPIC # 11 CONTINUED

Example Savings Adjustment factors – used for lifetime savings <2016



Example of savings adjustment factor: 2 lamp T8 to 2 lamp HPT8 retrofit saves 10 watts, while the T12 EE with 40 w lamp to HPT8 saves 33 watts. Thus the ratio of wattage reduced is 30%.



TOPIC # 12

C&I Lighting: Methodology to estimate kW savings for control measures

- Include separate savings algorithms for fixture and control measures
- For all lighting fixture improvements:

$$\Delta\text{kWh} = (\text{kW}_{\text{base}} - \text{kW}_{\text{EE}}) * \text{HOU} * (1 + \text{IF energy})$$

$$\Delta\text{kW}_{\text{peak}} = (\text{kW}_{\text{base}} - \text{kW}_{\text{EE}}) * (1 + \text{IF demand}) * \text{CF}$$

- For all lighting control improvements:

$$\Delta\text{kWh} = \text{kW}_{\text{controlled}} * \text{HOU} * \text{SVG} * (1 + \text{IF energy})$$

$$\Delta\text{kW}_{\text{peak}} = \text{kW}_{\text{controlled}} * \text{SVG} * (1 + \text{IF demand}) * \text{CF}$$



TOPIC # 13

C&I Lighting: Clarification of usage groups and HOU values

- Fixtures should be separated into "usage groups" at the discretion of the EDCs' ICSPs and evaluation contractors
- If usage groups are considered, the annual HOU values for all usage groups should be estimated using facility staff interviews, posted schedules, BMS, or metered data
- If the project cannot be described by the categories listed in Table 3-4, or the project retrofitted only a portion of a facility's lighting system, select the "other" category and determine hours using customer-specific data



TOPIC # 14

C&I Lighting: Appendix C

- Update Wattage table based on EDC inputs
- Include separate tabs for calculating savings for fixture and control improvements



C&I LOW PRIORITY MEASURES



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REFRIGERATION – EVAPORATOR FAN CONTROLLERS

Issue: Review Power Factor assumption

- 2013 TRM assumes 0.6 for fan motors and 0.9 for compressor motors

Recommendation:

- Power factor value of 0.75 for fan motors
- Power factor value of 0.9 for compressor motors

Sources:

- ESource Customer Direct to Touchstone Energy for Evaporator Fan Controllers, 2005
- LBNL 57651 Energy Savings in Refrigerated Walk-in Boxes, 1998
- E Source Refrigeration Walk-in Cooler Controllers Purchasing Advisor, 2009
- All sources reviewed listed PF value of 0.6 for shaded-pole motors and 0.9 for permanent-split-capacitor motors. Evaporator fan motors are SP type or PSC type. Compressor motors are PSC type.



ENERGY STAR CLOTHES WASHER

Issue: Consider using separate average capacities for baseline and efficient units

- 2013 TRM assumes average capacity of baseline and efficient CW's as 2.8 cu.ft.

Recommendation:

Type	Capacity (cu.ft)	
	Baseline	ENERGY STAR
Front Loading	2.84	2.84
Top Loading	2.95	2.84

- The kWh and kW deemed savings values on average will increase by 13% (28 kWh and 0.0067 kW)

Source: CEC Appliance Efficiency database - lists all commercial front loading and top loading CWs that meet federal standards and ENERGY STAR requirements

LED CHANNEL SIGNAGE

Issue: Consider splitting deemed savings into 2 categories based on sign height

Recommendation:

- Include separate algorithms for indoor and outdoor applications
- Include separate deemed savings based on sign height

Sign Height	Power Demand (kW/letter)		Power Demand (kW/letter)	
	Neon	Red LED	Argon-mercury	White LED
≤ 2 ft	0.043	0.006	0.034	0.004
> 2 ft	0.108	0.014	0.086	0.008

Source: California Work Paper, 2010



Issues:

- Expand the protocol to include reach-in units
- Review mapping of California climate zones to update deemed savings

Recommendations:

- Include deemed savings for reach-in units
- Update deemed savings by mapping PA cities to CA climate zones based on comparable number of cooling degree hours and average wet bulb temperatures
- The kWh and kW deemed savings values on average will increase by 21% (10 kWh) and 25% (0.0003 kW) respectively



C&I REFRIGERATION – AUTO CLOSERS

Issues:

- Expand the protocol to include reach-in units
- Review mapping of California climate zones to update deemed savings

Recommendations:

- No source found for reach-in units
- Update deemed savings by mapping PA cities to CA climate zones based on comparable number of cooling degree hours and average wet bulb temperatures
- The kWh and kW deemed savings values on average will decrease by 1% (23 kWh) and 25% (0.06 kW) respectively



C&I REFRIGERATION – SUCTION PIPES INSULATION

Issue: Review mapping of California climate zones to update deemed savings

Recommendation:

- Update deemed savings by mapping PA cities to CA climate zones based on comparable number of cooling degree hours and average wet bulb temperatures
- The kWh and kW deemed savings values on average will increase by 31% (3 kWh) and 23% (0.0004 kW) respectively



DEFINITIONS

- Any definitions or other language in the protocols that need to be clarified in the TRM?



SCHEDULE

- The 2014 TRM update schedule is:
 - Spring/Summer: SWE and EDCs update TRM
 - July 15, 2013: Stakeholder meeting
 - Aug 29, 2013: Tentative TRM Order on public meeting agenda
 - Dec 19, 2013: Final TRM Order on public meeting agenda
 - June 1, 2014: 2014 TRM becomes effective



QUESTIONS?



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NOTES

Definitions:

- **Deemed measure protocols** have specified "deemed energy and demand savings values"; no additional measurement or calculation is required to determine deemed savings. These protocols also may contain an algorithm with "stipulated variables" to provide transparency into deemed savings values and to facilitate the updating of the deemed savings values for future TRMs.
- **Partially deemed measure protocols** have algorithms with stipulated and "open variables", thereby requiring measurement of certain parameters to calculate the energy and demand savings. Customer-specific information is used for each open variable, resulting in a variety of savings values for the same measure. Some open variables may have a default value to use when the open variable cannot be measured.
- A **stipulated value** for a variable refers to a single input value to an algorithm, while a **deemed savings estimate** is the result of calculating the end result of all of the stipulated values in the savings algorithm.
- **Open variables** are listed with a "default value" and an option for "EDC Data Gathering" in the TRM. When a measure indicates that an input to a prescriptive saving algorithm may take on a range of values, an average value is also provided in many cases. This value is considered the default input to the algorithm, and should be used when customer-specific information is not available.
- **Custom measures** are considered too complex or unique to be included in the list of standard measures provided in the TRM and so are outside the scope of this TRM.
- A **measure** is defined as an efficient technology or procedure that results in energy savings as compared to the baseline efficiency.
- An **end-use category** describes the categories of equipment that provide a service to an individual or building.
- A **usage group** is a collection of fixtures with approximately the same operating hours and schedules. A usage group can contain different fixture types.



Issues:

- Update deemed savings based on more recent studies as the savings expire after July, 2013
 - Source: Pacific Northwest Regional Technical Forum
- Remove cost and NTG ratio information from the protocol

Recommendation: Pacific Northwest's study is the most recent and comprehensive study available. No revisions will be made to the deemed savings.



LOW FLOW PRE-RINSE SPRAYERS

Issue: Review market baseline adjustment factor (0.95) to determine baseline flow rate for Retail Programs

Recommendation: Current baseline assumption is reasonable. No revisions will be made to the deemed savings.

Sources:

- Food Service Technology Center
- Global Industrial

Products	GPM
- BK Resources PRV-1	0.99
- Bricor B064 PRV	0.64
- Bricor B074 PRV	0.74
- Bricor B084 PRV	0.84
- Bricor B094 PRV	0.94
- Bricor B095NS	0.94
- Chicago Faucet 90-LABCP	1.1
- Encore KN50-Y002-12	1.2
- Fisher Ultra-Spray 2949 & 71307	1.15
- Fisher 10197 & 13641	0.7
- Krowne Metal Water Saver 21-129	1.24
- Meisheng M00985V-065G	1.24
- Meisheng M00985V-124G	0.65
- Meisheng M00985V-142G	1.24
- Meisheng M00985V1-124G	1.42
- Niagara N2180	1.6
- Strahman Kwik-Clean 3 (Straight Spray)	0.98
- Strahman Kwik-Clean 3 (5 Degree Fan Position)	0.98
- Strahman Kwik-Clean 3 (15 Degree Fan Position)	0.99
- Strahman Kwik-Clean 3 (Tri Tip Position)	0.91
- Strahman Kwik-Clean II	1.3
- T&S B-0107	1.42
- T&S EB-0107-C	0.65
- T&S B-0107-C	0.65
- T&S B-0107-C & EB-0107-C (60 Plate Test)	0.65
- T&S Equip 55V	1.42
- T&S Equip 55V-C	1.2
T&S Jetspray B-0108	1.51
- T&S Jetspray B-0108-C	0.65
- T&S B-2108	1.42
- Zurn Z80000-PR1	1.6



COMMERCIAL DUCTLESS MINI SPLIT HEAT PUMPS

Issue: Review Load Factor assumption (25%)

Sources:

- Northwest DHP Project, NEEA
- “Ductless Mini Pilot Study”, KEMA, Inc., June 2009

Recommendation: Use LF value of 25% until better information is available



2014 TRM Update

RESIDENTIAL MEASURES



EDC DATA GATHERING

- If an EDC does not wish to use the default values in the applicable TRM, they may use an EDC-specific variable to calculate and report *ex ante* savings where applicable
- Many of the previously ‘deemed’ variables now allow for EDC Data Gathering in the 2014 TRM, but **all still have a default value** that the EDCs can use if they choose.



LIGHTING UPDATES



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ENERGY STAR LIGHTING: COMMENT #1

Comment 1: Coincidence Factor of 5% is too low

- Latest Maryland report has CF of 9.1%
 - Based on recent metering study in MD
- Propose to use most recent MD value
 - Consistent with other recent studies
- Maryland study also assumes 3.0 hours/day
 - Will also update TRM HOU based on MD



ENERGY STAR LIGHTING: COMMENT #2

Comment #2: Cross-sector and Cross-service territory sales

- Default is 100% residential sales
- Per the framework, intercept surveys can be utilized to estimate EDC specific cross-sector rates
- Cross-service territory assumed to be offsetting between EDCs/neighboring states



ENERGY STAR LIGHTING: COMMENT #3

Comment #3: HOU and CF for cross-sector sales

- EDC data gathering should assess business type
- Apply appropriate commercial HOU and CF from the TRM look up tables
 - Future TRM may break out commercial screw-based bulbs



ENERGY STAR LIGHTING: COMMENT #4

Comment #4: In-Service Rates

- Residential deemed at 84%
 - Note UMP recommends estimating first year and using future year trajectories
 - Would increase installation rate to 98%
 - Discount Year 2 and Year 3 savings back to present value
- Commercial does not break out ISR
 - No research available on upstream commercial ISR
 - Recommend defaulting to residential ISR



ENERGY STAR LIGHTING: OTHER COMMENTS

Other Comments: Baseline Savings and Interactive Effects

- TRM will identify break out baselines for EISA vs. EISA-exempt bulbs
- TRM will include interactive effects
 - Efficient lighting produces less “waste heat” so requires less cooling



HVAC UPDATES



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ELECTRIC HVAC

- Added Alternate EFLH Tables for Cooling and Heating so that you can use
 - Default weighted values
 - EDC specific values
 - Value based on EDC Data Gathering
- Added a de-rate factor (GSHPDF) of 0.885 for GSHP heating COP and cooling EER to account for auxiliary water loop pump that is not factored into AHRI ratings.
- Modified the COP and EER used in GSHP algorithms to be system COP and EER including auxiliary pump de-rate factor.
- Reduced maintenance factors MFcool and MFheat from 10% to 5%
- Added an algorithm to calculate desuperheater savings.
- Set EFDSH to 17% of estimated water heater energy use

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CEILING / ATTIC AND WALL INSULATION

- Added an Attic Heating Factor (**AHF**) of **1.06** to the **Roof Component of Cooling Savings Algorithms** based on average hourly difference between attic temperature and outside air temperature and typical percentage of sunny or partly cloudy summer days for PA
- Revised R-Value of un-insulated wall from 3.0 to **5.0**



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DUCT SEALING

- Created a new measure protocol for Duct Sealing modeled after the approach used in both the Mid-Atlantic and Illinois Statewide 2013 TRMs
- The approach allows two options for calculating savings:
 - 1. Modified Blower Door Subtraction - Requires a blower door test and is the preferred method
 - 2. Evaluation of Distribution Efficiency - requires the evaluation of three duct characteristics below, and use of the Building Performance Institutes 'Distribution Efficiency Look-Up Table'
 - Percentage of ductwork found within the conditioned space
 - Duct leakage evaluation
 - Duct insulation evaluation



RESIDENTIAL NEW CONSTRUCTION

- Questions regarding oversizing of HVAC units in standard vs. efficient new homes
- Studies exist but none conclusively determine whether or not standard homes oversize HVAC units
 - Even if they do, units will run for less time if oversized (so lower CF)
- SWE Team still investigating additional research



WATER HEATING UPDATES



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WATER HEATING UPDATES

- For All Water Heating Measures
 - Adjusted the temperature of hot water to **123 degrees**
 - Allowed for EDC inputs for baseline tank size
- For Water Heating Fuel Switching Measures:
 - Combined all replacement fuels (gas, propane, and oil) into a single protocol.
 - Adjusted to reflect the Commission Order which requires fuel switching to ENERGY STAR measures
- For Water Heater Tank Wrap
 - Adjusted thermal efficiency of electric heater element



LOW FLOW FAUCET AERATORS AND SHOWERHEADS

- Updated usage values from MI Metering Study (2013)
 - Shows lower use of faucets/showerheads than prior assumptions
- Allow for additional open variables/EDC data gathering
 - Avg. number of persons per household
 - Avg. number of faucets/showers per home
- Account for percentage of homes with electric water heat
 - PA residential study: 43% of PA homes have electric water heater, allow EDC data gathering



ENERGY STAR APPLIANCES/ ELECTRONICS UPDATES



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ENERGY STAR APPLIANCE UPDATES

- Updated to reflect latest ENERGY STAR calculators
 - Clothes washers
 - Dishwashers
 - Dehumidifiers
 - Office Equipment
 - Room Air Conditioners
 - Clothes Dryers
 - Televisions



ENERGY STAR APPLIANCE UPDATES

- Updated to reflect latest ENERGY STAR Qualified Products List for
 - Refrigerators
 - Freezers



FURNACE WHISTLE

- Added Coincidence Factor of 70% to Table 2-5 (source: TRM Table 2-1 Residential Electric HVAC - References)
- Included an algorithm for calculating Unit Peak Demand Reduction cooling kWh savings and EFLH for cooling
- Calculated Peak Demand Reduction for each region



SMART STRIP PLUG OUTLETS

- Revised Idle kW of computer system from 0.0201 to **0.0049**
- Revised Idle kW of TV system from 0.0320 to **0.0085**
- Revised Coincidence Factor from 0.50 to **0.80**
- Revised Measure Life from 5 years to **4**
- Revised Daily hours of TV idle time from 19 hours to **20 hours**
- Revised deemed savings from 184 kWh to **48.9 kWh** based on algorithms and revisions to above accepted values
- Revised calculated Unit Peak Demand Reduction from 0.0130 kW to **0.0054 kW**



REFRIGERATOR / FREEZER RECYCLING WITH AND WITHOUT REPLACEMENT

- SWE will be updating the Unit Energy Consumption (UEC) and savings for recycled appliances using EDC Program Year Four data
- The coefficients of the equations do not need to be updated as they match the Uniform Method Project Protocol equations
- EDCs can use EDC specific data if desired



DISCONTINUED MEASURES



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DISCONTINUED MEASURES

- Home Energy Conservation Kits
 - Program no longer requires specific protocols
 - Add “kit-specific” In Service Rates to all individual measures provided in kits (EDC Data Gathering variable)
- Low-Income Lighting
 - Program no longer requires specific protocols



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RESIDENTIAL SWIMMING POOL PUMPS

- SWE Team is providing a default base pump horsepower (HP) for all pool pump protocols as this is not necessarily a readily available data point which a customer can supply. Many customers do not have the technical knowledge to determine the pump HP or kW
- SWE Team using data from the Pennsylvania baseline study to determine the default HP value
- SWE Team is correcting definitions of two variables in the savings algorithm

