

# Draft Guideline Document Deemed Modeled Measures



**CALIFORNIA**

TECHNICAL FORUM

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# Overview

2

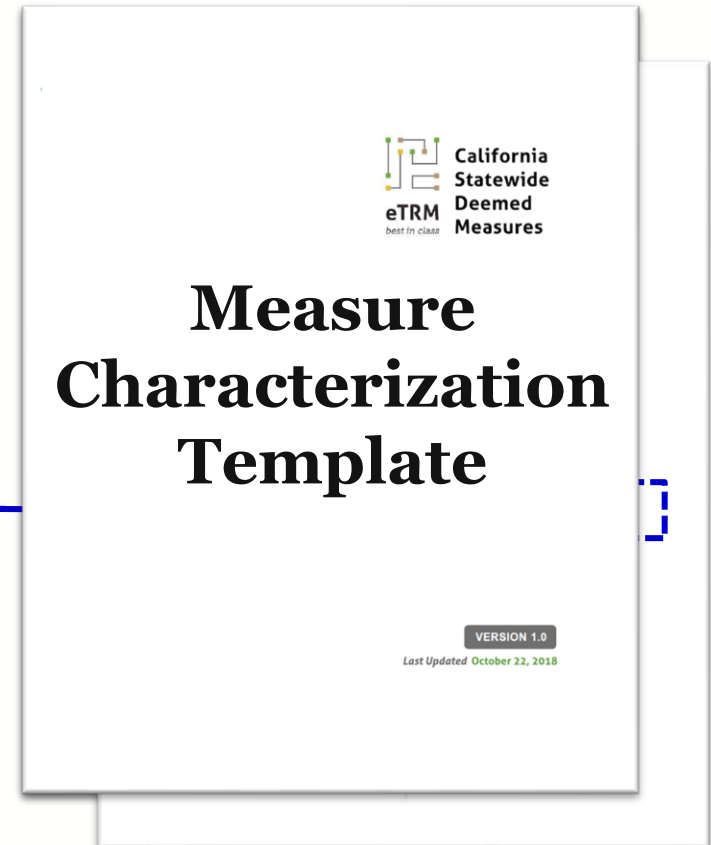
- Goal
  - Create consensus on the methodology for documenting modeled measures
- Value
  - As new measures are being submitted or existing measures are being resubmitted, provide the up-front guidance on specifically for modeled measures:
    - ✦ DEER Modeled
    - ✦ DEER Scaled
    - ✦ IOU Modeled (or 3P/PA Modeled)
- Action
  - Soliciting feedback on the information and presentation of data
  - Deciding if a subcommittee should be established



# Overview

3

- Energy Savings (kWh)
  - Overview
  - Baseline Energy Use Simulation
  - Measure Case Use Simulation
  - Calculation of Unit Energy Savings
  - Inputs and Assumptions
- Peak Electric Demand Reduction (kW)
- Gas Savings (therms)



Version 1.0 available at:  
<http://www.caltf.org/tools>

# Focus Questions

4

- Model Definition:
  - Model Summary
  - DEER Measure Definition
  - Keywords / Parameters
- References
  - Folder of models
  - Calculation file
- Peak Electric Demand Reduction Section
- Gas Savings Section

*Please feel free to give feedback today! (I will pause after every slide.)*

# Model Definition

5

- Is this a complete list?
- How would it change for Energy Plus?

## UEC Source Summary

| PLATFORM               | APPLICABLE OPTIONS                               |
|------------------------|--|
| Model Type             | DEER <i>or</i> DEER-Scaled <i>or</i> IOU Modeled |
| DEER Version           | <i>Ex:</i> D20v1                                 |
| Energy Modeling Engine | DOE-2.3 <i>or</i> DOE-2.2R                       |
| Energy Modeling Tool   | eQUEST version 3.65-7175                         |
| Batch Processor        | MASControl3                                      |
| Weather files          | CZ2010 Weather files                             |
| Prototype Version      | ...  |
| READI Version          | READI v.2.5.1                                    |

# Model Definition

6

- “Measure Offering IDs and DEER Energy Impact IDs” value table
- Is there additional information needed?

## Measure Offering IDs and DEER Energy Impact IDs

 [VIEW TABLE FULLSCREEN](#)

| INSULATION R-VALUE | STATEWIDE MEASURE OFFERING ID | DEER ENERGY IMPACT ID      | RELATIONSHIP | VERSION SOURCE |
|--------------------|-------------------------------|----------------------------|--------------|----------------|
| R-11               | A                             | RB-BS-Ceillns-VintR-Addr11 | Matched      | D20v1          |
| R-19               | B                             | RB-BS-Ceillns-VintR-Addr19 | Matched      | D20v1          |
| R-30               | C                             | RB-BS-Ceillns-VintR-Addr30 | Matched      | D20v1          |
| R-38               | D                             | RB-BS-Ceillns-VintR-Addr38 | Matched      | D20v1          |

# Model Definition

7

- How to present which models were created?

- NOTE: Permutations often combine model results.

## Building Type Description

| BUILDING TYPE  | BT CODE | MODELED |
|----------------|---------|---------|
| Assembly       | Asm     | Yes     |
| Primary School | EPr     | Yes     |
| ...            | ...     | ...     |

## Vintage

| VINTAGE ERA   | VINTAGE | VINTAGE CODE  | MODELED |
|---------------|---------|---|---------|
| Existing (ex) | V03     | Existing building stock built between 2002 and 2005 | Yes     |
|               | V07     | Existing building stock built between 2006 and 2009 | Yes     |
| ...           | ...     | ...   | ...     |

## Climate Zone

| CLIMATE ZONE | CLIMATE ZONE DESCRIPTION | MODELED |
|--------------|--------------------------|---------|
| 1            | Arcata Area (CZ01)       | Yes     |
| 2            | Santa Rosa Area (CZ02)   | Yes     |
| ...          | ...                      | ...     |

## HVAC Type (include only if applicable)

| HVAC TYPE                             | MODELED |
|---------------------------------------|---------|
| <u>cDXGE</u> (AC Unit with Gas HeatG) | Yes     |
| <u>cNCGE</u> (AC Only Unit)           | Yes     |
| ...                                   | ...     |

## Thermostat Options (include only if residential)

| THERMOSTAT OPTIONS | MODELED |
|--------------------|---------|
| t0                 | Yes     |
| t1                 | Yes     |
| t2                 | Yes     |
| t3                 | Yes     |
| t4                 | Yes     |
| t5                 | Yes     |

## Case Options (include only if residential)

| DESCRIPTION        | CODE       | MODELED |
|--------------------|------------|---------|
| Customer Average   | <u>CAv</u> | No      |
| 2005 Code/Standard | C05        | No      |
| ...                | ...        | ...     |

# Model Definition

8

- What is the general opinion on the formatting of these baseline and measure case simulation tables?
  - Case 1: IOU-Modeled Measure = Documents changes from a prototype
  - Case 2: All Modeled Measure = Documents changes between the base and measure cases



# Model Definition

9

- What is the general opinion on the formatting of these baseline and measure case simulation tables?
  - **Case 1:** IOU-Modeled Measure = Documents changes from a prototype

## Baseline Keyword Modifications

| KEYWORD  | DEER VALUE | MODIFIED BASELINE VALUE  |
|--|------------|--|
| DAY-SCHEDULE:VALUES[#]<br><br>Only in daily schedules being used for space occupancy | If > 0.9   | 0.9  |
| SYSTEM:ECONO-LIMIT-T   | Varies     | Varies by climate zone from 69°F to 75°F, depending on Title 24 2019 Table 140.4-E requirement |

# Model Definition

10

- What is the general opinion on the formatting of these baseline and measure case simulation tables?
  - **Case 2:** All Modeled Measure = Documents changes between the base and measure cases

## Baseline Keywords

| KEYWORD                                  | BASELINE     |  |
|--|--------------|--|
|  | DESIGN VALUE | SOURCE   |
| SUPPLY-KW/FLOW                           | Varies       | DEER2020 prototypes default                          |
| SUPPLY-MTR CLASS<br>or<br>SUPPLY-MTR-EFF | PREMIUM      | Code of Federal Regulations at 10 CFR 431 Subpart C. |
| ...                                      | ...          | ...  |

## Measure Keywords

| KEYWORD        | MEASURE   |  |
|----------------|---|--|
|                | DESIGN VALUE                                    | SOURCE   |
| SUPPLY-KW/FLOW | SUPPLY-KW/FLOW<br>[baseline] *adjustment factor | DEER2020 default adjusted for increased motor efficiency to 92.5% typical for 2 hp and 3 hp SRM.<br><br>Southern California Edison (SCE). 2019. "SWHC041-01 SRM Datasheets.zip." |
| ...            | ...   | ...  |

# Model Definition

11

- What is the general opinion on the formatting of these baseline and measure case simulation tables?
  - **Case 2:** All Modeled Measure = Documents changes between the base and measure cases

## Measure Keyword Modifications

| KEYWORD                 | BASELINE VALUE                     | MEASURE VALUE  |
|-------------------------|------------------------------------|--|
| SYSTEM:FAN-EIR-FPLR     | One-speed_basecase<br>Fan EIR fPLR | Two-speed_standard Fan EIR fPLR<br>Two-speed_NEMA Fan EIR fPLR<br>Two-speed_PMM Fan EIR fPLR |
| SYSTEM:AIR/TEMP-CONTROL | VARIABLE                           | STAGED-VOLUME  |
| ...                     | ...                                | ...  |

# References

- What is the correct set of files that modelers would want to see within these folders?
- How should it change depending upon the modeling tool?
- Sample Text:
  - SWHC004: **R998** - Pacific Gas and Electric Company (PG&E). 2019. “SWHC004-01\_Model\_Files.zip”
    - ✦ Zip folder name formatting for modelling files:  
(Measure ID)-(Version)\_Model\_Files.zip
    - ✦ NOTE: All modeling files should either be INP and/or PD2 and attached in a zip folder
    - ✦ Located in the “Calculation of Unit Energy Savings” section

# References

- What can be done to standardize the contents of a calculation file?
  - The main purpose of this file is to perform the weighting of modeled values to create savings values.
- Sample Text:
  - SWHC030: **R1022** - Southern California Edison (SCE). 2019. “SWHC030-01\_Calcs\_Files.xlsx”
    - ✦ Folder name formatting for calculation files:  
(Measure ID)-(Version)\_Calcs\_Files.xlsx
    - ✦ NOTE: Calculation files should provide weighting and any calculations needed to derive UES
    - ✦ Located in the “Calculation of Unit Energy Savings” section

# Peak Electric Demand Reduction & Gas Savings

14

- What additional information could be included beyond standard stock text?
- Is there any guidance on when the gas savings methodology should be repeated or expanded on?

# Next Steps

15

- We will also reach out the EAR Team
- Cal TF Staff will compile feedback on the first draft
  - Before this meeting
  - During this meeting
  - After this meeting (before May 14<sup>th</sup> – 3 weeks)
- Based upon feedback from members, we will either:
  - Compile the second draft (end of May) or
  - Convene a subcommittee group to review the comments before creating the second draft (mid May)
  - 2<sup>nd</sup> draft will be sent to this group at the end of May (assuming no big issues arise)
- Review the final guideline at the June 25<sup>th</sup> meeting