

Cal TF Update for the Policy Advisory Committee



CALIFORNIA
TECHNICAL FORUM

CAL TF STAFF

MAY 20, 2019

Agenda

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- eTRM Governance – Annette Beitel
- eTRM Launch Plan Key Questions – Annette Beitel
- Modeling Charrette – Annette Beitel & Roger Baker
- Stage 2 Items & White Papers – Jennifer Barnes & Ayad Al-Shaikh
- Close - Annette

eTRM Governance

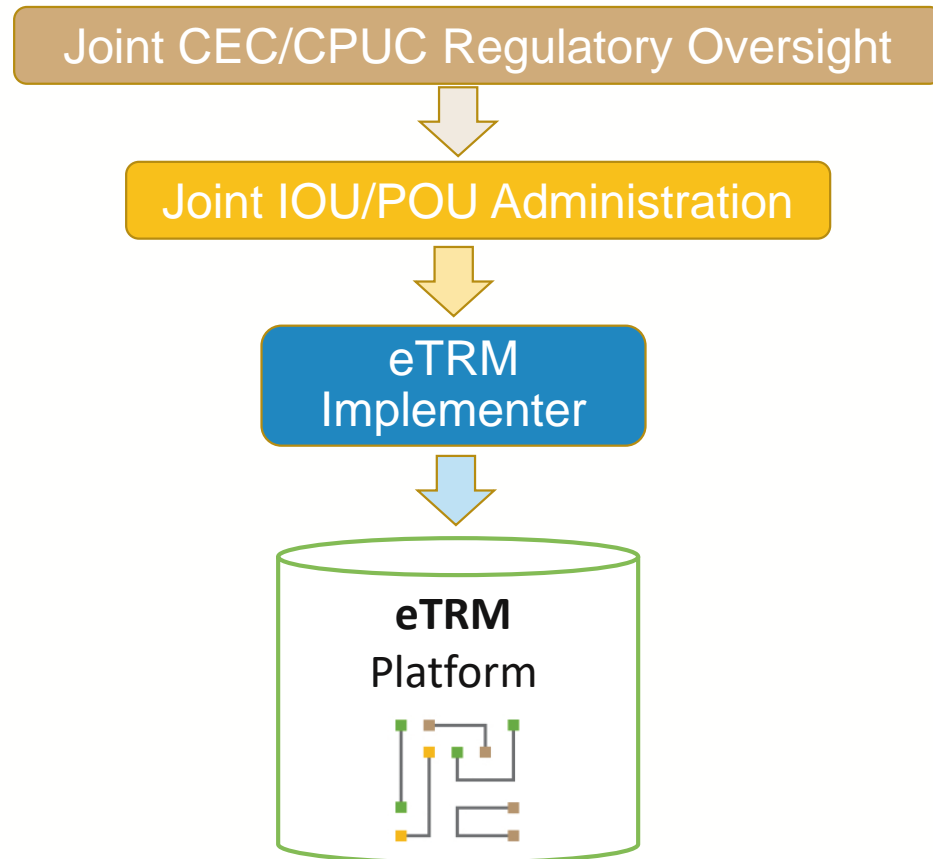
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ANNETTE BEITEL
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Platform Governance: Model 1

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Platform Governance: Model 2

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Joint CEC/CPUC Regulatory Oversight



IT
Contractor



eTRM
Platform



Key Governance Questions

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- Ownership
 - IOU/POU **OR** CEC/CPUC
- Who funds?
 - IOU/POU **OR** CEC/CPUC
- Who controls values?
 - CPUC (for IOUs)
 - POU (for POU)
- Who updates HIMs? (currently known as DEER measures)
 - CPUC Staff/ex ante consultants
- Who proposes new measures/updates to existing measures
 - IOUs, POU, 3P
- Who maintains and makes changes to eTRM **tool**? (not values)
 - CEC/CPUC **OR** eTRM administrator
- Roles and responsibilities in an eTRM world



eTRM: Key Questions to Address Before Launch

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Key Questions Before Launch

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eTRM and DEER co-exist **OR** eTRM replaces DEER

How will eTRM fit into the CPUC tool “ecosystem”
(Can eTRM **really** replace all DEER functions?)

- ❑ CET
- ❑ CEDARs
- ❑ PEAR

Can eTRM house all current information that is in
DEER for **all** active measures?

- ❑ Can eTRM be a complete repository of current information

Governance

Launch Plan

Cal TF Modeling Charrette: PAC Preview



ANNETTE BEITEL & ROGER BAKER
MAY 20, 2019

Business Plan Goal

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Develop High-Level Proposed Approach for Achieving Statewide Consistent Approach To Building Simulation Modeling in California.

“Consistent” is not intended to mean “the same” or “identical” modeling

CPUC ED Staff Goals

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DEER 2021 Draft Scoping Memo explores use of other building simulation tools beyond DOE2:

“This is another issue that has been raised in many venues, especially with the increased use of the EnergyPlus™ building simulation tool for other state-sponsored work (e.g. California Energy Commission Title 24 compliance tools) and custom projects.”

Staff is seeking stakeholder input:

- ❑ Why do we need to change?
- ❑ How do we get to the desired outcome?
- ❑ How to fund effectively, particularly cost of converting DEER prototypes?

Draft scoping memo acknowledged CalTF role in organizing this charrette

Planned Charrette Agenda

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May 30, 2019: 9:30 am to 4:30 pm, PEC

- Morning: **Meeting Goals and Current State**
 - History of Energy Modeling in California; Current Use Cases and Current Tools
 - Case Studies (Merced, Cal TF): Current Challenges
 - Open Discussion – Stakeholder Current Experience
- Afternoon: **Future State and Discuss Path Forward**
 - Case Study (LADWP) Innovative use of Modeling Tools
 - Discussion of Metrics for Evaluating Models
 - Team Exercises (2)
 - ✦ Identify practitioner needs, issues, concerns, recommendations
 - ✦ Reach agreement on desired modeling “Future State”
 - Discuss path for CPUC to accept advanced building tools
 - Identify Next Steps

Issues & Challenges: Case Study

UC Merced 2020 Project

- 5 different models for different use cases required for each building



Example courtesy of Steve Kromer

Use Cases

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Use Cases: CA uses for building simulation modeling

For each use case:

What building simulation engine(s)?

What building simulation “wrappers”?

What building prototypes?

Are inputs well-documented?

Are outputs calibrated?

Are models transparent or “black boxes”?

Use Case Examples

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CEC	CPUC	Other	Future
Code development Code compliance Demand forecast CEUS Urban footprint	Deemed measures Custom measures/project Project analysis (SBD) EM&V (i.e., potential studies?)	Forecast load impacts Benchmarking Local ordinances Greenhouse gas targets	LA Project Large-scale regional models to identify where interventions will be most cost-effective

Metrics

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What metrics should be used to evaluate models?

Can the metrics be “general” across all use cases,
or

Should they be tailored to the use case?

Metrics: Examples To Consider

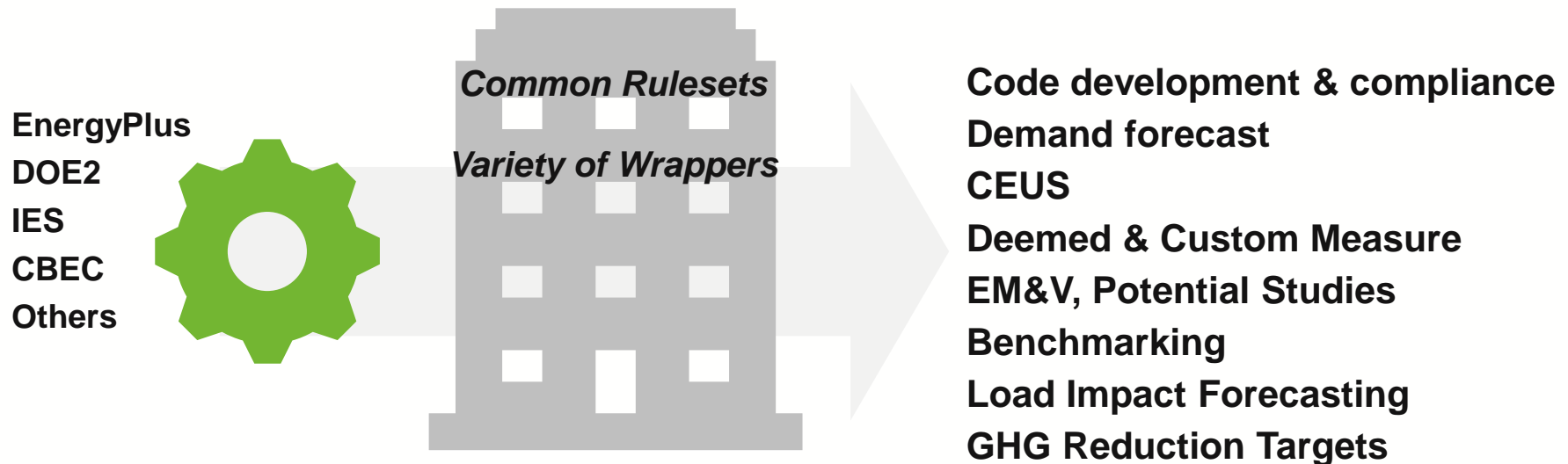
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Policy	Functionality	Technical Rigor & Breadth	User Experience	Cost	Administrative
Meets State policy directives	Transparent Reproducible	Meets industry standards Model validated Model capabilities	Ease of user interface(s) Learning curve	Cost to use model	Funding for updates, bug fixes & new features

Desired Future State

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- A variety of building simulation models are available and accepted.
- Each model can serve a variety of use cases for the same building



Stage 2 Items & Whitepapers



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JENNIFER BARNES
AYAD AL-SHAikh
MAY 20, 2019

Stage 2 Defined

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Throughout the measure consolidation process, TF members identified opportunities to improve or refine the measures

- Newer or more robust data sources

However, CPUC ED gave clear direction that the consolidation process only merge, *not* update, the existing measures

Stage 2 issues are those that were out of the scope of the Stage 1 measure consolidation

Captured 316 Stage 2 items

Stage 2 Roadmap Development Process

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TF Review

- TF Members Reviewed & Refined
- End Use Discussions in TF Meetings
- 2 Rounds: October & December 2018
- 316 Items

Cal TF Staff Prioritization

- Minor adjustments to align between end use groups
- Updated Status based on ongoing activity
- 87 Items

2019 Roadmap

- Will pursue high priority & open items in 2019
- 13 Items

Stage 2 Policy Issues

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- Cost Update
 - No consistent approach to developing measure level cost

- Load Shape Update

- Not 8760
- Not weather sensitive



- GHG

- Not currently calculating GHG reductions

- Collapsing Permutations

- Today: 20M permutations – only 5% used

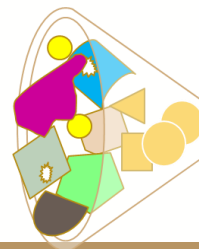
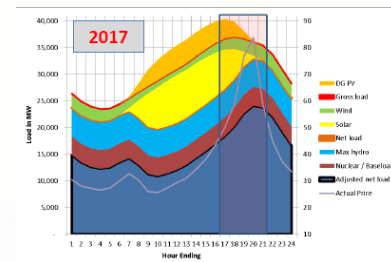
- Effective Useful Life / Remaining Useful Life

- Accelerated Replacement for Lighting

- Water Energy Nexus (Calculator)

- eTRM API to CET & back

- Custom Measures



Stage 2 Technical Issues

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- Water pumping/irrigation pump overhaul savings
 - Review/update methodology for pump overhaul disposition savings
- Ag Pump VFD & Enhanced VFD
 - More sensitive variables to distinguish savings
- Appliance
 - Remove PA dependencies which are due to the DEER Basis Factor.
- Commercial Refrigeration
 - 1.05 Walk-in Cooler Evaporative Fan Cycling & VFD Controls:
 - Change Normal Unit to "Rated HP" from "Each".
 - 1.17a Like-for-like Replacement of High Efficiency Refrigerated Display Cases:
 - New modeled measure to capture savings of upgrades from open to closed display cases required due to changing prototypes and changing code baseline.
- VSD Pool & Spa Pump
 - Align savings methodologies between multi-family and commercial.

Close

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- Move next PAC teleconferences to
 - June 3
 - June 10
- We'll send out revised agendas for upcoming PAC teleconference; let us know if you have additional topics
- In-person meetings
 - Governance/Launch and 2020
 - Likely early September
- Happy to meet/talk one-on-one anytime.
 - We'll be reaching out individually to discuss governance/launch/2020 as needed.