



# MEMORANDUM

TO: Energy Efficiency Branch, Energy Division, CPUC  
FROM: Ayad Al-Shaikh, Roger Baker, Jennifer Barnes, Jennifer Holmes, Tim Melloch, and Annette Beitel, Cal TF Staff  
RE: Comments on the Draft Scoping Memo for the DEER 2021 Update  
DATE: May 13, 2019

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## I. Overview

The California Technical Forum (Cal TF) Staff appreciates the opportunity to comment on the proposed scope to update the Database of Energy Efficiency Resources (DEER) for program year 2021 (Draft Scoping Memo), distributed April 29, 2019.<sup>1</sup> The key focus of our comments is to identify work that Cal TF has completed or is underway that can be leveraged by the Energy Division and its consultants to avoid duplication of effort and unnecessary expenditure of resources. In addition, we comment on a limited set of technical issues that relate directly to the ongoing technical review that Cal TF Staff is conducting as part of the consolidation of workpapers into statewide deemed measures.

Cal TF Staff has appreciated the ongoing dialogue and collaboration it has had with both the Energy Division Staff and its consultants to ensure that the Cal TF work is valuable and useful to all integrated demand-side management (IDSM) stakeholders and is consistent with policies for advancing California's ambitious clean energy targets and state policy objectives.

The remainder of this memo is organized as follows: Section II provides a background of the California electronic technical resource manual (eTRM), its congruence with prior regulatory policy set forth by the CPUC, and current status; Section III includes our comments on the Draft Scoping Memo; Section IV provides concluding remarks. Supporting documents referenced within these comments are provided as attachments.

## II. eTRM Background, Congruence with Prior CPUC Regulatory Policy Directives, and Status

### A. eTRM Background

The Cal TF has focused on two main objectives since 2017: 1) the development of an electronic Technical Reference Manual (eTRM) and 2) the consolidation of utility-specific and DEER deemed measures into a single set of statewide-consistent, standardized deemed measures that will be used by program administrators (PAs) and implementers in California,

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<sup>1</sup> Energy Efficiency Branch, Energy Division, California Public Utilities Commission (CPUC). 2019. "Solicitation for Comments on Scope of Update for Database of Energy Efficiency Resources for program year 2021 (DEER2021) and error corrections for program year 2019 and 2020." April 29, 2019.

including the investor-owned utilities (IOUs), the publicly-owned utilities (POUs), RENs, CCAs, and third-party implementers.

The purpose of the eTRM was set forth in a memo jointly authored by Cal TF and CPUC Staff, submitted in August 2016, and subsequently discussed with the Chief of Staff for the Assigned Commissioner to Energy Efficiency (See Attachment A).<sup>2</sup> A pertinent excerpt from this memo is provided below:

The purpose of the eTRM is to **consolidate California ex ante savings information currently contained in the Database of Energy Efficiency Resources (DEER), non-DEER workpapers, and the publicly owned utility (POU) TRM into a user-friendly, well-documented repository.** The repository will contain all methods used to calculate energy savings for all deemed measures in California, as well as all final ex ante savings values and associated parameter values (measure life, cost, net-to-gross values, expected useful life, etc.), and sources for all values and methods. **Upon completion of the project, the eTRM will replace the existing Ex Ante Database and DEER as the only repository of Commission-approved deemed measure values.** The expectation is that the repository will be used by all administrators and implementers, including publicly owned utilities (POUs).

The statewide eTRM will:

- Be an easily understood and searchable tool that takes advantage of current relational database technologies;
- Provide easily accessible source(s) of data underlying each parameter (including any relevant regulatory authority for parameters with regulatory origins);
- Consolidate and replace overlapping measures that currently exist in the various Program Administrator and implementer portfolios with one set of measures and savings parameter values;
- Clearly identify each measure's "regulatory status" (e.g., reviewed and approved, passed-through so not as-of-yet reviewed, interim approval);
- Clearly identify the measure savings certainty (i.e., whether the measure possesses stable, well-established and verified parameter values versus newer, less established or verified savings parameters);
- Facilitate measure "vintaging" and regular, scheduled approval, updating, and sunseting of savings parameter values by POUs and the Commission (or Commission Staff, in cases of Commission-delegated authority); and
- **Allow for a smooth transition away from the various deemed measure repositories (Ex Ante Database, READI, IOU workpapers, and the various POU platforms) currently used in California.** [Emphasis added.]

The key point from this Cal TF-CPUC joint memo is that *the eTRM was never intended to supplement, but instead was intended to replace, DEER.* Moreover, the core element of the eTRM project has been to collect, consolidate, and standardize all existing deemed measures in California which necessarily include all active non-DEER and DEER measures that previously

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<sup>2</sup> Memo from Annette Beitel; California Technical Forum Staff and Pete Skala, Katie Wu, and Carmen Best; CPUC Staff to Dave Gamson, Chief of Staff to Commissioner Carla Peterman, "Proposal for development of California Electronic Technical Reference Manual" (August 16, 2016).

were housed in multiple forms and places, including the “DEER ecosystem” (ex ante database/data tables and deeresources.com and deeresources.net websites), individual utility workpapers, and the POU technical reference manual.

### **B. eTRM Congruence with Prior CPUC Regulatory Policy Objectives**

The Cal TF designed and has implemented the eTRM development and measure consolidation to be aligned with the following CPUC and state policy objectives, as described further in Attachment B.

- Improves the Usability and Transparency of All Ex Ante Values (D.15-10-028, pp. 97 – 98).
- Facilitates a Tighter Linkage Between Ex Ante Values, Program Tracking Data and Ex Post Studies (D.12-05-015, p. 359).
- Results in a Single Set of Statewide Measures (D.12-05-015, p.54; Ex Ante Team 2017 Workpaper Guidance Memo, p. 7.)
- Achieves Measure Standardization- Across the State (D.05-01- 055, p. 131.)
- Achieves Measure Standardization- Across the IOUs (ALJ Ruling Regarding Non-DEER Measure Ex Ante Values (ALJ Gamson, November 18, 2009, pp. 1-2)).
- Yields a Single Website for all Commission- adopted Ex Ante Values (D.11-07-030, pp. 27 and 49.)

### **C. eTRM Status**

The development of the eTRM is complete and is functioning consistent with initial design specifications. Statewide measures are being uploaded into the eTRM and are viewable by those who have access.

The consolidation of IOU-specific measures to develop statewide measures is complete; the statewide deemed measures have been affirmed by Cal TF and are now being submitted to, reviewed, and approved by the Energy Division consultants on a schedule established early in the process. The final measures will be submitted for approval in July 2019.

Cal TF Staff expects to “publish” (make publicly accessible) all approved statewide consolidated measures within the eTRM by October 1, 2019.

## **III. Comments**

The Draft Scoping Memo identifies some activities that could leverage Cal TF work. In some instances, however, the proposed DEER update work overlaps with Cal TF work that has already been completed or that is significantly underway and scheduled for completion later this year. Cal TF Staff comments herein focus on the areas of leveraging opportunities and overlap, and on select technical issues.

## A. Comments on Section 2 “Considerations for future DEER update cycles” of the Draft Scoping Memo

### 1. DEER website, tools, and database system integration and updates

#### *Catalog All Active DEER Measures (pp 5-6)*

Cal TF Staff maintains a list of active measures and their associated workpapers that is updated monthly. In particular, through extensive work with the IOUs and POUs, Cal TF Staff has catalogued and maintains all active deemed measures and associated workpapers used in California. We refer to this list as the “statewide measure list.” Because all measures used in an IOU program *must* have an approved workpaper (per prior CPUC Staff guidance) and cannot be used straight from DEER, the statewide measure list is, in fact, the catalogue of all active deemed measures (DEER and non-DEER). Also note that the statewide measure narrative includes a mapping of the statewide measure Offering ID with the DEER measure ID, if necessary.

*Cal TF Staff Recommendation #1: Cal TF Staff recommend that the Energy Division and its consultants use the statewide measure list compiled and maintained by the Cal TF to identify all active deemed measures, including all active DEER measures.*

#### *Review and Document All Active DEER Measures (pp 5-6)*

Through an extensive process involving the IOUs, POUs, and third parties, the Cal TF Staff has already reviewed, developed standardized narratives for and *documented* (identified and linked supporting references) all statewide deemed measures. As noted above, all active DEER measures are a subset of the statewide measures that are being submitted to and reviewed by the Energy Division consultants as per the established submittal plan. Cal TF Staff has documented the statewide measures using the Statewide Data Specification that the Cal TF developed as a result of extensive review by the IOUs, POUs, and CPUC Staff and its consultants<sup>3</sup> to ensure the Statewide Data Specification contained the fields needed for compatibility with CEDARs, CET, and IOU and POU internal databases. The Statewide Data Specification contains a Word template used to describe the measure and key elements of the measure in narrative form in a consistent format with a consistent level of detail for all consolidated measures, plus includes access to all references. (This narrative is referred to as the Statewide Measure Characterization.) The Statewide Data Specification also includes an Excel file for information about the measure that is numeric rather than a narrative; this Excel file includes data that is used to create the four ex ante tables currently required for all measures.

It is important to note that during the statewide measure consolidation process, Cal TF Staff devoted extensive resources to thoroughly and accurately document each statewide measure such that the sources for inputs, assumptions, and calculations are not only transparent but accessible via the eTRM reference library. This effort included the identification of *original* sources to increase transparency of the vintage and sources of data relied upon for the

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<sup>3</sup> Bryan Pena (CPUC Staff) and Bryan Ward (CPUC data consultant), Sound Data Management (CEDARs consultant) and SBW (now the CPUC “Group D” consultant).

estimation of measure savings and cost, and to cease the circular referencing of DEER and TRMs for other jurisdictions that has been increasingly problematic in recent years. Despite our efforts, and due to the poor and scattered documentation of DEER, the original sources and/or methods to derive a small subset of the DEER values could not be located; Cal TF Staff fully supports the Energy Division Staff consultants' objective to help fill in these gaps.

Another outcome of the measure consolidation process was the identification of measure-specific technical issues and technical policy issues by the Cal TF Staff, Cal TF members, and other technical experts who participated in subcommittees during 2018 and 2019. These issues – referred to as “stage 2 issues” to denote they were out of the scope of the stage 1 measure consolidation – have been reviewed and ranked, with highest-priority items identified as topics that the Cal TF will address in the upcoming year. However, some of the stage 2 issues are beyond the purview of the Cal TF and should be considered to be included in the scope of the DEER2021 update.

All active DEER measures already have a complete measure characterization narrative and Excel data file. However, in some cases (such as for select HVAC measures), Cal TF Staff was unable to locate DOE 2.2 models used to create the values. Cal TF Staff is interested in working with the Energy Division consultants to identify any gaps that exist so that the consultants can seek to fill those gaps.

In summary, the Energy Division Staff and its consultants do not need to review and document all active DEER measures because this work has been completed already by Cal TF Staff, with input from the IOUs, POUs and a broad range of stakeholders, with the exception of some gaps that Cal TF Staff has identified and would welcome having the Energy Division consultants seek to fill.

*Cal TF Staff Recommendation #2: Cal TF Staff recommends that the Energy Division Staff and its consultants start with the completed statewide measure narratives and data files and work with Cal TF Staff to identify any gaps (in models, references, etc.) that need to be filled.*

#### *Remove Old DEER Measures (pp. 5-6)*

The DEER “ecosystem” is an extensive repository of information that has been developed over time for a subset of the active and prior measures included in the IOU portfolios. Cal TF Staff believes it is important to retain DEER only as a historical archive of all measure information prior to the development of statewide measures and updates for the 2020 program year. It is not necessary for the Energy Division or its consultants to remove old measures from DEER because Cal TF Staff has already effectively separated “old” and “new” (or active) measures as part of the consolidation process to develop statewide measures.

*Cal TF Staff Recommendation #3: Retain the DEER “ecosystem” as the historical archive of current and past information for deemed measures prior to the 2020 updates.*

*Cal TF Staff Recommendation #3a: Use the eTRM as the complete repository of all active and future statewide measures and supporting documentation.*

*Get “more measures back into DEER, with goal of reducing the total number of workpapers.”*  
(p. 6)

As set forth in Section II above, the eTRM is intended to be the *sole repository of all statewide measures*. The goal of one single repository of statewide measures is consistent with prior Commission decisions starting over five years ago:

ED believes that the “official” frozen DEER and non-DEER ex ante values be archived such that all the frozen values are clearly available for public review in a manner so that the utility reporting of portfolio accomplishments can be shown to be utilizing the official frozen values. (D.11-07-030, p. 27.) We will require the Energy Division to compile all Commission-adopted frozen values into one website. (Id. at p. 28).

Findings of Fact: It is important that the adopted frozen DEER and non-DEER ex ante values be archived and available for public review. (Id. at p. 44) Ordering paragraph 6; ED shall compile all Commission-adopted frozen ex ante energy savings values into one website. (Id. at p. 49).

The Energy Division consultants should not be tasked with the creation of “more DEER measures;” the eTRM represents a single set of statewide measures that already includes all active DEER and non-DEER measures. Moreover, the distinction between “DEER” and “Non-DEER” measures is artificial and soon to be irrelevant – the Energy Division Staff or its consultants can make and/or propose changes to any existing measure regardless if it is/was in DEER or not; the transition to statewide measures housed in the eTRM makes this distinction essentially irrelevant.

*Cal TF Staff Recommendation #4: The Energy Division Staff and its consultants should not be tasked with “getting more measures back into DEER.”*

*Cal TF Staff Recommendation #4a: The Energy Division and its consultants should identify the statewide measures that need to be updated as part of each annual update. Subsequently the Energy Division should direct its consultants or the IOUs to update the identified measures.*

*Reduce the total number of workpapers (p.6)*

Over the past eighteen months, Cal TF Staff has undergone an extensive and systematic process to identify all workpapers for measures currently in use, identify overlapping workpapers, and to consolidate all active overlapping workpapers into a single statewide measure for which all inputs, assumptions, calculation methods have been “harmonized.” This

process required extensive and ongoing engagement of Cal TF Staff with all IOUs, select POUs, and a broad range of stakeholders and subject matter experts through a well-documented public process. As a result, the number of IOU-specific workpapers has been reduced from over 400 to an expected total of approximately 130 statewide deemed measures (with another two dozen or so that only the POUs will use, for a total of approximately 155).

As such, there is no need to include the task to “reduce the total number of workpapers” in the DEER 2021 update, because Cal TF Staff has already significantly reduced the number of workpapers, by eliminating out-of-date workpapers, and consolidated overlapping workpapers.

*Cal TF Staff Recommendation #5: The DEER 2021 update scope of work should not include “reducing the number of workpapers.”*

*Cal TF Staff Recommendation #5a: Resources should focus on the task of reviewing and approving all statewide consolidated workpapers that are being submitted for review and approval.*

## 2. Overhaul the deeresources.com website

*Redesign deeresources.com website (p.6)*

Parties have expressed concerns about DEER for many years (see, for example, comments that Cal TF Staff filed four years ago – Attachment C). Cal TF Staff, and we assume the utilities and many other stakeholders, would have welcomed an effort to address the inadequacies of deeresources.com website anytime during the ten-year period from 2006 to 2016 during which parties repeatedly expressed difficulties with extracting information from DEER, understanding information in DEER, and identifying references for required values in DEER.

Acknowledging the concern and shortcomings of DEER, the Draft Scoping Memo (middle of p. 6) describes a potential update effort that would:

***Be more valuable than all the other updates combined*** as it would document key assumptions and processes and could expose old data and information that is no longer necessary. ***Due to the magnitude and scope of this effort, it would need to be multi-year effort and the first step would be identifying where the system is truly broken ...*** [Emphasis added.]

*However, the effort described above should absolutely not be undertaken given the creation of the eTRM.*

The eTRM is a state-of-the-art relational database (DEER is not) with a modern user interface that contains all active statewide deemed measures (DEER-ex ante database contains only a subset of measures) in a single repository along with supporting references linked to the values they support. The deeresources.com website (a housing for references) is not linked to the ex ante database (a housing for measures) or the deeresources.net website (a housing for dispositions and workpapers). The burden is on the PAs and implementers to connect these various resources when necessary.

Furthermore, the eTRM was developed in one year (not a multi-year process) with a very reasonable budget (\$650,000, far less than has been spent on DEER in a single year) that was co-funded by six entities. The features and functionality of the eTRM (i.e., the business and technical requirements) were finalized with input from staff of the CPUC, the California Energy Commission (CEC), the four California IOUs, and the two largest POUs in the State.

The eTRM was developed on a modern software “stack” and can be easily updated and enhanced year-after-year. The process to develop enhancements/add-ons for the eTRM will be systematic and based upon user input. In contrast, the DEER “ecosystem” is based on an archaic platform without the modern relational database features that make the eTRM tool easy-to-use, and the information housed within it easy to access, understand, and modify.

Finally, the Cal TF Staff held numerous demonstrations of the eTRM for a broad range of stakeholders. Post demonstration surveys indicate that the eTRM is clearly and significantly superior to DEER. (See Attachment D).

Finally, we emphasize again that the original purpose of the eTRM was to replace DEER. Cal TF is working with the IOUs and POUs, and will work with the CPUC and CEC to develop a transition and launch plan so that the DEER “ecosystem” can become the historical deemed measure archive and the eTRM can be the complete repository of all active, standardized, statewide consistent deemed measures, as was the original purpose for developing the eTRM.

*Cal TF Staff Recommendation #6: Do not devote any additional funds or resources to improve the usability of the DEER database/website; doing so would be duplicative, time intensive, and be an unnecessary and imprudent use of ratepayer funds.*

*Cal TF Staff Recommendation #6b: Energy Division Staff and its consultants should work with the Cal TF Staff and the eTRM funding organizations to identify future enhancements to the eTRM that are of interest to CPUC Staff and its consultants.*

*Compile a user guide or rulebook similar to the PG&E Rulebook. (p.6)*

In addition to overhauling the deerresources.com website, the Draft Scoping Memo suggests that historical information should be compiled into a statewide rulebook. Cal TF Staff and the IOUs have already worked to leverage the information in the PG&E Rulebook to be applicable to the development of deemed measures on a statewide basis. Version 1.0 of the Statewide Deemed Workpaper Rulebook<sup>4</sup> was posted to the Cal TF website in March of 2019 and will be updated jointly by the IOUs and Cal TF Staff on a quarterly basis to incorporate any new Energy Division directives.

*Cal TF Staff Recommendation #6c: Do not devote any resources to create a statewide user guide or rulebook. Rather, Cal TF Staff recommends the Energy Division Staff and its consultants participate in the quarterly process to update the Statewide Deemed Workpaper Rulebook.*

<sup>4</sup> *Statewide Deemed Workpaper Rulebook. Version 1.0.* March 20, 2019.  
Available at: [http://www.caltf.org/s/SW-Deemed-Workpaper-Rulebook\\_Version-10.pdf](http://www.caltf.org/s/SW-Deemed-Workpaper-Rulebook_Version-10.pdf).



### 3. Revisit the Need for Operating Both the Ex Ante and PEAR Databases (pp. 6-7)

The PEAR Database was developed to allow the Energy Division's former Ex Ante Review team to change ex ante values outside of the change management protocol that governs the Ex Ante Database. The existence of two very similar databases has created confusion and leads to the unnecessary expenditure of funds to maintain and keep both databases in alignment.

*Cal TF Staff Recommendation #7: Discontinue maintenance and updating of multiple databases for ex ante values.*

*Cal TF Staff Recommendation #3: Retain the DEER ecosystem as the historical archive of current and past information for deemed measures prior to the 2020 updates.*

*Cal TF Staff Recommendation #3a: Use eTRM as the complete repository of all active and future statewide measures and supporting information.*

*Cal TF Staff Recommendation #7a: Work with the Cal TF and stakeholders to develop a governance document for maintenance and updating of the eTRM.*

### 4. Fix READI hosting/porting issues or develop a web interface (p.7)

READI has several issues and problems and limitations, only one of which (hosting/porting issues) is described in the Draft Scoping Memo. The issues associated with READI are summarized below:

- READI does not provide access to a complete set of deemed ex ante measures. As established by CPUC Staff analysis last year.  
*The eTRM will include a complete set of deemed measures.*
- READI does not allow linking of values to references that support the values.  
*eTRM links references directly to the values they support. In addition, through the measure consolidation process, Cal TF Staff identified numerous primary references for values that are not contained in DEER.*
- READI does not allow all key parameters associated with a measure to be viewed at one time. READI requires users to "piece together" values associated with a particular measure, a challenging and difficult task to identify the correct parameters that apply to a value.  
*The eTRM allows users to access the entire measure narrative and associated values in a single interface with all methods, values, and linked references on single web page that is downloadable to PDF format for the characterization and Excel format for values.*
- READI does not generate information in a form that can be readily uploaded into the CET.  
*In the next phase of eTRM development, the eTRM will include a feature whereby information needed for cost-effectiveness calculations in the CET will be downloadable in a format that can be easily uploaded into the CET.*

The eTRM modern web-based interface was designed and developed with input from a broad range of stakeholders (including the IOUs, POUs, and CPUC Staff) and was designed to fix all issues that users had identified with READI. The Draft Scoping Memo falls short of addressing all READI issues, which have been addressed with the eTRM.

*Cal TF Staff Recommendation #8: Do not devote any resources to fix the READI hosting/porting issues (or any other issues associated with READI).*

*Cal TF Staff Recommendation #6b: Energy Division Staff and its consultants should work with the Cal TF Staff and the eTRM funding organizations to identify future enhancements to the eTRM that are of interest.*

## **5. Consider Opening DEER up to the use of other Building Simulation Tools (pp.7-8)**

Formal Commission policy, as reflected in prior Commission decisions and other documents (such as the RFP for the EM&V consultants) is that there is no single, approved building simulation modeling tool for the development of deemed ex ante measures. However, in the past, the experience of workpaper developers was that measures developed using building simulation tools other than DOE 2.2/eQuest were routinely rejected by the then ex ante review team. Notably, the lead consultant for the Ex Ante Review team at that time who was routinely rejecting measures not developed in DOE 2.2/eQuest also owned DOE 2.2/eQuest, a clear conflict of interest.

Nonetheless, there are several important questions that need to be answered such that updated and new measures can be developed using other building simulation tools, as practical, including:

*How can DEER assumptions be efficiently and effectively incorporated into building prototypes for other building simulation tools?*

*What showing must be made to demonstrate that alternative building simulation tools yield reliable savings values?*

Cal TF will be hosting a modeling charrette on May 30, 2019 that will include participation from a broad range of stakeholders. The charrette will document the current state of building simulation modeling for code compliance, and for the development of both custom and deemed measures. One objective of this charette is to frame the current state of issues that must be addressed such that other building simulation tools can be used for the development and updating of deemed measures.

Following the charrette, Cal TF Staff will lead the development of a Technical Position Paper (a technical white paper) that will lay out questions, issues, needs, concerns, and recommendations regarding use of building simulation tools in code compliance, and custom and deemed measure development.

*Cal TF Staff Recommendation #9: Cal TF Staff recommends that the Energy Division Staff and its consultants participate in the “Modeling Charette” as well as the development of the Technical Position Paper on building simulation modeling for code compliance, and custom and deemed measures.*

*Cal TF Staff Recommendation #9a: Consider implementing recommendations that emerge from the Cal TF modeling charrette process.*

## **B. Comments on Attachment A: DEER2021 Update Summary**

*Section 2.2 Complete Measure Definitions to Reduce Workpaper Maintenance (pp. A-4 - A-5)*

Attachment A, Section 2.2 of the Draft Scoping Memo describes the development of “complete measure definitions” for all DEER Measures (Page A-4), which includes both the narrative and the data elements. As noted previously, Cal TF has already developed complete measure definitions (narrative and data elements) for all active statewide workpapers, which includes all active DEER measures (since DEER measures can only be used after a workpaper is created based on the DEER measure.) Also as noted, the Energy Division Staff and its consultants will receive and be able to review all active measures and the associated workpapers. If the Energy Division consultants would like to make changes to the “measure definitions” (meaning the narrative explanation or data elements) of any DEER measures, they can do so while they are reviewing the complete set of active statewide measures submitted for review and approval. Thus, there is no need for the Energy Division consultants to embark on a separate task to “complete measure definitions” for DEER measures; Cal TF Staff has already completed this work as part of the measure consolidation process.

Furthermore, in addition to the “complete measure definitions,” Cal TF Staff has already located nearly all references that support each measure. As noted previously, Cal TF Staff devoted extensive resources to thoroughly and accurately document each statewide measure such that the sources for inputs, assumptions, and calculations are not only transparent but accessible via the eTRM reference library.

*Cal TF Staff Recommendation #10: The Cal TF Staff recommends that the Energy Division Staff or its consultants should not spend time or money creating “complete measure definitions” since these already exist.*

*Cal TF Staff Recommendation #10a: The Energy Division consultants should review and direct any changes to either the narrative or data elements of all statewide measures though the current process in 2019 to review and approve all statewide measures for 2020.*

*Section 2.2 Complete Measure Definitions to Reduce Workpaper Maintenance: Creating a “Comprehensive Set of DEER HVAC Measures” (pp. A-4 – A-5)*

Cal TF Staff, with support from UC Davis, Western Cooling Efficiency Center (WCEC), has consolidated all active HVAC measures into a set of statewide HVAC measures. During this work, the team identified gaps in documentation for HVAC measures, as well as a set of issues that should be considered for updating or further review. The HVAC measure documentation that would benefit from further work includes the following:

1. Clear documentation to identify the elements of each measure that change from base case to measure case. The energy use of nearly every HVAC DEER measure is modeled. To clearly document modeled measures, it is important to identify all key words in each model that changed from base to measure case. In some instances, Cal TF Staff was able to identify the key word changes from base to measure case, but in other cases was not.
2. Clear documentation of DEER Building Prototypes. The references used for the assumptions to create the DEER building prototypes are not linked to the assumptions themselves. Furthermore, many of the references appear to be missing in DEER. It would be helpful if the current Energy Division consultant could systematically document each DEER prototype:
  - a. Document all references that substantiate each assumption, and
  - b. Create a description of how the current and past DEER building prototypes were calibrated (to extent that the past DEER building prototypes served as a basis for current DEER building prototypes).

Recommendations that are generally applicable to all measures, not just HVAC measures, include:

3. Provide supporting documentation for tools and values adopted for DEER, including:
  - Interactive effects
  - Hours of use
  - Water heater calculator
  - Indirect effects templates for weighting / combining values
  - Effective useful life (EUL) values (select measures only)
4. Develop a consistent cost methodology framework. Currently, there are no consistent methods for determining measure costs, which is a parameter that can have significant impact on measure cost-effectiveness. Cal TF Staff understands the current Energy Division consultant team is planning to develop a framework to develop measure costs; Cal TF supports this effort. As a result of the measure consolidation process to develop statewide measures, the Cal TF has documented cost data sources and cost analysis methods that can provide valuable input for the Energy Division consultant team.

*Cal TF Staff Recommendation #11: For the DEER HVAC Measures, the Energy Division Staff and its consultants should build upon not replicate the extensive work that Cal TF Staff and UC Davis, WCEC have already done through the measure consolidation process.*

*Cal TF Staff Recommendation #11a: Ensure all key word changes for all DEER HVAC Measures from base case to measure case are clearly identified so all parties understand how measure case is being modeled and how it differs from the base case.*

*Cal TF Staff Recommendation #11b: Cal TF Staff recommends the Energy Division and its consultants develop a framework for developing/updating baseline and measure case material and labor costs.*

*Section 2.2: Miscellaneous Non-DEER Measures (p. A-5)*

Attachment A of the Draft Scoping Memo states, “We will identify the measures with the highest impact on utility portfolios that will continue to be offered beyond 2020, extract the best and most robust information from EM&V and other studies that can be used for parameter updates, and, whenever possible, provide complete measure definitions in DEER so that the DEER measures can be used directly . . .”

As noted previously, Cal TF Staff has already developed complete measure definitions for all active (DEER and non-DEER) measures (narrative, data elements, and references). In addition, Cal TF has analyzed which measures provide the greatest savings in the portfolio and has provided this analysis to the current Energy Division consultant team. We expect the consultant team will direct updates to select statewide measures based on any current EM&V study results as part of its statewide measure review process.

The major gap Cal TF Staff has identified for both DEER and non-DEER measures pertains to load shapes. Currently, measure load shapes are based on five utility-specific time periods rather than the more granular and accurate 8760 load shapes. It would be helpful if the Energy Division consultants would identify and document appropriate 8760 load shapes for the statewide deemed measures that will allow more accurate determination of key parameters such as demand reduction, grid impacts, measure cost-effectiveness, and greenhouse gas reductions.

In addition, Cal TF Staff can provide to the consultant team select references that are still missing, and it would be helpful if the consultant team would seek to identify those missing references. As noted above, supporting documentation is needed for tools and values adopted for DEER, including:

- Interactive effects
- Hours of use
- Water heater calculator
- Indirect effects templates for weighting / combining values
- Effective useful life (EUL) values (select measures only)

*Cal TF Staff Recommendation #12: Cal TF Staff recommends that Energy Division Staff and its consultants identify statewide 8760 load shapes.*

*Cal TF Staff Recommendation #12a (related to #2): Cal TF Staff recommend the Energy Division Staff and its consultants help to identify/locate missing references and documentation for select statewide measures.*

*Section 2.2 Complete Measure Definitions to Reduce Workpaper Maintenance: Creating “Measure Sunset Dates which would specify the ‘shelf life’ for the measure and when it should be updated.”*

Cal TF supports development and implementation of a policy on measure sunset dates so the market knows from the outset how long a measure will be effective and/or when it is scheduled to be updated and can plan accordingly.

*Cal TF Staff Recommendation #13: Cal TF Staff supports development of a policy (after input from a broad range of stakeholders) for systematic measure updates and measure sunsetting.*

*Section 2.4: Energy Division Staff will research, review, refine and clearly document the DEER data specification as part of our primary effort to provide transparency and documentation for DEER processes.*

Cal TF Staff recommends that the Energy Division Staff and its consultants build upon the Statewide Data Specification developed by the Cal TF to develop any data specification for the DEER ex ante tables. Importantly, to develop the Statewide Data Specification, Cal TF Staff started with the DEER data specification. Through an iterative process with input from the IOUs, POUs, and CPUC Staff, the Cal TF Staff identified which values were used by CEDARs, the CET, and utility databases, the result of which was a subset of fields in the DEER ex ante tables. Cal TF Staff then developed a data dictionary for the Statewide Data Specification and guidelines for measure development<sup>5</sup> that describes each field, how it is used, and allowable values.

In addition, Cal TF Staff has already performed the “research, review and refining” of the DEER data specification as part of developing the Statewide Data Specification and only included in the Statewide Data Specification those fields that are used for CEDARs, CET, and the IOU and POU program tracking database. If a DEER data specification field were eliminated, it was eliminated because there was no clear use for the field. As part of its research, Cal TF Staff had numerous discussions with the IOUs, POUs and CPUC Staff at the time; the ex ante team can build on the extensive work Cal TF Staff did to develop the Statewide Data Specification.

However, prior to developing a “DEER Data Specification,” Cal TF Staff recommends that Staff and its consultants first review the Statewide Data Specification and Data Dictionary – it may well contain all the information that is really needed to fully characterize a deemed measure.

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<sup>5</sup> *Measure Development and Peer Review QA/QC Guidelines. Version 1.0.* November 15, 2018.  
Available at: <http://www.caltf.org/s/Statewide-Measure-Development-and-Peer-Review-QA-QC-Guidelines-v10.pdf>.

Importantly, this task to review, refine, and improve documentation of the DEER data specification described in Section 2.4 of the Draft Scoping Memo will not be necessary if the Energy Division adopts Cal TF Staff recommendations #3 (retain the DEER ecosystem as the historical archive of current and past information for deemed measures prior to the 2020 updates) and #3a (use the eTRM as the complete repository of all active and future statewide measures and supporting documentation).

*Cal TF Staff Recommendation #14: Before embarking on a process to “research, review, refine and clearly document the DEER data specification,” Cal TF Staff recommends that Energy Division Staff review the Statewide Data Specification and eTRM Data Dictionary to assess whether it contains all the necessary fields to fully characterize a measure.*

*Cal TF Staff Recommendation #14a. Because of the extensive review and coordination already completed by Cal TF, we recommend the Energy Division adopts the Statewide Data Specification.*

*Cal TF Staff Recommendation #14b: If and only if the Energy Division rejects Cal TF Staff recommendations 3 and 3a, and if additional fields are needed for the DEER Data Specification, Cal TF Staff recommends that Energy Division Staff start with the Statewide Data Specification, as most of the fields will be the same between the Statewide Data Specification and the DEER Data Specification.*

#### IV. Conclusion

The Cal TF Staff comments on the Draft Scoping Memo are focused on ensuring the Energy Division Staff and its consultant team build upon, rather than replicate the extensive measure review, consolidation, and eTRM development work. Most of the proposed work relating to proposed improvements to PEAR, deerresources.com, READI, and more fully documenting DEER, the DEER Data Specification and measures is work that Cal TF Staff has already performed through a public, transparent process with extensive and ongoing input from the IOUs, POUs, and a broad range of stakeholders. It is unnecessary for the Energy Division Staff or its consultants to replicate work to document measures; the consultant has the opportunity to review and direct changes to any and all statewide consolidated deemed measures through the statewide measure review process that is already underway. If Energy Division Staff or its consultants would like additional database functionality for deemed measures, it will be far cheaper and faster to develop such functionality by working with the Cal TF Staff and the eTRM funders to understand the current functionality and future enhancements for the eTRM rather than try and “fix” or “update” PEAR, DEER, and READI.

The eTRM, which was designed and built to have all functionality described in the Draft Scoping Memo and is currently being populated with statewide approved measures. The eTRM is scheduled to launch October 1, 2019. It would be an unnecessary expenditure of ratepayer funds for staff to fund updates to DEER through a “multi-year process.” The eTRM was built on a modern relational database platform; DEER is not. “Fixing” DEER to have the same features and functionality that the eTRM has would be a complex, time-consuming, and resource-intensive process. Furthermore, from the outset, the purpose for creating the eTRM was to replace DEER.

Cal TF Staff recommends the following next steps:

1. The Energy Division Consultants Work with Cal TF Staff to Fill Remaining Data Gaps in the Statewide Deemed Measures.

Cal TF Staff, IOU Staff, and the Energy Division consultants identify any remaining data gaps in the current statewide consolidated measures. The Energy Division consultants can then seek to fill the gaps, where possible, particularly with modeled measures, documentation and calibration for DEER building prototypes and measures. The list of known gaps is described in these comments.

2. Future Updates to Statewide Deemed Measures Should be Done in the eTRM.

Statewide deemed measures that will be effective for January 1, 2020 will serve as a complete list of active measures, as such, any future updates (whether directed by the Energy Division consultants as part of the annual update process or sought by IOUs or third parties) should be to the statewide consolidated measures and done so within the eTRM.

3. Work with Cal TF Staff, IOUs and Other Stakeholders to Develop a Transition Plan to Switch from DEER to the eTRM.

The eTRM was never intended to exist “side-by-side” with DEER; from the start, it was intended to replace DEER. Cal TF Staff is developing an eTRM launch plan that could form the basis of the plan for switching from DEER to the eTRM as the “Database of Record.” A draft of this plan will be submitted to Energy Division Staff in July 2019.

4. Work with Cal TF Staff, Leaders at the CPUC, CEC, and eTRM Funders to Develop and Finalize an eTRM Governance Document.

The eTRM is a joint effort between the CPUC-regulated and CEC-regulated entities so that deemed values can be truly statewide (used by all entities in the State). Early versions of DEER were co-managed by the CEC and the CPUC. Cal TF Staff believes that a governance document is needed that includes the following elements:

- Joint eTRM oversight/regulation by the CPUC and CEC (as was originally the case for DEER)
- Processes and timelines consistent with the “Bus Stop” for deemed measure development by all market actors – IOUs, POUs, and third-party implementers.
- Processes and timelines that are consistent with and integrate into the “Bus Stop” for deemed measure updating the Energy Division consultants and other market actors (after review and approval by the ex ante consultants)
- Process for identifying and creating enhancements and extensions to the eTRM to keep up with evolving regulatory requirements, market changes, and technological advancements.

Finally, Cal TF Staff would like to note that it has put tremendous effort into designing and developing the eTRM and identifying and consolidating all deemed measures into a single set of statewide-consistent, standardized deemed measures that can be used by all stakeholders in California using a standardized and transparent data specification. The effort has been in partnership with a broad range of stakeholders including the IOUs, the POUs, multiple implementers, UC Davis, and the Commission’s “Group D” consultants. The core team working on this project are highly experienced and dedicated energy efficiency professionals who have,



from the start, sought to develop a tool, documentation, and processes that would be transparent, well-documented and lead to rigorous and replicable values.

The Draft Scoping Memo for the DEER 2021 update does not acknowledge or recognize the significant accomplishment and value of the eTRM and statewide consolidated measures in terms of reducing costs associated with deemed measure development, updating, and maintenance in addition to its transparency and significantly improved ease-of-use.

We hope that future documents that Staff releases will seek to build upon, rather than replicate, the eTRM and statewide consolidated values and acknowledges the tremendous value and cost savings these resources will yield for all stakeholders, including Staff, their consultants, IOUs, POUs, and the third-party implementers.

Finally, we hope that the Energy Division Staff will also recognize the value Cal TF has provided and will continue to facilitate a process that is transparent, and garners input from a broad range of stakeholders and subject matter experts on measures and associated technical information. Such a process will be necessary as the California energy efficiency portfolios transition to third-party design and implementation.

**Attachment A: Proposal for development of California Electronic  
Technical Reference Manual**

# Memorandum

To: Dave Gamson, Chief of Staff to Commissioner Carla Peterman

Re: Proposal for development of California Electronic Technical Reference Manual

From: Alejandra Mejia and Annette Beitel; California Technical Forum Staff  
Pete Skala, Katie Wu, and Carmen Best; CPUC Staff

Date: August 16, 2016

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On February 17<sup>th</sup> of this year, at the conclusion of a meeting with Cal TF and CPUC Staff, Commissioner Peterman's Chief of Staff David Gamson requested that Annette Beitel and Pete Skala work together on a follow up document describing how Cal TF and Commission staff will work together on a "best in class" electronic Technical Reference Manual (eTRM) for statewide use. This memorandum summarizes Commission and Cal TF staffs' high level strategy to implement Mr. Gamson's request. Note that this memorandum is not intended to be a comprehensive work plan for development of an eTRM. The development of a detailed implementation proposal has been underway over the past year, and has been informed by extensive best practices research.<sup>8</sup> Furthermore, several key elements of the implementation work plan have been widely disseminated for comment, and also reviewed both by the Cal TF and CPUC staff. As noted at the end of this memo, some key questions remain to be answered and broadly vetted for stakeholder comment. These remaining questions will be addressed in a follow up memo which will both address the key questions and also contain a detailed work plan that identifies and summarizes roles, responsibilities, budget, and timeline to develop the eTRM

## **I. Purpose of the eTRM**

The purpose of the eTRM is to consolidate California ex ante savings information currently contained in the Database of Energy Efficiency Resources (DEER), non-DEER workpapers, and the publicly owned utility (POU) TRM into a user-friendly, well-documented repository. The repository will contain all methods used to calculate energy savings for all deemed measures in California, as well as all final ex ante savings values and associated parameter values (measure life, cost, net-to-gross values, expected useful life, etc.), and sources for all values and methods. Upon completion of the project, the eTRM will replace the existing Ex Ante Database and DEER as the only repository of Commission-approved deemed measure values. The

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<sup>8</sup> The following documents relating to eTRM implementation are posted on the Cal TF website: TPP2: Electric TRM Proposal; Measure Consolidation Checklist and Template; eTRM "one-pager"; eTRM Powerpoint Deck Describing eTRM; eTRM Technical Issues; eTRM Process Issues; TPP 3: Modeling Engine Comparison. The best practices research informing development of the California eTRM can be found in an ACEEE 2016 Summer Study paper: Beitel, Melloch, Mejia, Harley, *TRM Best Practices from Across the Nation to Inform the Creating of a California eTRM* (2016 ACEEE Summer Study Compendium, to be released).

expectation is that the repository will be used by all administrators and implementers, including publicly owned utilities (POUs).

The statewide eTRM will:

- Be an easily understood and searchable tool that takes advantage of current relational database technologies;
- Provide easily accessible source(s) of data underlying each parameter (including any relevant regulatory authority for parameters with regulatory origins);
- Consolidate and replace overlapping measures that currently exist in the various Program Administrator and implementer portfolios with one set of measures and savings parameter values;
- Clearly identify each measure's "regulatory status" (e.g., reviewed and approved, passed-through so not as-of-yet reviewed, interim approval);
- Clearly identify the measure savings certainty (i.e., whether the measure possesses stable, well-established and verified parameter values versus newer, less-established or verified savings parameters);
- Facilitate measure "vintaging" and regular, scheduled approval, updating, and sunseting of savings parameter values by POUs and the Commission (or Commission staff, in cases of Commission-delegated authority); and
- Allow for a smooth transition away from the various deemed measure repositories (Ex Ante Database, READI, IOU workpapers, and the various POU platforms) currently used in California.

## **II. Proposed eTRM Development Process**

Cal TF will work with CPUC staff on all aspects of the eTRM development, including eTRM structure and interface with other Commission tools, existing measure review, and measure development guidelines. Cal TF will also give CEC staff the opportunity to provide input on all aspects eTRM development, as well, but the CEC may face resource constraints that would preclude the same level of engagement as CPUC staff.

While there will be some sequencing of the steps listed below, there will also be overlap of several key activities as the eTRM is created and populated. This will be done in order to maximize available resources and successfully meet the project's two-year implementation goal.

### **1. eTRM Repository**

Cal TF staff will work with IOU and POU technical leads, Cal TF subcommittees, and Commission staff to finalize the applicable data fields and structure for the eTRM, vet commercially available products, and identify and continue to make recommendations on technical and process issues that should be addressed at the beginning of and during eTRM development, so issues can be handled consistently and efficiently.

Key issues associated with the eTRM structure are discussed below.

1. Data Fields/Structure

The data specification for the repository tool is already being developed with input from all IOUs and POU's who are represented on the Policy Advisory Committee (including Los Angeles Department of Water and Power (LADWP), Sacramento Municipal Utility District (SMUD), the Northern California Power Agency (NCPA), and the Southern California Public Power Association (SCPPA)). The goal is to develop a specification that is used and useful to all regulators, administrators and implementers in the state. For the IOUs and CPUC, a key consideration in the eTRM structure will be that it covers all ex ante information that is truly useful to CPUC Staff for determining ex ante portfolio savings claims and calculating program cost-effectiveness, while removing fields that are not useful or necessary, or are expensive to collect and maintain relative to the value they provide. This is likely to be a subset of the data fields currently being captured; however, care will be taken to ensure that the final eTRM specification will not disrupt the functionality of other data tools (i.e CEDARS).

Cal TF staff has reviewed the data fields contained in the "April 1" specification, and also the data needs of all PAs. To streamline the data structure, data fields that do not appear necessary for reporting or cost-effectiveness analysis have been identified as candidates for elimination or modification. Cal TF staff will seek review from Commission staff and the IOUs of the common, smaller number of data fields.

Once a common set of data fields is agreed-upon, Cal TF staff will prepare, for review, a data dictionary and data structure map on how the fields should be structured and will relate to each other, as well as identify common data sets that multiple measures will need to pull from (such as building prototypes). This eTRM data structure will be used to replace the current Ex Ante Database with a functional relational database.

2. eTRM Procurement

Cal TF staff has identified commercial providers of eTRMs and also entities with experience in eTRMs that could develop a unique, customized eTRM. Once the data fields/structure document, data dictionary, common data sets and data relation structure is finalized and agreed-upon by Commission staff, POU and IOU staff, Cal TF staff will release an RFP to procure and/or develop an eTRM. Cal TF staff assumes that the bid reviewers would be the PA representatives (including both IOUs/POUs) and possibly Commission (CPUC and CEC) staff, if resources allow. The final eTRM repository would be selected based on bid evaluation criteria.

3. eTRM User Training

Cal TF staff envisions that eTRM training would be provided by the developer of the

eTRM repository. Any ongoing training could be built into the contract that will be needed for ongoing eTRM hosting and support.

## **2. Existing Measure Review/Consolidation/Preparation for eTRM**

Cal TF Staff estimates that California currently has about 180 distinct measures (including DEER, non-DEER IOU WPs, and the POU TRM). CalTF developed a process, checklist, and templates describing how measures will be reviewed, consolidated (in cases where there is a considerable number of overlapping measures), and prepared for populating the eTRM. Cal TF staff will be preparing a Technical Position Paper that incorporates the Cal TF-approved approach for measure consolidation and seek CPUC staff review/approval of this TPP.

Cal TF staff will seek Commission staff approval of “groups” of measures as they are being documented in the eTRM format. Once the full eTRM is complete and populated, all eTRM values would need to be approved via Commission decision for before they become effective for the IOUs. This would occur once yearly at the Rolling Portfolio’s September 1<sup>st</sup> “bus stop” deadline. This would allow the current Rolling Portfolio schedule to be streamlined further, by removing the need to update and approve existing workpapers on a yearly basis. Attachment B compares the current ex ante portion of the Rolling Portfolio schedule to how the new eTRM yearly update process would function. The POUs do not require regulatory approval of their energy savings values, and could begin to use the TRM as soon as the eTRM is complete.

## **3. Measure Development Guidelines**

CalTF and Commission staff plan to continue collaboration on measure development guidelines with which the eTRM structure and contents should conform. Examples of guidelines that have already been developed include:

- Dealing with Measure Complexity<sup>9</sup>
- Defining Best Available Data<sup>10</sup>

As with past guidelines, additional guidelines will be developed through Cal TF subcommittees, reviewed by the full TF, then submitted to Commission staff for their review and approval. The CalTF will leverage existing guidance documents relating to dealing with measure complexity and defining best available data.

## **III. Critical Path Questions and Next Steps**

In order for the eTRM to be successful, it must be a primary resource in the IOUs’ and POUs’ energy savings estimation processes. For the IOUs, the eTRM must be approved by the California Public Utilities Commission because, currently, the IOUs are mandated to use the DEER as a primary resource in savings estimation. Some critical path questions that must be

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<sup>9</sup>The Cal TF-approved guideline is available at <http://www.caltf.org/2015-subcommittees/>

<sup>10</sup>Ibid.

resolved prior to implementation of the TRM include:

1. Which entity will release the RFP to procure an eTRM? Would this be a short-term contract limited to eTRM development or a long-term contract that includes long-term maintenance and updating of the eTRM?
2. How will development and maintenance of the eTRM be funded?
3. What existing data and resources can be leveraged to limit redundant work and avoid “reinventing the wheel”?
4. How exactly would the transition to the eTRM function? What existing information could be leveraged and what would need to be modified?
5. How would the eTRM fit in with other existing CPUC savings estimation and claims processing tools and activities?
6. What role does the CPUC’s energy efficiency proceeding (R.13-11-005) play in this process, if any?

The Cal TF, Commissions (CPUC and CEC), Commission staff, IOUs, and POUs would need to resolve responses to the critical path questions listed above. Cal TF and CPUC staff have begun to address these issues. Once the questions are resolved, the immediate next step would be to finalize a detailed work plan that identifies and summarizes roles, responsibilities, budget, and timeline to develop the eTRM.

## **Attachment B: Alignment of the Electronic Technical Reference Manual with Commission Objectives**



## MEMORANDUM

To: Cal TF PAC

From: Jennifer Barnes and Annette Beitel, Cal TF Staff

Re: Alignment of the Electronic Technical Reference Manual with Commission Objectives

Date: September 15, 2017

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### I. **Overview of the eTRM**

The electronic Technical Reference Manual (eTRM) has been developed specifically to meet objectives specified by the California Public Utilities Commission (CPUC or Commission). However, Commission action will be required to make the eTRM the “database of record” for ex ante values. This memo first provides an overview of the eTRM, then outlines how the eTRM aligns with Commission objectives, discusses existing Commission decisions directing the use of Database of Energy Efficiency Resources (DEER). This document concludes with a discussion and recommendation of the regulatory path for seeking approval to use the eTRM as the database of record instead of DEER.

The purpose of the eTRM is to consolidate California deemed ex ante savings information currently contained in DEER, non-DEER workpapers, and the publicly owned utility (POU) TRM into a user-friendly, well-documented repository. The repository will contain documentation of all methods used to calculate energy savings and demand reduction for all deemed measures in California, as well as all final ex ante savings values and associated parameter values (measure life, cost, net-to-gross values, expected useful life, etc.), and sources for all values and methods. The intent, upon completion of the project, is for **the eTRM to replace the existing Ex Ante Database and DEER as the only repository of Commission-approved deemed measure values** [emphasis added]. The expectation is that the repository will be used by all administrators and implementers, including POU's.<sup>12</sup>

The eTRM project includes three key components, as follows:

#### 1. **eTRM Software Development**

The eTRM tool will be built as a relational database to house ex ante values, and will include a web-based user interface that links ex ante values to their underlying workpapers, their sources, and the analytic methods used to develop the values. This single platform will provide standardization and transparency of values and how they were derived. The system is expected to reduce the costs associated with creating, maintaining and updating deemed ex ante values.

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<sup>12</sup> Memorandum from Annette Beitel and Alejandra Mejia; California Technical Forum Staff and Pete Skala, Katie Wu, and Carmen Best; CPUC Staff to Dave Gamson, Chief of Staff to Commissioner Carla Peterman, Proposal for Development of California Electronic Technical Reference Manual (August 16, 2016).

## **2. Measure Consolidation into Streamlined Data Specification Leading to Standardized Workpapers**

Prior to placing measures into the eTRM, overlapping workpapers and POU measure characterizations will be consolidated into a streamlined eTRM data specification leveraging the existing workpapers and the POU TRM. This work is currently underway utilizing subcommittees organized by technology groups (e.g. Food Service, Commercial Refrigeration, etc.) with participants from the Program Administrators (PAs), POUs, Cal TF, outside experts, and a representative from the CPUC. Cal TF Staff envisions providing Cal TF-approved consolidated measures to CPUC Staff for review and comment prior to filing with the CPUC for approval.

Investor-owned utility (IOU) non-DEER workpapers are currently developed in a Microsoft Word workpaper template plus four staff-specified “ex ante tables” (133 fields). The eTRM “Data Specification” contains approximately 70 fields in two tables, composed of text and data fields (some calculated, some point values) (Tab 1 text, Tab 2 data). As measures are moved into the eTRM Data Specification, Cal TF is standardizing technical approaches, level of data, measure nomenclature, and other workpaper elements that are currently not standardized.

Cal TF Staff is documenting differences between workpapers and how they are being harmonized through measure consolidation. In addition, they are documenting additional data and information that the Cal TF subcommittee believes should be considered, either to correct errors or to be considered for measure updating.

## **3. Cal TF Engineering Review of Consolidated Measures**

As IOU non-DEER workpapers and POU measure characterizations for the same measure are consolidated, differences emerge and are discussed with Cal TF technology-specific subcommittees. In addition, Cal TF subcommittees review each consolidated measure and associated key assumptions. Subcommittee members generally have considerable experience with the specific technology category. Hence, they may also identify other data not contained in the workpapers, including more current data, or flag other issues related to the technology category or the measure that may not be apparent from the workpapers themselves.

In addition to the directives to use DEER, the Commission has established and repeated multiple times another requirement in developing DEER values, which is using best/most current data. Notably, the directive to use both best and current data is not qualified. Directives to use best/most current information include:

1. In D.09-09-047 and D. 11-07-030, the Commission stated non-DEER values in workpapers were to be updated with the latest information available. (D.12-05-015, p. 332).
2. We believe there is a critical need to be informed by “best available information.” (D.12-05-015, p. 339).
3. The utilities shall utilize the latest EM&V results and published studies at the time they are available in the development of non-DEER measure workpaper data. (Administrative Law Judge’s Ruling Regarding Non-DEER Measure Ex Ante Values, Attachment p. 2).

Cal TF Subcommittee review of consolidated measures to identify errors and to flag data that should be updated is entirely consistent with the Commission’s repeated, unqualified and sound policy directives to use the best and most current data in measure development and updating.

In addition, while the Commission has delegated to staff approval of values, with recourse to the Commission for disagreements through a dispute resolution process (which has never been used), it has repeatedly underscored the importance of getting input from stakeholders:

*We require* staff to get input from all parties on updating ex ante values. (D.12-05-015, p. 328). [emphasis added]

The Commission has been most complimentary of input received through a collaborative, inclusive (all stakeholders, not just utilities) discussion-based approach rather than just through workshop format:

The process undertaken since the January 2011 workshop has worked well. After the workshop and subsequent discussions, there are now significantly fewer HIM workpapers in dispute. We appreciate the efforts of all parties and the ED to work productively to resolve a number of methodological and technical differences regarding the workpapers. (D. 11-07-030, p. 29).

## **II. eTRM Alignment with Commission Objectives**

Extensive work conducted by Cal TF Staff and Cal TF has identified and analyzed Commission and statewide policies and directives, and describes how the eTRM aligns with Commission policies and directives. The resultant work products include the following:

- Memo: CPUC Directives on DEER Database
- Memo: CPUC Directives on Ex Ante Workpapers
- TPP 2: Electronic TRM Proposal
- Staff Comments on ALJ Questions from Rolling Portfolio Cycle Phase II, Workshop 1

Some of the key points from this work can be organized by the following six key objectives, each of which is discussed in more detail below.

1. Improve the usability and transparency of all ex ante values;
2. Establish tighter linkage between ex ante values, program tracking data and ex post studies;
3. Develop statewide measures;
4. Ensure measure standardization-across the state;
5. Ensure measure standardization-across the IOUs; and
6. Compile all Commission-adopted frozen ex ante energy savings into one website.

## 1. Improve the Usability and Transparency of All Ex Ante Values

The most recent and direct regulatory support is contained in the Phase 2A decision in the Rolling Portfolio proceeding:

We direct the PAs to work with stakeholders to jointly investigate and propose potential solutions to Commission Staff to improve the usability and transparency of all ex ante values. The solutions may include new software tools that offer a common platform for all PAs to compose savings estimates transparently and consistent with Commission direction. Proposals should be focused on opportunities to facilitate transparency and collaboration. Proposals should specify the expected outcomes from the proposals and how they will improve the process to develop, review, and implement ex ante values. Any proposal must recognize that Commission staff is still responsible for review and approval of ex ante values and methods and that past and current ex ante guidance still pertains. (D.15-10-028, pp. 97 – 98).

This decision language followed an ALJ Ruling in Phase 2, Workshop 1 of the Rolling Portfolio Cycle, in which the ALJ asked pointed questions about the continued viability of DEER:

ALJ Written Question: Given that a smaller percentage of each portfolio appears to utilize DEER data, is there value in continuing the DEER process? Should we consider another framework altogether? If so, what would it look like?

Cal TF Staff filed comments in response to the Phase 2, Workshop 1 ALJ questions. In response to this question, Cal TF proposed two alternatives that are similar to the process that Cal TF is currently undertaking, which involves identifying all measures in the state (DEER, IOU non-DEER WP, POU), combining them into a single set of statewide measures, and then creating a new repository as an alternative to DEER. While the response does not mention the eTRM by name (the name may not have been coined at the time the comments were filed), it contains the key elements that are now part of the eTRM project – measure consolidation into a statewide measure set, identification and review of data used to support each measure, and replacement of DEER with something new that meets the Commission's sound policy directives. In addition, the Cal TF Staff comments detailed why DEER does not meet the Commission directives and provides many specific examples. Finally, it also describes extensive best-practice research in other jurisdictions that demonstrates how the "TRM" model is consistent with the Commission directives. (Response of the California Technical Forum Staff to ALJ Ruling Regarding Comments on Phase II, Workshop 1, dated April 6, 2015, filed April 22, 2015).

In addition, prior to the Phase 2A decision directing the PAs to "work with stakeholders to jointly investigate and propose potential solution to Commission Staff to improve the usability and transparency of all ex ante values..." (D. 15-10-028, pp. 97 – 98, longer relevant citation above), Cal TF Staff members Alejandra Mejia and Annette Beitel had several meetings with the former staff workpaper lead, Katie Wu, about the eTRM proposal and shared with her drafts of the eTRM proposal for review and comment. The eTRM proposal is memorialized in Technical Position Paper (TPP) 2: Electronic TRM Proposal.

Although memos are not binding, a subsequent Memorandum from Annette Beitel and Alejandra Mejia (Cal TF Staff), Pete Skala, Katie Wu, and Carmen Best (CPUC Staff to Dave Gamson, Chief of Staff to Commissioner Carla Peterman), presented a Proposal for Development of California Electronic Technical Reference Manual (August 16, 2016). This memo contains the following language:

The purpose of the eTRM (electronic Technical Reference Manual) is to consolidate California ex ante savings information currently contained in the Database of Energy Efficiency Resources (DEER), non-DEER workpapers, and the publicly owned utility (POU) TRM into a user-friendly, well-documented repository. The repository will contain all methods used to calculate energy savings for all deemed measures in California, as well as all final ex ante savings values and associated parameter values (measure life, cost, net-to-gross values, expected useful life, etc.), and sources for all values and methods. Upon completion of the project, **the eTRM will replace the existing Ex Ante Database and DEER as the only repository of Commission-approved deemed measure values.** [emphasis added] The expectation is that the repository will be used by all administrators and implementers, including publicly owned utilities (POUs).<sup>13</sup>

Furthermore, the Commission asked for alternatives to the current ex ante process in 2012, and asked for recommendations to be based on models from other jurisdictions:

Several parties view the Regional Technical Forum as a model that could provide insights into ways to improve our ex ante updating process. Although we do not change the existing process at this time, we direct Commission Staff to review the processes in other jurisdictions and make recommendations for improvements to our process for consideration for ex ante update for the post-2014 cycle. (D.12-05-015, p. 330).

The eTRM project and Cal TF generally is based on extensive best-practices research from other jurisdictions, as well as extensive stakeholder discussions.<sup>14</sup>

## **2. Tighter Linkage Between Ex Ante Values, Program Tracking Data and Ex Post Studies**

Over five and a half years ago, the Commission identified the need for a tighter linkage between ex ante values, program tracking data, and ex post studies, as follows:

Frozen ex ante savings parameters (in the form of the adopted DEER values, non-DEER WP, and custom projects subject to the ex ante review process) and tracking data (in the form of utility reports and program accomplishments based on these ex ante savings parameters) should be submitted and evaluated as part of a systematic process that **creates a connection between ex ante savings parameters, unverified tracking data** [emphasis added] and impact evaluations (which verify tracking data and also determine whether adjustments to the ex ante claim parameters are necessary). (D.12-05-015, p. 359).

In particular, the link between the Commission approved ex ante values (contained in the Commission's Ex Ante Database (ExAnteDB)) and the Commission's claims tracking database (CEDARS, which contains unverified utility-submitted program tracking data), is important to

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<sup>13</sup> Memorandum from Annette Beitel and Alejandra Mejia; California Technical Forum Staff and Pete Skala, Katie Wu, and Carmen Best; CPUC Staff to Dave Gamson, Chief of Staff to Commissioner Carla Peterman, Proposal for development of California Electronic Technical Reference Manual (August 16, 2016).

<sup>14</sup> See Cal TF Staff comments on ALJ Ruling on Phase II, Workshop I (dated April 6, 2015, filed April 22, 2015) and Lessons Learned on Research from Collaboratives in other Jurisdictions (Presentation, Memorandum, Detailed Appendices) (Cal TF website under "Foundational Research.")

ensure the utility's submitted, but unverified claims, are based on Commission-approved ex ante values. Currently, this computer quality check is not conducted systematically, which could result in utility claims that are not based on approved ex ante values. The eTRM is designed to ensure that it can be linked to CEDARS such that utilities' unverified claims data can be checked against approved ex ante values contained in the eTRM. Furthermore, the CEDARS developer (Sound Data Management) is part of the eTRM development team to ensure compatibility between the eTRM and CEDARS. The Commission has also identified the importance of linking ex ante data to ex poste data and studies.

Commission staff and the utilities have made significant progress toward standardizing data tracking over the past few years, and encourage continued collaboration between Staff and the utilities to further improve the data systems that link ex-ante claimed savings estimates and evaluation updates. (Id.)

### 3. Development of Statewide Measures

Since 2012, the Commission has directed utilities to prepare statewide workpapers:

We agree that **similar measures delivered by similar activities should have single statewide values** [emphasis added] unless recent evaluations show that a significant variation between utilities and that difference is supported by a historical trend of evaluation results. (D.12-05-015, p. 54).

This directive was reinforced by staff guidance to utilities for 2017 workpapers in the Ex Ante Team 2017 Workpaper Guidance Memo (p. 7):

**Statewide Workpapers:** Only one workpaper may be submitted for each set of programs/measures which are adopted by more than 1 program administrator; such workpapers have been termed "statewide workpapers" and program administrators have been directed to collaborate on such efforts.

### 4. Measure Standardization – Across the State

In the context of both "Research and Analysis in Support of Policy Oversight" (which includes Staff's responsibilities to update ex ante values), as well as Commission decision language in a related context ("EM&V"), the Commission has clearly signaled that its actions should be coordinated with and take into account the needs and perspectives of sister agencies and other entities within the State. The Commission's policy goal to support actions which benefit "the good of all" and coordinate with others is consistent with statewide policy directives urging the CEC, CPUC, and others to work together to achieve the State's climate goals:

We will also explore creating a more formal arrangement with the CEC for collaboration in this area and in EM&V, building on the working relationship we have established in this proceeding. For this purpose, we direct our Executive Director to contact his counterpart at the CEC with the goal of developing an interagency memorandum of understanding for CEC staff participation in EM&V and Research and Analysis in Support of Policy Oversight. In addition, we will continue to collaborate with the CEC at both the staff and Commissioner level on a broad range of energy efficiency issues, as we have during this proceeding... (D.05-01-055, p. 131.)

(In context of discussion on collaborative approaches to EM&V) ...A review [of collaborative approaches, including the NW RTF model, mentioned by name] should focus not solely on the Commission's needs and activities, but also those of the CEC, municipal utilities and the California Air Resources Board (CARB). (D.09-09-04, p. 305.)

A statewide approach to develop deemed savings using common methods and CPUC cooperation with other agencies is important to achieving the State's climate goals, and is consistent with prior legislative direction. In December 2012, the Legislative Analyst Office (LAO) published a report that found California's energy efficiency efforts in serious need of a "comprehensive framework [to] fully coordinate" programs and EM&V." The LAO warned that the current uncoordinated system could be resulting in programs not aligned with legislative priorities (Energy Efficiency and Alternative Energy Programs, LAO, December 2012, Summary). Informed by the LAO report, the State Senate Committee on Energy, Utilities, and Communications convened an informational hearing to investigate the issue further. During the hearing, Committee Chair Senator Padilla and several of the Committee members (among them Senators DeLeon and Wright) expressed grave concerns with the current system. They were particularly perplexed with the different methodologies used by the CPUC, CEC, and CAISO to measure and forecast energy efficiency savings. The Committee was concerned that inconsistent and uncoordinated methodologies would lead to misuse of the roughly \$500 million expected to be raised for energy programs by Prop 39 (Hearing Agenda, Introduction; hearing recording).

In a follow-up letter, the Committee pressed the two Commissions and CAISO to "provide specific joint specific recommendations" to help ensure that the State's energy efficiency programs actually achieve the stated goal of deferring traditional generation investments. Specifically, the Committee asked the three agencies to work collaboratively on synchronizing EM&V mechanisms designed to keep California's energy efficiency investments cost-effective (Letter to Chairman Weisenmiller, Mr. Randolph, and Mr. Casey, Senators Padilla and Fuller, January 30, 2013). In response to the Committee's concern, the CPUC, CEC, and CAISO committed to work together on several key issues, including standardizing the level of confidence on energy efficiency metrics, so that all three agencies can confidently rely on the same data (Letter to Senators Padilla and Fuller, CEC, CPUC, and CAISO, February 25, 2013, p.3).

The eTRM has been a model of statewide coordination between IOUs, POUs, and implementers, all of whom are active in the Cal TF and measure consolidation subcommittees. The eTRM vendor selection process included all four IOUs, the two main POUs, and both the CEC and CPUC Staff, all of whom were involved in reviewing the Request for Proposal for the eTRM, the selection of the winning bidder, and the contract negotiation/review process.

## **5. Measure Standardization – Across IOUs**

A seminal ALJ Ruling in 2009 that set forth the process for non-DEER workpapers made the following observations about the non-uniformity of utility workpapers:

Utilities non-DEER measure naming and classification process lacks uniformity and the workpaper standards of content, methodological approach, documentation conventions and formatting vary widely in quality and completeness. Additionally, the workpaper development and updating process is ad hoc in nature with each utility having its own

methods and timing for managing its collection of workpapers. The current approach makes it very difficult for ED to review new proposed non-DEER measures.

ALJ Ruling Regarding Non-DEER Measure Ex Ante Values (ALJ Gamson, November 18, 2009, pp. 1-2).

Through its work both on new measure review, as well as existing measure consolidation, Cal TF staff concurs that the ALJ observations above from nearly ten years ago remain true today. The measure consolidation process is addressing the issues raised above as follows:

- *Statewide Measure Naming Convention*: Cal TF Staff has worked with IOU staff to develop a statewide measure naming convention that will be implemented in the eTRM.
- *Standardizing Content, Methodological Approach, Documentation Conventions and Formatting*:
  - Measure Consolidation Process to create uniform content, methodological approaches.
  - eTRM Style Guide to ensure consistent style, editing and formatting convention.
  - Cal TF Staff is ensuring consistent length and content across workpapers that does not currently exist – in one case we have encountered, one utility created a six-page workpaper, whereas another created a workpaper for the same measure that was over 20 pages in length.
  - Draft Quality Assurance/Quality Control Document: Cal TF Staff has developed a nineteen-page (not including templates and attachments) QA/QC document titled “Cal TF Technical Position Paper (TPP) No. 7: Statewide Measure Development Guidelines and Internal QA/QC Procedures.” This document, if used by all workpaper developers and reviewers, will standardize the workpaper development and review process prior to submission to CPUC staff.
- *Standardize Methods and Approach for Managing WP*: The eTRM will be a statewide, standardized, public, transparent repository for managing measures, in contrast to the utility-specific, non-standardized approach that is currently used.

## **6. Compilation of All Frozen Ex Ante Energy Savings into One Website**

Over five years ago, the Commission ordered the Energy Division (ED) to make all official deemed ex ante values clearly available on a single website (including values that are in DEER, as well as values in non-DEER workpapers) so that they are available for public review:

ED believes that the “official” frozen DEER and non-DEER ex ante values be archived such that all the frozen values are clearly available for public review in a manner so that the utility reporting of portfolio accomplishments can be shown to be utilizing the official frozen values. (D.11-07-030, p. 27.) We will require the Energy Division to compile all Commission-adopted frozen values into one website. (*Id.* at p. 28).

Findings of Fact: It is important that the adopted frozen DEER and non-DEER ex ante values be archived and available for public review. (*Id.* at p. 44) Ordering paragraph 6; ED shall compile all Commission-adopted frozen ex ante energy savings values into one website. (*Id.* at p. 49).



The current system is consistent with the language above, but not necessarily the spirit, of the Commission's objective. Logically, the Commission would reasonably be directing that a complete list of deemed ex ante values be publicly available on a single website. However, only a fraction of the workpapers submitted are actually reviewed by the Commission, and an even smaller subset is adopted. Hence, the current system does not include all ex ante values used by utilities, many of which "pass through," and are thus not loaded into the ExAnteDB, or viewable in READI.

**Summary: eTRM Alignment with Commission Objectives**

Table 1 below presents how the eTRM aligns with these objectives as compared to the current system.

**Table 1. Comparison of Current System and the eTRM Alignment with Commission Objectives**

| Commission Objective  | ExAnteDB/DEER/READi  | eTRM  |
|---|--|---|
| <p>Improve the Usability and Transparency of All Ex Ante Values (D.15-10-028, pp. 97 – 98).</p>                 | <p>The current READi tool can only be installed on Windows-based systems. There is some documentation built into the system, but it is limited, especially as it relates to the fields and values stored in the database. A significant percentage of completed workpapers are not reviewed and are not loaded into the database, and therefore are not available from the system for use.</p> | <p>As discussed in the decision language, the eTRM "offer(s) a common platform for all PAs to compose savings estimates transparently and consistent with Commission direction." It will allow development of the workpapers and the values on the same platform where the values are stored along with links to algorithms and documentation for the stored values, significantly enhancing transparency. The firm hired to develop the interface for the system does user-interface design professionally and will design a system that is user friendly and is accessible across many platforms because it is web based.</p> |
| <p>Tighter Linkage Between Ex Ante Values, Program Tracking Data and Ex Post Studies (D.12-05-015, p. 359).</p> | <p>The current system is structured to provide a linkage between the ExAnteDB and the program tracking data through a Cost Effectiveness Values table (CEV Table). So far only a fraction of the workpapers have been processed into the CEV table, and many workpaper outputs have not been loaded into the ExAnteDB.</p>   | <p>Workpapers will be initiated in the eTRM and will therefore be in a standardized format for all initiating parties, from their inception. The eTRM will systematically assign standardized IDs to measures, measure offerings, and measure permutations. Those IDs will be specified as the links expected to be provided in claims submitted through the CEDARS system, providing a clear linkage between the eTRM and claims.</p>  |

| <b>Commission Objective</b>  | <b>ExAnteDB/DEER/READi</b>  | <b>eTRM</b>   |
|--|---|---|
| <p>Statewide Measures</p> <p>(D.12-05-015, p. 54; See also Ex Ante Team 2017 Workpaper Guidance Memo, p. 7.)</p>                                       | <p>Current statewide measure coordination is limited: Utilities continue to develop utility-specific workpapers for the same measure, and all existing non-DEER workpapers are utility-specific. The measure consolidation process will yield a single set of statewide measures, consistent with Commission direction and sound public policy.</p> | <p>The measure consolidation effort being undertaken as part of the development of the eTRM will significantly accelerate the movement toward statewide measures, consolidating existing workpapers into statewide workpapers and values before loading them into the eTRM. It will also support future development of standardized statewide work papers, and could facilitate work paper development by third-party Implementers.</p> |
| <p>Measure Standardization-Across the State</p> <p>(See, e.g., D.05-01-055, p. 131.)</p>   | <p>The current system is focused on the IOUs.</p>   | <p>The eTRM is being designed in collaboration with the CEC and the POUs.</p>   |
| <p>Measure Standardization-Across the IOUs</p> <p>(ALJ Ruling Regarding Non-DEER Measure Ex Ante Values (ALJ Gamson, November 18, 2009, pp. 1-2)).</p> | <p>The current system tries to impose standardization across the IOUs, but each IOU has developed their own systems for developing and QA/QC'ing workpapers.</p>  | <p>Workpapers will be initiated in the eTRM and will therefore be in a standardized format for all initiating parties, from their inception.</p>  |
| <p>Compilation of All Commission-Adopted Frozen Ex Ante Energy Savings into One Website</p> <p>(D.11-07-030, pp. 27 and 49.)</p>                       | <p>The current system does not include all ex ante values used by utilities.</p>  | <p>The eTRM will include all current measures used by the utilities and POUs. For new measures, the measures will be in the eTRM as soon as they are initiated. Their visibility to the public will be driven by their status. Values for measures that utilities are implementing and claiming savings on will be available for public view once they are approved.</p>  |

**Attachment C: RESPONSE OF THE CALIFORNIA TECHNICAL FORUM (CAL TF) STAFF TO ADMINISTRATIVE LAW JUDGE'S RULING REGARDING COMMENTS ON PHASE II WORKSHOP I**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Concerning Energy  
Efficiency Rolling Portfolios, Policies, Programs,  
Evaluation, and Related Issues

Rulemaking 13-11-005  
(Filed November 14, 2013)

**RESPONSE OF THE CALIFORNIA TECHNICAL FORUM (CAL TF) STAFF  
TO ADMINISTRATIVE LAW JUDGE'S RULING REGARDING COMMENTS  
ON PHASE II WORKSHOP I**

**CALIFORNIA TECHNICAL FORUM  
STAFF**

April 6, 2015

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**RESPONSE OF THE CALIFORNIA TECHNICAL FORUM (CAL TF)  
STAFF TO ADMINISTRATIVE LAW JUDGE’S RULING REGARDING  
COMMENTS ON PHASE II WORKSHOP I**

**I. Introduction**

The California Technical Forum (Cal TF) staff appreciates the opportunity to provide these comments in response to the Administrative Law Judge’s Ruling Regarding Comments on Phase II Workshop I (Ruling). The California Technical Forum (Cal TF) is a collaborative of experts who use independent professional judgment and a transparent, technically robust process to review and issue technical information related to California’s integrated demand side management portfolio. The Cal TF was created in 2014 by a broad collaborative of stakeholders and is funded by participating program administrators.

The comments are intended to inform and educate the Commission and other stakeholders about work the Cal TF is doing, and Cal TF staff observations based on this work, which includes extensive review of best practices in other jurisdictions. Furthermore, some of the observations on effective stakeholder process and likely outcomes of an effective, consensus-based stakeholder process, are based on prior experience of the Cal TF facilitator.<sup>1</sup> Initial Cal TF work included:

- 1) **New Measure Workpapers (WP):** New measure workpaper review;
- 2) **Documenting Commission Guidelines:** Documenting Commission guidelines on DEER and ex ante value development;
- 3) **Documenting DEER Requirements:** DEER requirements include values, guidelines,

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<sup>1</sup> The California Technical Forum facilitator, Annette Beitel, is also the facilitator of the Illinois Energy Efficiency Stakeholder Advisory Group (IL EE SAG), which has operated since 2007. Ms Beitel has been the facilitator of the IL EE SAG since its inception. Ms. Beitel is trained as a lawyer and mediator, has a technical background at the undergraduate and graduate level, and has over ten years’ experience facilitating energy efficiency stakeholder advisory groups.

methods, tools and data that Commission staff expects will be used in developing non-DEER workpapers. DEER requirements are complex and located in a variety of places. Extensive efforts were made to identify as many requirements as possible and to understand how and when they should be applied.

4) **Developing Templates and Other Tools** to clarify and ease the development of non-DEER workpapers.

In addition to ongoing review of new and updated non-DEER workpapers, current Cal TF work includes:

1) **Developing Ex Ante Guidelines for New Measures**

2) **Review of the California Public Utilities Technical Reference Manual (TRM):** In the early days of DEER, both POU and IOU jointly worked on developing and updating DEER. As DEER became more complex and difficult to use, the POU developed a “POU Technical Reference Manual (TRM)” containing ex ante values that California’s POU use instead of DEER.

3) **Documenting DEER Measures in Workpaper Format:** DEER measures are not supported by workpapers, so it is difficult to understand how DEER values are derived. Having workpapers for DEER measures will make it easier for workpaper developers to develop similar workpapers in the future, as they will have written information on acceptable approaches for developing values for similar measures.

Our hope is that joint work on ex ante value development supported by both the IOUs and the POU will lead to a statewide consistent set of deemed values for energy efficiency measures, as existed in the past. Having a statewide set of deemed values for energy efficiency measures that is used and trusted by all stakeholders is consistent with California’s very laudable and ambitious statewide policy objectives for energy efficiency and clean energy.<sup>2</sup>

Technical Forum meetings are open to the public. TF work product is posted on the CalTF website: [www.CalTF.org](http://www.CalTF.org).

**IMPORTANT NOTE:** The views expressed herein are those of Cal TF staff, and do not in any way represent views of the Cal TF Policy Advisory Committee (PAC), either individually

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<sup>2</sup> See Alejandra Mejia, “California Technical Forum Support of California’s Broader Energy Policy Goals” (May 2014). The paper can be found on the Cal TF website under the “About: Foundational Research” tab. See <http://www.caltf.org/foundational-research/>.

or collectively, or the TF (the collaborative of technical experts) itself, either individually or collectively. Finally, Cal TF staff is not part of the “joint parties.”

## **II. Discussion**

### **1. Portfolio Review Process and Program Oversight in between Reviews**

No comment.

### **2. Stakeholder Engagement in the Portfolio Review Process**

No comment.

### **3. Technical Updates**

- a. *Would the Joint Parties agree that the principle of “accountability” should perhaps be added to the four guiding principles identified in the proposal? Why or why not?*

No comment.

- b. *What would be the method and frequency for updating ex ante values?*

Cal TF recommends the Commission consider an alternative framework to DEER per Cal TF staff’s comments to question 3f. Should DEER remain in place, Cal TF staff recommends the process described below for the method and frequency of updating DEER. If the Commission switches to an alternate framework to DEER, the process below could still be used for developing and updating ex ante values for whatever ex ante value repository replaces DEER.

*Frequency:* In Cal TF staff’s review of ex ante development in over 20 jurisdictions, we have found that values are not updated more frequently than once per year. In some jurisdictions, values are updated less frequently. Given rapidly changing federal and state standards, changing markets for high impact measures, and new data that emerges regularly from evaluation, measurement and verification studies, Cal TF supports updating values annually to yield a higher degree of accuracy.

*Method:* At a specific date each year, any party (including third party implementers, non-profits or others) should be permitted to propose updates and/or additions to DEER. The party who proposes the update should have the “burden of proof” to document why the update and/or new measure is based on rigorous and technically-sound analysis and data. Through a facilitated consensus-based collaborative process, all parties who are interested in the updates should be allowed to participate in seeking agreement on updated values and new measures during a defined period of time (a few months). At the end of the consensus-building period, most values



to be updated and new measures will likely have reached consensus. Consensus new measures will be fully documented in a new measure workpaper in a common workpaper template. Non-consensus values and new measures can be documented through a “Comparison Exhibit” where areas of disagreement, and the technical basis for the disagreement, can be succinctly described. Both the consensus workpapers and non-consensus values would be presented to the Commission for approval. These updates and new measures can be approved by the Commission and incorporated into the portfolios via the ‘bus stop’ mechanism recommended by the Joint Parties.

The process described above has been used in the Illinois Stakeholder Advisory Group. The process is open, transparent, and affords all interested stakeholders the ability to engage and contribute to the technical issues. In the large majority of cases, consensus on updated values and new measures is reached at the end of the process. Finally, the process in no way usurps the Commission’s ability to be the final arbiter of adopted ex ante values.

Non-DEER workpapers should continue to be allowed to be proposed throughout the year to allow new programs and measures to be introduced into the market rapidly. Non-DEER workpapers that are approved should then be incorporated into DEER during the next (hopefully annual) DEER update cycle. In the future, the distinction between “DEER” and “non-DEER” values should be eliminated such that there is a single repository of ex ante values as exists in other states.

Cal TF could serve as the forum for the consensus-based, collaborative process described above.

*i. Would technical updates be for the full portfolio? Sector based?*

Updates and new additions to DEER should be based on the full portfolio. There is no reason to limit updates each year to a particular sector; changes to standards, new EM&V studies, market changes, etc. are not sector-based – neither should DEER updates be.

*ii. Responsiveness was brought up several times in the workshops was that directed at the responsiveness of the evaluation and technical updates (i.e. what are we updating) or was it directed at how quickly programs/strategies would adopt updates?*

No comment.

*c. Should we be considering more fundamental methodological or other approach*

*changes to the potential and goals study? The Joint Party proposal seems to assume status quo with bi-ennial updates to align with the IEPR forecast schedule. Are there other options or best practices from elsewhere to consider?*

No comment.

*d. What changes, if any, should we make with respect to workpaper and custom project review?*

Workpaper developers will be able to produce workpapers that better meet Commission staff expectations if they are given clear guidance on values, guidelines, methods, tools and data that Commission staff expects to be used for different measure types and end use categories. The California Public Utilities Commission has articulated the following “technical” guidance for ex ante value development:

1. Use the “best available information” for measure development.<sup>3</sup>
2. DOE-2 modeling is appropriate for weather-sensitive measures.<sup>4</sup>
3. Balance accuracy with the need to enable promising new technologies to enter IOU portfolios.<sup>5</sup>
4. Balance accuracy and precision, cost, and certainty.<sup>6</sup>

A Cal TF subcommittee is working to develop guidelines for ex ante value development to “operationalize” the Commission’s technical guidance.<sup>7</sup> The subcommittee is reviewing guidelines in DEER, and is also reviewing and considering “best practices” approaches used in other jurisdictions. The guidelines will cover, among other topics:

- What calculation approach to use for different types of measures: engineering equations, statistics, building simulations, ex post evaluation results.
- Use of measure expiration dates.
- Level of statistical rigor for measure development.

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<sup>3</sup> D.12-05-015 at 359, D.09-09-047 at 356

<sup>4</sup> D.12-05-015 at 48

<sup>5</sup> D.12-05-015 at 339

<sup>6</sup> D.09-09-047 at 299

<sup>7</sup> See Cal TF Measure Complexity and Best Available Information Subcommittee Summary at <http://www.caltf.org/tf-subcommittees/>.

- Determining appropriate number of measure combinations.
- Relative impact of various inputs on a measure calculation output.
- Level of complexity for different levels of measure savings impact on portfolio goals.
- Balancing cost of obtaining information with need for accuracy.

Another Cal TF subcommittee is documenting select “high impact” DEER measures in workpaper format to consolidate publicly available DEER values and information on these measures in one document. Having “reference” DEER workpapers will help provide guidance on developing similar measures.

The work products from both subcommittees listed above will be submitted to Commission staff for review, comment, and approval.<sup>8</sup> The resulting guidelines and workpapers should improve the current workpaper process by clarifying acceptable values, guidelines, methods, tools and data that Commission staff expects to be used for different measure types and end use categories.

- i. *Would the joint proposal allow for mid-cycle review and prospective changes to ex ante values (workpapers) or retroactive corrections of errors in “passed through” and/or approved values?*

No comment.

- ii. *Is the proposal to only apply custom review results prospectively?*

No comment.

- iii. *How should PAs improve workpaper quality, and how should all involved speed review?*

Workpaper quality can improve with:

1) **Written Guidelines:** Clear, written, well-organized and specific guidance on values, guidelines, methods, tools and data that should be used for different measure types and end use categories;

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<sup>8</sup> Currently, the CPUC does not approve updates either to DEER or non-DEER workpapers. Cal TF staff recommends that the Commission approve all updates and changes, plus new workpapers that are added to DEER, on an annual basis. If the Commission approves changes, changes will occur in a public forum through a predictable process.

2) **Training:** Training of all workpaper developers on acceptable methods for ex ante value development;

3) **Early Staff Input:** Although we understand staff has limited resources, it would be extremely helpful to have early staff feedback on all workpapers as they are developed to avoid re-work and to ensure that the workpaper developer has correctly identified applicable DEER methodologies and prior work that could inform the development of the particular workpaper; and

4) **Cal TF Review:** All workpaper abstracts and workpapers that have been presented to and been reviewed by the Cal TF have yielded many comments and questions for the workpaper developer. Workpaper developers have provided feedback to Cal TF staff that they have found the Cal TF review process helpful in identifying issues, data sources and approaches that they had not considered.

Workpaper speed could be improved by clear, written up-front guidelines, training, and early staff input.

*(continued) What accountability structures to improve quality control over work-paper submittals and custom projects savings estimates would be appropriate for PAs to put in place?*

Quality control would be improved by clear guidelines, “checklists” to ensure specific steps are taken prior to workpaper submittal, and a second experienced workpaper reviewer who carefully reviews and signs off on all workpapers prior to submission.

The Cal TF, a public, open, transparent forum of technical experts will also improve quality.

*(continued) What would be the best format and process for the Commission to review whether PAs have assembled appropriate accountability structures to address current quality control gaps, such as: clear management leadership structures and incentives, and the acquisition, training and oversight of sufficient number of properly qualified staff?*

Cal TF staff’s experience to date is that the workpaper developers, both PA and non-PA, who have submitted workpapers are well-qualified to do the work they are presenting.

*iv. Is specifying minimum needed levels of precision and accuracy for work paper and custom project savings estimates part of the Rolling Portfolio*

*process update, or something that should be addressed later?*

As described above, a Cal TF subcommittee is developing draft guidelines for ex ante measure development. One topic that will be included is the appropriate level of statistical rigor for ex ante measure development. In developing the guidelines, the subcommittee is reviewing and considering practices and approaches used in evaluation, measurement and verification, particularly in California, standards from the Uniform Methods Project,<sup>9</sup> and approaches used in other jurisdictions for developing ex ante values.

*e. Is the intent of the joint parties to maintain the status quo as far as where the DEER data resides and its format?*

No comment.

*f. Given that a smaller percentage of each portfolio appears to utilize Database for Energy Efficiency Resources (DEER) data, is there value in continuing the DEER process? Should we consider another framework altogether? If so, what would it look like?*

We understand this question to include commenting both on the structure and usability of DEER as a partial repository for deemed ex ante values,<sup>10</sup> as well as the process for updating DEER. Before delving into alternatives, we first establish the challenges with the current DEER.

The Commission's over-arching policy goals for ex ante process and outcomes are:<sup>11</sup>

1. Collaborative<sup>12</sup>
2. Transparent<sup>13</sup>
3. Well Documented<sup>14</sup>

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<sup>9</sup> The Uniform Methods Project, which is being overseen by the United States Department of Energy, is developing a common set of EM&V protocols for determining savings from energy efficiency programs and measures. See <http://energy.gov/eere/about-us/ump-home>.

<sup>10</sup> Deemed ex ante values are also contained in "non-DEER workpapers." Cal TF staff has found no other examples where deemed ex ante values are found in two forms (in this case DEER and non-DEER workpapers). Cal TF staff recommends that over time all deemed ex ante values are merged into one repository of deemed ex ante values, as is done in other states.

<sup>11</sup> See Alejandra Mejia, "Cal TF and Consistency with CPUC Directives on Ex Ante Values/DEER" and "Commission Language on Non-DEER Workpapers" (May 2014). The papers can be found on the Cal TF website under the "About: Foundational Research" tab. See <http://www.caltf.org/foundational-research/>.

<sup>12</sup> D.13-09-023 at 56, D.12-05-015 at 286, D.09-09-047 at 44

<sup>13</sup> D.10-04-029 at 30-31

4. Uses Best Available Data<sup>15</sup>

5. Strikes Reasonable Balance Between Accuracy and Precision, Cost and Certainty<sup>16</sup>

6. Minimizes Ex Post Risk<sup>17</sup>

Millions of dollars have gone into the development of DEER. However, DEER's structure makes it very difficult to use, and arguably is not in key respects compliant with the Commission's guidelines, particularly the directives to be "collaborative," "transparent," "well-documented" and "minimize ex post risk." Further, many would argue that it does not "strike a reasonable balance between accuracy and precision, cost and certainty." Rather it is unnecessarily complex and expensive without a commensurate increase in accuracy. Key observations about DEER's structure and content include:

- The documentation for measure parameters<sup>18</sup> is not linked to the measure parameter values.
- Furthermore, the documentation for many measure parameters is difficult to find or not publicly available
  - Also, measure parameters are not easily reproducible, and in some cases are not reproducible at all.
- All measure parameters for a particular measure are not linked to each other (e.g. savings, expected useful lives (EULs)), measure costs or incremental measure costs (IMC), net-to-gross (NTG) ratios).
  - Measure IDs are not always used consistently.
  - It is not always clear what EULs/NTG are for which measures.
  - READi is not intuitive to use, which makes it difficult for those without

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<sup>14</sup> D.01-11-06 at 20

<sup>15</sup> D.11-07-030 at 8

<sup>16</sup> *Ibid.*

<sup>17</sup> D.10-12-049 at 36, D.12-05-015 at 23

<sup>18</sup> Measure parameters are values associated with a point estimate that are used to calculate costeffectiveness, and include unit energy savings (kW, kWh, therms), expected useful lives (EULs), incremental measure costs (IMCs) and net-to-gross ratios.

extensive experience using READi to update measures.<sup>19</sup>

- DEER includes 56 separate data fields for each measure
  - Cal TF staff has not found that any other jurisdiction makes use of anywhere near this many fields for individual measures.<sup>20</sup>
- After many years of operation, DEER still does not include some key high-impact measures<sup>21</sup>
  - Examples include clothes washers, gas fryers, low flow showerheads, faucet aerators, low pressure sprinkler nozzles, and anti-sweat heater controls.<sup>22</sup>
- Outdated DEER measures are often removed rather than updated.
  - For example, energy efficient clothes washers—a particularly valuable measure in light of California’s extended drought and a high impact measure for several utilities was removed from DEER several years ago.
- Many outdated measures still exist in DEER.
  - DEER contains several outdated measures that should be removed through a systematic process.
- Stakeholders are confused about the process for getting new measures into DEER. This is stifling to innovation and market responsiveness. Furthermore, third party

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<sup>19</sup> READi (the Remote Ex-Ante Database Interface) is a program that allows users to access the CPUC’s databases of ex ante measure information, including energy impacts, EUL tables, and NTG tables, per <http://deeresources.com/index.php/deer-versions/readi>

<sup>20</sup> For example, READi includes the following fields for each measure line item when exported to workbook format; this level of detail is not typically used by other jurisdictions: Use Category, Use Category Name, Use Subcategory, Use Subcategory Name, Technology Group, Technology Group Name, Technology Type, Technology Type Name; fields with “name” in the description include full word descriptions of the fields that include abbreviated code designations.

<sup>21</sup> High impact measures in this instance are defined as measures comprising 1% or more of an individual IOU’s overall 2014 portfolio impact for either gas (therms), electricity (kWh), or demand (kW).

<sup>22</sup> READi v.2.1.0 (DEER and Non-DEER Ex Ante data for the 2013-14 Cycle – Under Development, Draft for review) contains what appear to be draft versions of some of these measures based directly on IOU workpaper values for 2013-2014, with a designated status in READi as “proposed” in contrast to the “standard” status of regular READi measures. Some of these measures were present in DEER 2005, were subsequently removed from DEER due to outdated information, and have not yet been formally updated in DEER.

implementers don't have a clear way to get new measures into either DEER or non-DEER workpapers.

- Contrary to the policy objective of minimizing ex post risk, DEER values are not ever truly frozen and the updating process between formal DEER version releases is chaotic and unpredictable.<sup>23</sup>
  - Since January 2015, ten updates have been made to DEER so far (per DEER's change log on [deeresources.com](http://deeresources.com)). Two impacted DEER version 2015; six impacted DEER version 2014; two impacted DEER version 2011.
  - Utilities and implementers are not notified of changes. Changes are only documented on a change log on [deeresources.com](http://deeresources.com).

Cal TF staff researched and gathered other state Technical Reference Manuals (TRMs) for the POU TRM review process that is occurring through a Cal TF subcommittee. The research was conducted in all 50 states and Cal TF staff identified over 20 TRMs containing deemed ex ante values. These TRMs are the functional equivalent of DEER in other jurisdictions. Information from other TRMs will be considered during review of the POU TRM to help establish "best practices" in form and content. Although our review of other state TRMs is not complete, the common trends we have identified for TRM structure includes the following features:

Measure parameters for particular measures are all linked to the measure and easily followed.

- All measure parameters are documented, so it is clear where the parameter came from.
- Measure values are transparent and reproducible.
- In general, all high-impact measures are all included.

From a process standpoint, general observations about the process for developing and updating other state TRMs include:

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<sup>23</sup> DEER is updated through a formal process, but also updated frequently in between the formal updates. The "in-between" DEER updates used to be public. Now they are recorded on a "change log." However, parties are not formally notified of the many "in-between" DEER changes.



- TRMs articulate substantive principles for ex ante value development.
- There is a clear written process/timeline for updating the TRM on a regular cycle, often annually.
- There is broad-based stakeholder input on both what measures need updated, new measures, and technical work.
- Outdated measures are not dropped, but updated unless no longer relevant.
- Regulators approve the periodic TRM updates (which do not occur more than once per year).
  - Regulatory approval is often pro forma if the stakeholder process is effective and different views are permitted to be expressed, addressed and generally resolved.

Based on its research, Cal TF staff believes the current structure, usability and update process for DEER falls significantly short of what is found in other jurisdictions. Furthermore, Cal TF staff believes that DEER does not meet Commission policy directives for ex ante value development. Thus, our recommendation is for the Commission to consider another framework altogether.

As a “strawman” approach to generate discussion and dialogue about alternatives to DEER, we suggest two possible paths that could lead to a comprehensive,<sup>24</sup> fully vetted<sup>25</sup> statewide<sup>26</sup> California TRM:

- Path 1: DEER as base
  - Document in workpaper format all DEER measures (approx. 80 – 100, depending on how the term “measure” is defined, not including measure combinations representing different climate zones, vintages and building types).
  - Cal TF subcommittee<sup>27</sup> reviews available documentation/approach for

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<sup>24</sup> “Comprehensive” means eliminating the distinction between DEER and non-DEER workpapers such that all deemed ex ante values would be contained in one repository.

<sup>25</sup> “Fully Vetted” means vetted through an inclusive, transparent, consensus stakeholder process.

<sup>26</sup> “Statewide” means used by Program Administrators regulated by the CPUC and Publically-Owned Utilities.

<sup>27</sup> Cal TF subcommittees include both Cal TF members and participants that are not Cal TF members.

each DEER measure, then subcommittee recommendations are forwarded to the full TF for review and consensus-based decision-making.

- Add all non-DEER WP and POU TRM measures not in DEER.
- Path 2: “Best Available Information/Methods” as base
  - Develop a list of statewide measures (DEER, non-DEER WPs, POU TRM measures)
  - Identify the best approach/data sources for each measure and record in workshop format. Include consideration of DEER data/approaches.
  - Cal TF subcommittee reviews each measure, then subcommittee recommendations are forwarded to the full TF for review and consensus-based decision-making.
- Both Path 1 and Path 2: Develop Written TRM Update Process that includes:
  - “Bus Stop” for including new EM&V studies/other data.
  - Open stakeholder consensus-building process.
  - Written, clear, regular annual update schedule that is approved by the CPUC.
- Final Step for Path 1 and Path 2: Seek regulatory approval of statewide TRM and Statewide TRM update process.

Cal TF staff expects to have a recommendation by the end of the year about whether Path 1 or Path 2 would be preferable. The recommendation will be informed by work that is underway in the “POU TRM/DEER Documentation” subcommittee. However, we do note that many of the values in DEER are based on energy modeling using the “DOE 2.2” software. While the Commission has approved this software for modeling weather-sensitive measures in DEER, the California Energy Commission has switched to “EnergyPlus” modeling software. Research currently underway at Lawrence Berkeley National Laboratories indicates that values for the same measure, using the same building type, can vary significantly if modeled in DOE 2.2 instead of EnergyPlus.<sup>28</sup> To develop a truly statewide database used by both POUs and IOUs, it might be appropriate to do future modeling of weather-sensitive measures in EnergyPlus. If EnergyPlus becomes the accepted model to use in California for modeling

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<sup>28</sup> Personal communication between Annette Beitel and Alejandra Mejia with Philip Haves, leader of the Simulation Research Group at LBNL (April 6, 2015).

building sensitive measures, following “Path 2,” above, would be preferable.

- g. What binding time constraints (such as bus stops for new workpapers) should PAs be subject to in order to facilitate timely and accurate technical updates? What criteria should be used to determine whether program administrators’ work products are eligible for consideration?*

No comment.

- h. Even with strategically planned Evaluation, Measurement & Verification (EM&V), what would be the system to select criteria for prioritizing what to update in DEER for a given year? For example, if the commercial sector was evaluated in the previous year, what parts of DEER would be updated this year (measure savings, Net-to-Gross and other parameters, underlying simulation, or all of the above)? What would be the system for prioritizing updates from evaluation data, given that uncertain measures will be updated?*

Cal TF staff believes prioritizing measures for update should be based on the potential impact of the update. Specifically, how significant will the change in value be, and how much does the measure contribute to the overall portfolio savings. Cal TF staff believes that the Joint Parties’ suggestion to only update measures in a particular sector at a given time is unnecessarily restrictive. Making update decisions based on market sector is not necessarily going to lead to updating the most impactful measures. Prioritizing updates based on the likely impact of the update (rather than by market sector) is a common and logical practice throughout the nation.

- i. Does the proposed bus stop timeline take into account the time needed for proceeding activities such as workshops, commenting periods, decision writing, etc.?*

Stakeholder processes take different forms. A process that includes “workshops, commenting periods, decision-writing, etc.” describes the current stakeholder process for updating DEER. Cal TF staff has heard from many stakeholders that the “workshop, comment, decision process” often does not lead to meaningful discussion and resolution of technical issues. Rather, many observe that they make comments, but the comments are routinely ignored or dismissed.

A more productive stakeholder process that leads to values that are more widely accepted, technically robust and that yields far less contention and discontent is a stakeholder consensus-building process as described in Section 3.b, above led by an independent, experienced, technically-trained facilitator. The key elements include an open process where all parties can state their views, and a reasonable attempt is made to reach consensus through

information exchange, listening and responding to opposing views and being required to provide technically strong support for stated positions. If consensus is not reached, a Comparison Exhibit is prepared setting forth different positions and the basis for the different positions. In most cases, consensus is reached. Such a process is used successfully in many jurisdictions, including the Illinois Stakeholder Advisory Group, the Massachusetts Energy Efficiency Advisory Council, and to some extent the Northwest Regional Technical Forum.<sup>29</sup> The stakeholder process described above does not require regulators to cede their regulatory authority to stakeholders; all stakeholder work products (new measures and measure updates) must be approved by the regulatory commission before they are effective. However, the general outcome is that the regulatory body affirms the recommendations of the stakeholder group.

In conclusion, a Statewide TRM can be designed to:

- 1) Be used by, and useful to, POU/PAs/others
- 2) Meet all CPUC directives for ex ante value development
- 3) Preserve what is good and valuable from years of work on DEER at a lower cost than the current DEER development/update process.

*j. How would parties avoid “analysis paralysis” for criteria to allow study results “onto the bus”? Would there be a threshold for getting results into the portfolio? There seems to be a potential for stalling, if an incentive to stall arises.*

No comment.

*k. What mechanisms would limit the ability of interested parties to delay the incorporation of study findings and technical updates that have adverse consequences for their interests?*

No comment.

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<sup>29</sup>The Northwest Regional Technical Forum makes decisions based on a super-majority vote rather than a consensus – building process. Since the majority is not always right, a consensus-building process that clearly memorializes dissenting non-consensus views, and the basis for those views, can lead to a better outcome – regulators can elect to adopt the minority position, which may be the correct position. The consensus-based decision-making process creates a clear record for regulators to adopt the minority position. Consensus-based decision-making processes do not lead to endless, unresolvable discussions. Participating parties are allowed to state their views and provide support for their views; they can ask questions of others, and after all arguments and support have been discussed, if consensus is not reached a “Comparison Exhibit” is produced which allows regulators to make the final decision.

- l. *What would be the key components to developing criteria for evaluations "getting on the bus" that would need to be agreed upon at the beginning? If you cannot provide the key components, how would you suggest developing the criteria?*

No comment.

- l. *(continued) What role should the existing California Evaluation Framework and/or Protocols play?*

No comment.

- m. *(relates to Southern California REN alternate proposal)*

- i. *How would Advanced Metering Infrastructure and real time data fit into the evaluation process? What role would the program implementer have in embedding data analytics/evaluation in their program design?*

Cal TF staff supports SoCalREN's proposal to use near real-time data in EM&V processes, where applicable, to show the actual savings impacts of energy efficiency initiatives.

- ii. *How would the AMI data enable the potential study?*

No comment.

- n. *Any comments that are not in response to the specific questions above on Topic 3.*

No comment.

#### **4. EM&V**

No comment.

#### **5. Reporting Requirements, Accounting, and Spending Oversight**

No comment.

#### **6. Program Oversight**

No comment

### **III. Conclusion**

CalTF staff appreciates the opportunity to provide these Comments on Phase II Workshop I. We hope the comments helped educate and inform about existing efforts that are underway that relate to some of the technical issues raised in the rolling portfolio cycle.

Dated: April 6, 2015

Respectfully submitted,

A handwritten signature in black ink that reads "Annette Beitel". The letters are cursive and somewhat stylized.

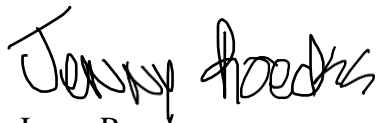
Annette Beitel

Cal TF Facilitator

A handwritten signature in black ink that reads "Alejandra Mejia". The signature is written in a cursive style.

Alejandra Mejia

Senior Policy Analyst, Cal TF

A handwritten signature in black ink that reads "Jenny Roecks". The signature is written in a cursive style.

Jenny Roecks

Senior Technical Advisor, Cal TF

## **Attachment D: eTRM Training Survey Findings**



To: Manisha Lakhanpal, California Public Utilities Commission Energy Division

From: Jennifer Barnes, Cal TF Staff

Re: eTRM Training Survey Findings

Date: April 18, 2019

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## **OVERVIEW**

Cal TF Staff conducted two eTRM trainings for the broad energy efficiency stakeholder community on Thursday February 21, 2019 and Monday March 4, 2019. A total of 82 people attended the two trainings, which were held via webinar. Following each training, participants were given access to the eTRM “Sandbox” to allow interested participants to work with the eTRM. Per your request, Cal TF Staff sent a survey to participants to solicit their input on the eTRM compared to DEER.

## **SUMMARY**

Below are the responses to the online survey distributed to all participants of the eTRM training sessions. The survey consisted of 10 questions covering topics, as follows:

- One demographic question
- Three questions on DEER usage
- Four questions comparing DEER and eTRM data and ease of navigation
- Two open-ended questions to capture verbatim feedback on DEER and eTRM

A total of 22 survey responses were received, though not all respondents answered all questions. The survey respondents represented a variety of different types of users within the energy efficiency industry, except for evaluators. Respondents reported high familiarity with all of the DEER tools and resources, with majority using one of the tools at least monthly.

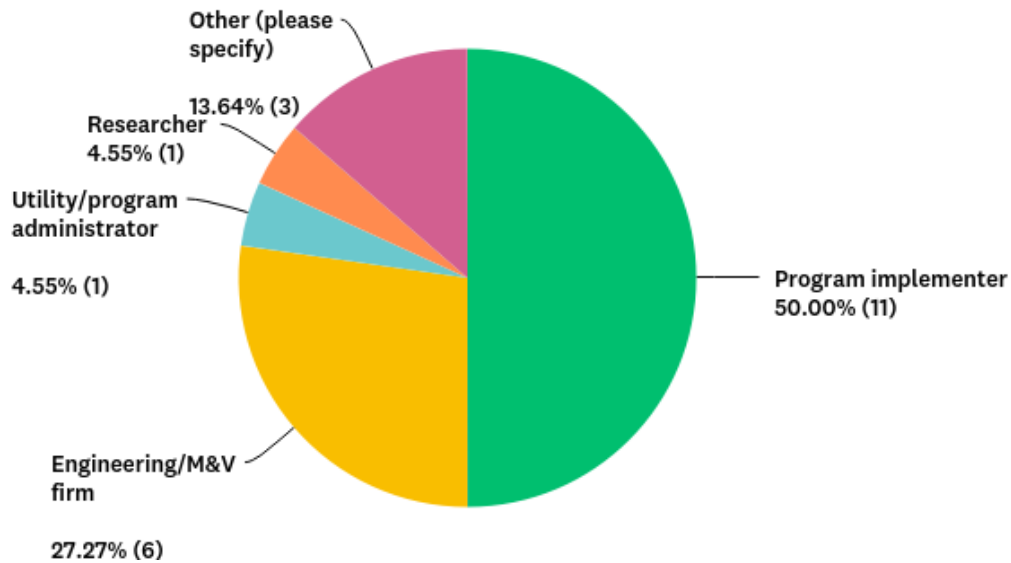
In general, respondents reported that DEER contains a lot of useful information but that it is “user unfriendly”, is difficult to find the information they are looking for, is unclear if they are using the most recent work paper versions, and is impossible to trace the rationale or assumptions behind the values. In contrast, they reported that eTRM appears to be well organized and they believe that it will be easy to use and understand.

## **SURVEY QUESTIONS & RESPONSES**

### **Demographic**



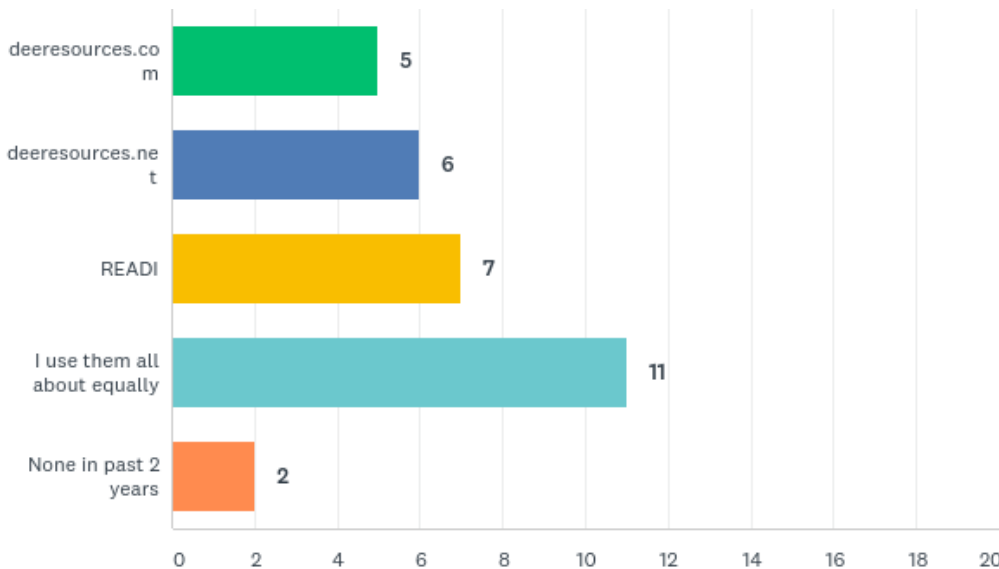
Indicate your/your organization’s primary role in the California energy efficiency industry. (22 responses)



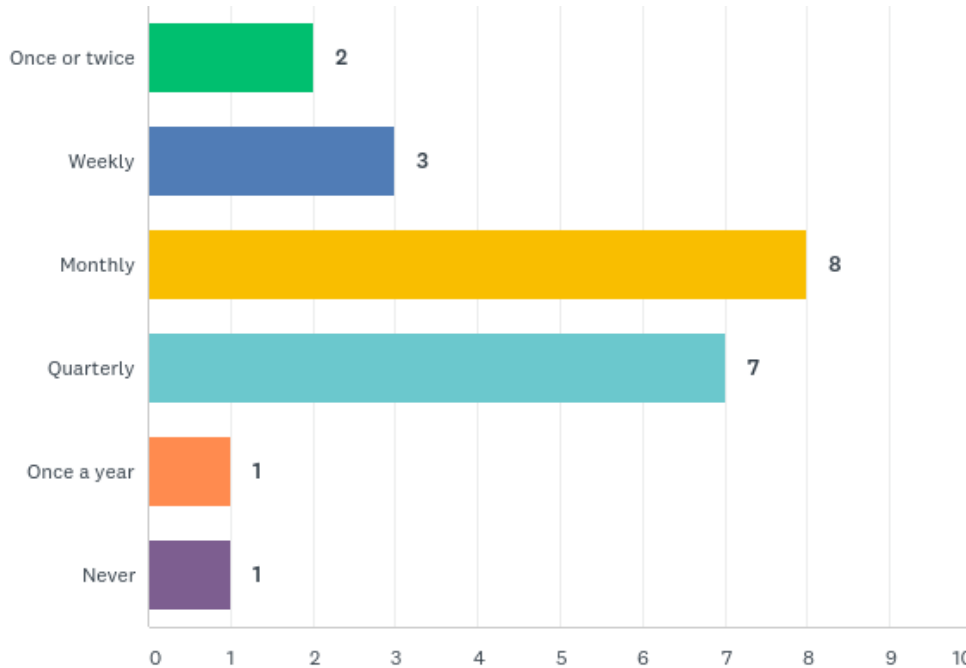
“Other” includes: “Analyst for Regional Technical Forum in the PNW”, “Cross-cutting design, implementer, evaluator, etc.”, and “Advisor

DEER Usage

In the past two years, which DEER tool/resources have you accessed most frequently? (22 responses)



Over the past two years, about how often have you used/accessed any of the DEER tools/resources? (22 responses)



What types of information do you typically seek from the DEER tools/resources? (19 responses) All *verbatim* responses are provided below:

- Analysis methodology and references*
- Energy savings from deemed measures*
- Workpapers, EULs, NTGs,*
- Details from workpapers.*
- Approved savings values, EUL*
- Measure savings, IMC, Loadshapes, EUL, RUL, NTG, new measures, dispositions*
- Non-DEER deemed workpapers*
- Prescriptive savings, approaches, costs, lifetimes. Updated analyses, and a way to get % savings instead of just a raw savings number.*
- Measure savings and work paper details*
- workpapers + READI*
- UES, UEC, methodology, costs, eul, ntg, load profiles, etc.*
- Deemed savings values*
- I actually don't recall. I think it had something to do with chillers*

Measure savings, EUL, etc. to build cost effective programs

CPUC Dispositions and archives.

Savings values from workpapers/DEER measures; measure life; IMCs from workpapers; measure names/delivery channel, etc. from workpapers.

Measure savings data and what those savings are based on...

Savings; cost; references; code; baseline and measure. Pretty much everything.

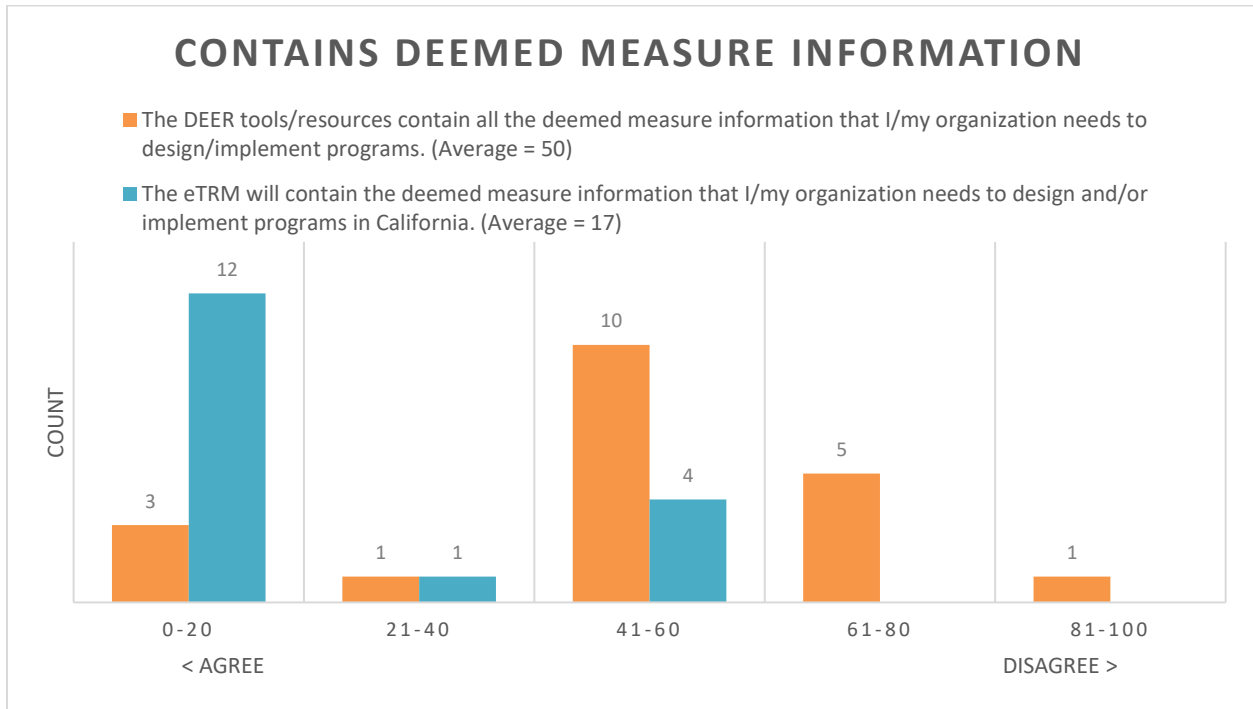
Savings estimates, dispositions, workpapers, supporting documentation for both DEER and workpapers

### DEER/eTRM Comparison Questions

The following two questions compare the respondents' perspectives on the completeness of the information in both DEER and the eTRM. The responses were collected with a sliding scale from 0/AGREE to 100/DISAGREE:

- The DEER tools/resources contain all the deemed measure information that I/my organization needs to design/implement programs. (20 responses)
- The eTRM will contain the deemed measure information that I/my organization needs to design and/or implement programs in California. (17 responses)

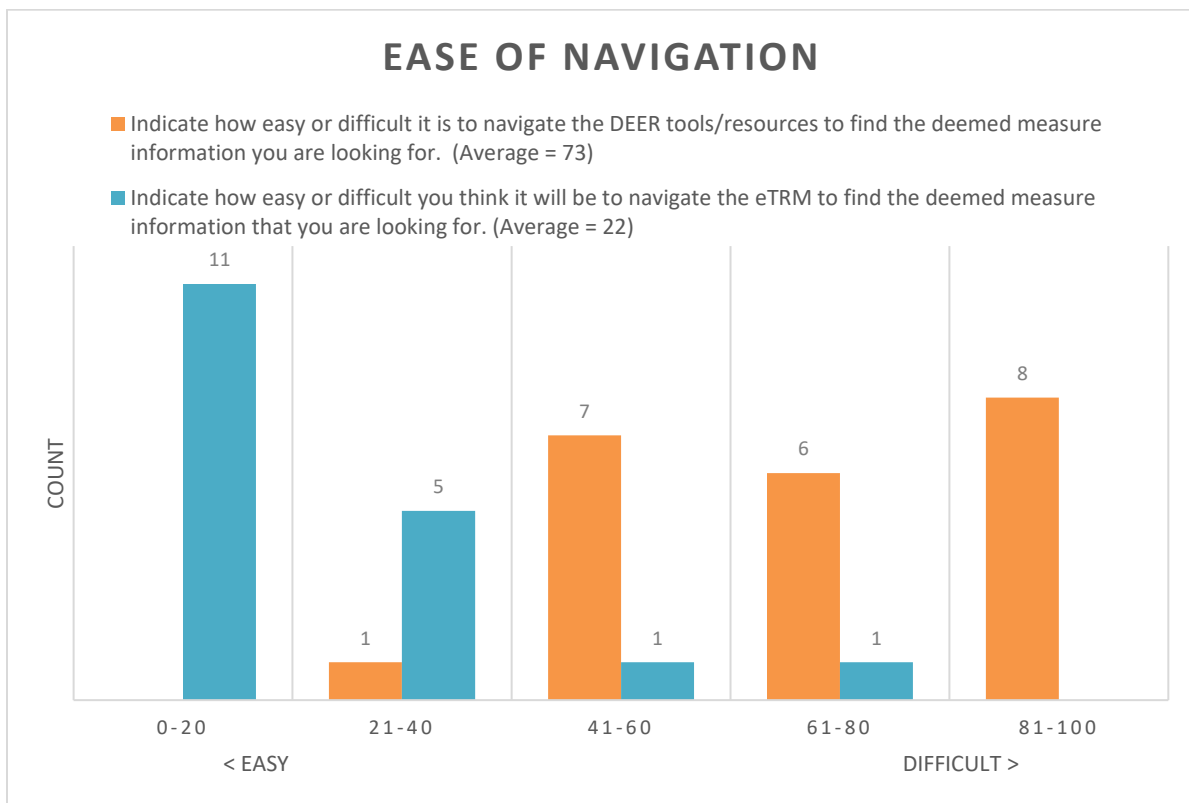
The response values were grouped into bins of 20 points.



The following two questions compare the respondents' perspectives on the ease of navigation of DEER and the eTRM. The responses were collected with a sliding scale from 0/EASY to 100/DIFFICULT:

- Indicate how easy or difficult it is to navigate the DEER tools/resources to find the deemed measure information you are looking for. (22 responses)
- Indicate how easy or difficult you think it will be to navigate the eTRM to find the deemed measure information that you are looking for. (18 responses)

The response values were grouped into bins of 20 points.



Open-ended Questions

Comment on your **overall experience using the DEER tools/resources**. What features/aspects do you find useful? What features/aspects are not working well? (19 responses) All *verbatim* responses are provided below:

*Hard to navigate: difficult to search without knowing exactly what you're looking for in advance. Difficult to trace references.*

*Work papers are confusing to navigate. Column headers are repetitive and make it unclear which values to utilize.*

*In the beginning, it was easy and then it got progressively difficult. READi was very difficult to use in the beginning and then we got used to it. However, unless you know where to look and for what, it can get very difficult to maneuver. It is not very intuitive.*

*Reviewing and looking at workpapers from IOUs is nice, but often they are not really the most recent even if published as such. For modeled measures, getting the modeling documentation in most cases is completely missing.*

*Having the data is useful, but not enough technologies are covered. Plus looking for workpapers is a crapshoot, and I never know if I am using the latest version.*

*Features/aspects that are not working well: navigation is poor, version source is not up to date, inability to search measures reference values, information lies on several platforms; which leads to confusion and is time consuming.*

*Referenced sources and attachments are sometimes missing or difficult to locate; also it's difficult to know if you are accessing the most recent version.*

*I find the breadth of the measure data quite useful in regards to number and types of measures. However, having data for a single measure across 16 CZ, 4 IOU territories, 20+ building segments, and a number of vintages when the measure savings varies very little ends up resulting in too much data to process. A difficult part of DEER that made it less useful for our purposes has been the lack of a baseline UEC to compare the savings to. For instance, the savings could be 100 kWh/ton in DEER, but it is unclear if that is 1% or 15% of the baseline consumption.*

*It's not very user friendly. The READI tool is terrible. Workpaper organization is okay.*

*User unfriendly*

*Information is linked together via sptdb which are useful. Information is sometimes difficult to access and not very transparent.*

*Horrible UI*

*User interface is absolutely terrible. Impossible to use without significant training. Not transparent, assumptions not clear, source information not clear. Does not inspire trust in the quality of the information.*

*Finding what ruling overrules what in latest updates.*

*It's been challenging to find the right workpaper version and values in the past.*

*I think DEEResources.net is somewhat useful though it doesn't do a good job of sorting expired/active measures. READi is fairly comprehensive but also hard to sort. DEEResources.com is not well organized, what is contained in each annual update could be better summarized/explained.*

*The most useful feature is the rows of deemed savings data by CZ and IOU.*

*There is very minimal back-up documentation for DEER measures. For IOU measures the work papers are not consistent. Very tough / almost impossible to trace the rationale behind lor of DEER numbers/ assumptions.*

*No comment*

**Comment on the eTRM content and functionality.** What features/aspects do you think will be useful? What additional features/aspects would you like to see? (16 responses) All verbatim responses are provided below:

*The design of the system looks great. Being able to follow citations easily, and see data tables will be very useful. No additional features/aspects of interest at this time. I recognize that just populating the eTRM with existing measures is a very heavy lift.*

*Any tool should be intuitive. One additional feature that I would like to see is a listing of additional associated measures when searching/navigating a particular measure. E.g. "other users also found these measures/entries helpful". In addition a list of references with working links to access their source documents will be extremely helpful.*

*There will be a little learning curve, but once familiar will be a great resource for anyone. I'm looking forward to the rollout.*

*seeing the actual calc methodology is helpful.*

*searchable fields to look up deemed values (loadshapes, measure cost/savings, CPUC disposition), document/version control, email alerts to user on measure level changes, training to users, keeping a feedback loop open for industry to provide comments/feedback*

*The reference tags/flags look like they will be useful.*

*Would like to see data export functionality and the specification of baseline UECs. Thank you for all your work on this!*

*The eTRM demo was encouraging. As a program manager, I need quick access to energy savings and not all the engineering assumptions behind those numbers. I need to be able easily interpret what number I should reference for CETs, etc. The eTRM seems like it will provide that info for me; much more so than DEER.*

*user friendly and more graphically appealing*

*More documentation on assumptions (ex: EUL documentation). More accessibility for all data in a central location.*

*It looks fantastic from the training. I think the only thing that might limit it is not remembering the name of a measure and trying to use the search function. Otherwise, I'd prefer to use this than the other DEER resources.*

*Looks easy to use. Hoping to be able to integrate with other tools via the API to automate savings calculations.*

*the consolidation will be very helpful. also, running custom reports will help. lastly, search appears better. and the way it will update (with option for notifications) will also be great.*

*All of the features look useful at the moment. I would need to begin using the eTRM for actual research in order to get a better sense of what additional features/aspects would be useful...*

*Central repository and CalTF's effort to source back-up documentation will help. I am assuming CalTF is going to do similar work on DEER measures which may not have IOU workpapers.*

*Based on initial review, it appears to be very well organized and easily searchable. I would like to see an API developed for transferring data to the new POU reporting tool platform.*

## **CONCLUSION**

The survey responses indicate a clear need to provide a deemed measure database that is user friendly and transparent, with clear and traceable assumptions and citations. The initial response to the eTRM indicates that industry actors are enthusiastic about a change and positive about the eTRM tool's potential.