California Technical Forum (Cal TF)
Technical Forum (TF) Meeting #18
April 28th, 2016
Pacific Energy Center
San Francisco

I. Participants

Annette Beitel, Cal TF Facilitator
Alejandra Mejia, Cal TF Staff
Tim Melloch, Cal TF Staff

Tom Eckhart, TF Member
Ed Reynoso, TF Member
Ron Ishii, TF Member
Spencer Lipp, TF Member
John Proctor, TF Member
Mary Matteson-Bryan, TF Member
Mike Casey, TF Member
George Beeler, TF Member
Yeshpal Gupta, TF Member
Andy Brooks, TF Member
Ryan Hoest, TF Member
Doug Mahone, TF Member
Mark Modera, TF Member
Steven Long, TF Member
Martin Vu, TF Member
David Pruitt, TF Member
Armen Saiyan, TF Member
Sherry Hu, TF Member
Pierre Landry, TF Member
Grant Brohard, TF Member
David Springer, TF Member

Pete Ford, San Diego Gas & Electric (SDG&E)

On the Phone
Bing Tso, TF Member
Bruce Harley, TF Member
Bryan Warren, TF Member
Christopher Rogers, TF Member

Larry Kotewa, TF Member
Alina Zohrabian, TF Member

Gay Powel, Pacific Gas & Electric (PG&E)
Chan Paek, Southern California Gas Company (SCG)
Travis Richards, RMS Energy Consulting
Martha Garcia, SCG

II. Key Decisions and Action Items

<u>LED Measure Consolidation and Streamlining Approach</u>

- ACT: Cal TF staff to review lighting dispositions and 2016 ESPI scorecards for additional data not currently included in workpaper narratives.
- ACT: Subcommittee to further describe and address issues associated with lighting interactive effects.
- ACT: Subcommittee to review wattage reduction method currently in use.
- ACT: Add CEC residential specification to list of available quality standards.
- ACT: Subcommittee to consider an actionable definition of "top 50% product" quality requirement.
- ACT: Subcommittee to consider effects of Title 24 in addition to Title 20.
  - o Jon McHugh would be excellent resource.
- ACT: Cal TF staff to follow up on implementer specifics custom vs. deemed savings analyses.

<u>eTRM: "Checklist" approach to Reviewing and Consolidating Existing Measures for eTRM Inclusion</u>

- ACT: Make sure workpaper developers have to explain reasons behind initially non-cost effective measures.
- ACT: Remove Step 5 from WP Consolidation checklist.
- ACT: Pierre Landry to send comments on data quality template.
- ACT: Steven Long to check internally to make sure SCE doesn't have a comprehensive inventory of all ex ante sources.
- ACT: Remove "TRM Comparison" step from measure review process.
- ACT: General approach approved with edits made during discussion.

III. LED Measure Consolidation and Streamlining Approach

Tim Melloch, Cal TF Staff—

LED Subcommittee Summary Word Document

Tom Eckhart—One of the big discussion points up in the Northwest has been hour of use for the different applications. I assume we'll get to discuss that later on in your presentation.

Tim Melloch—Certainly, that is one of the outstanding questions to be answered by the subcommittee.

Doug Mahone—Are those approved workpapers?

Annette Beitel—They are effective workpapers currently being used by the IOUs.

Steven Long—In addition, you should probably also keep in mind workpapers currently being developed by the utilities.

Andy Brooks—It's helpful to see what level of pre-work would be done before subcommittee members are asked to weigh in. The current proposal seems like a very reasonable amount of effort for the TF Members, but it also seems like a lot for the Cal TF Staff. Are you suggesting all of the pre-work will be done by your team?

Annette Beitel—We have developed some proposals for possible staffing models. We will be discussing these details with the PAC next week and should have some more guidance on exact roles and responsibilities for workpaper development soon.

Ed Reynoso—Tim, have you been considering the Lighting Disposition in your pre-work so far?

Tim Melloch—That brings up an interesting question. How much should our final recommendations be limited by current DEER values and other such directives? I believe we have been directed by the PAC to strive for accuracy and rigor regardless of other external constraints on the PAs.

Annette Beitel—Also, we are assuming that the existing workpapers reflect the requirements in the latest dispositions.

Steven Long—I would still review the lighting disposition and other non-WP documents. There are useful baseline analyses in the lighting disposition as well

as, in the latest ESPI scorecards, suggests that the wattage reduction ratio method may need to be re-visited.

- ACT: Cal TF staff to review lighting dispositions and 2016 ESPI scorecards for additional data not currently included in workpaper narratives.

Armen Saiyan—I would also look at number of measures in other TRMs as we try to settle on the right number of LED measures for California.

Annette Beitel—Certainly.

Tim Melloch—

Savings Calculation Methodology Comparison Attachment

Doug Mahone—As long as the multipliers are up to date, the delta watt method works well. If not, the lumen equivalence method works better, California used to use lumen equivalency. I'm not sure why that changed.

Steven Long—Originally, the wattage reduction ratio was set up for CFLs. It worked reasonably well there because CFL efficacy was very stable over time. However, LED has changed, so savings are now artificially lower. Edison's latest ESPI scorecard mentioned that it may be time to rethink the method.

Pete Ford—Interesting. The SDG&E scorecard did not mention that.

Martin Vu—I think the EAR team's concern with the DLC lists as quality screen was that they didn't understand how those standards were going to be enforced by the PAs.

Doug Mahone—The thing I don't understand about that is that the DLC Qualified Products List has all kinds of filtering tools that can be used to ensure particular quality concerns are addressed.

Tom Eckhart—Another thing that seems to vary regionally is the assumptions for rates of CFL replacement with CFL lamps.

Tim Melloch—I haven't really seen any research on that topic, but the conservative assumption is like-for-like replacements.

Doug Mahone—There is also a sort of "lost savings" question here in cases where LEDs are replacing CFLs only halfway through the estimated life of the CFL. Because, if the baseline for the CFL was incandescent but now the baseline for the LED is the CFL, then your are throwing away the delta between incandescent and CFLs for the remainder of the years the CFL would have stayed in.

Steven Long—Did you see anything about the beam method?

Doug Mahone—The issue there is that the lumen output of the lamp is limited by the fixture and how much lighting is actually delivered.

Discussion on Subcommittee Scope Questions

Steven Long—The variation in interactive effects within same climate zones but across utilities seems to have come from building stock assumptions in different territories and how those were used in the modeling simulations.

John Proctor—But those differences hardly seem significant enough to let the resulting complexity get in the way of better program implementation.

- ACT: Subcommittee to further describe and address issues associated with lighting interactive effects.

Martin Vu—Based on recent communications from the EAR team, it sounds like the wattage reduction ratio baseline needs to be updated.

Pierre Landry—Yes, we probably can't say right now that the old methodology needs to be thrown out, but we seem to all agree that it at least needs to be looked at.

- ACT: Subcommittee to review wattage reduction method currently in use.

Steven Long—You need to add the CEC spec to the quality standards.

- ACT: Add CEC residential specification to list of available quality standards.

Doug Mahone—It's a major resource issues. The DLC spends millions of manufacturer dollars filtering for quality. I don't understand why we would sign up California ratepayers to re-do that work.

Pete Ford—Would it be appropriate for the subcommittee to propose a definition of the "top 50% products" requirement?

- ACT: Subcommittee to consider an actionable definition of "top 50% product" quality requirement.

Steven Long—I would also consider the effects of Title 24 in addition to Title 20. John McHugh would be a great person to involve as part of that discussion.

- ACT: Subcommittee to consider effects of Title 24 in addition to Title 20.
    - Jon McHugh would be excellent resource.

Annette Beitel—How are interactive effects currently calculated?

Doug Mahone—They come from DOE2.2 modeling.

Grant Brohard—And there was a "lab house" comparison in Illinois that did seem to validate the current numbers.

Doug Mahone—But those were perfectly sealed, unoccupied houses with full use of each of the technologies. That wouldn't be the case if you were only switching a small percentage of lamps. That wouldn't create enough of a change in temperature to set off the thermostat.

Pete Ford—There is also an SDG&E billing analysis in which the effects were lost in the noise.

Steven Long—Mark McNulty is the author of the published paper.

Armen Saiyan—I agree that it does seem that the current list of workpapers has come from individual programs needing new deemed estimates.

Ron Ishii—And that brings up the question of when you develop a new workpaper for similar technologies.

Tim Melloch—That is certainly the question we're hoping to make some headway on with this subcommittee.

David Springer—I would hope that there is standard we could come up with to be used universally across all measures. In coming up with that standard, there should be some consideration of the administrative costs and risks involved with the increased number of measures.

Spencer Lipp—In terms of deciding when a measure belongs in custom or deemed, there may be an argument for LEDs not belonging in deemed. Custom measures, if the rules were designed correctly, would be more appropriate for variable measures like LEDs, which are still changing rapidly.

- ACT: Cal TF staff to follow up on implementer specifics custom vs. deemed savings analyses.

Mark Modera—What do the manufacturers think about all of this? I think their opinions on what they will be able to deliver would be informative.

Doug Mahone—I think using the DLC is one good way to bring in the manufacturers.

Tom Eckhart—The big hang up on cost effectiveness in the Northwest has been measure life.

Armen Saiyan—I think this topic isn't just related to to LEDs; I think we'll be forging the path forward for more consistent measure development across the board for the eTRM.

IV. eTRM: "Checklist" Approach to Reviewing and Consolidating Existing Measures for eTRM Inclusion

Speaker, organization—

Checklists and Templates Word Documents

Annette Beitel—What does the group think about including a preliminary check for cost effectiveness? We have received mixed input about the value of estimating cost effectiveness at the individual measure level.

John Proctor—I think it's more important to make sure measure is effective. Some non-cost effective measures are necessary for particular segments, such as the residential market.

Steven Long—Some measures eventually become cost effective after a few years in the field.

Pierre Landry—Those being completely valid scenarios, I do believe there is value in making measure developers explain their logic behind proposing a currently non-cost effective measures.

Martin Vu—Also, historically, political, industry, or stakeholder interest have led to the inclusion on non-cost effective measures.

Doug Mahone—Also, sometimes measures are only cost effective in some settings.

Pierre Landry—Those are other cases where the benefits are not monetized.

- ACT: Make sure workpaper developers have to explain reasons behind initially non-cost effective measures.

Mike Casey—Are pass-through workpapers still subject to review by CPUC Staff?

Group—Yes, and the results of that review are often retroactive.

Mark Modera—Isn't there a single database that the public can use to tell whether a single measure has ever been used?

Group—No.

Steven Long—It will also be important to ensure that the most recent version the WPs actually incorporate all "pending changes."

Pierre Landry—What exactly would you be looking for in DEER during step 5?

Tim Melloch—At the very least to make sure you aren't accidentally missing any sources or values?

Annette Beitel—The problem with that is that in practice it tends to be a fool's errand. It really is like expecting everyone to find every needle in the haystack. What if we just ask the developers to ensure DEER values are being sourced correctly?

Tim Melloch—That basically merges 5 into 6.

Doug Mahone—Why don't we ask the developers to grade the quality of DEER values on a simple 1-5 scale?

Alina Zohrabian—Maybe specifying what parameters need to be crosschecked against DEER would make that step more actionable.

Spencer Lipp—DEER seems to be just one more source of Best Available Data. I would argue that it doesn't need to be separated into a different step.

Group—Agreement.

- ACT: Remove Step 5 from WP Consolidation checklist.
- ACT: Pierre Landry to send comments on data quality template.

Armen Saiyan—Would the Data Source Quality Analysis also apply to DEER references?

Tim Melloch—Yes.

Steven Long—This sounds like a lot of work for each parameter.

Annette Beitel—Our experience has been that the more robust sources are quickly validated through a Google search. We envision this to be a 45-minute process at most. A source that can't be found in that time frame is not transparent enough.

Tim Melloch—Also, the validation process wont always be that long. We can assume that many similar parameters will be derived from the same sources. At which point source quality can become a very simple internal crosschecking process.

David Pruitt—What happens if and when we find weak sources?

Annette Beitel—Then that would be flagged as a need for more data. That list of flags would then be used during the coming year's EM&V study creation process.

David Springer—Is there any possibility of asking the current EAR team to populate this template for their DEER measures?

Tim Melloch—We have been trying to work with the EAR Team consultants to get that process started. So far we have only received perfunctory responses that rout us to massive amounts of unorganized data. We are hoping to continue working with them to fine tune the documentation efforts.

Doug Mahone—I think that it will be vital to start building the eTRM look up tables as we go through this review process. That will change the nature of the review and updating process fairly quickly.

- ACT: Steven Long to check internally to make sure SCE doesn't have a comprehensive inventory of all ex ante sources.

Annette Beitel—So, what does the groups think about the amount of work we're proposing?

David Pruitt—I think we need to focus on doing a small amount of things well.

Pierre Landry—My feeling is that it will get easier as you go along. There will be a kind of snow ball effect as we build up reviewed material. Also, these tools will make ongoing new measure review easier.

Ryan Hoest and Spencer Lipp—Yes, it is already going to be a lot of work. In terms of the TRM comparison step, we have plenty of experts in the group with enough varied experience that can flag particularly outdate methods or sources. We can simply reserve the right to ask for a comparison against other jurisdictions for particularly problematic parameters or measures.

- ACT: Remove "TRM Comparison" step from measure review process.

Steven Long—For the "Other Potential Issues" step, I think you'll find a lot of exceptions and qualifications, either from policies, program goals, or regionality.

Armen Saiyan and Pierre Landry—There is only so much that the eTRM can do to help the programs people from hurting themselves.

Martin Vu—In that case it will be important to get agreement from Commission Staff that the utilities will not get faulted for not including programming details in the ex ante characterizations.

Annette Beitel—This is a huge amount of work even after removing the TRM comparison step. What is the group's final conclusions on reviewing each source?

John Proctor—I think the answer depends on who that "we" is.

Andy Brooks—I think if we're going to do this, we might as well do it right. The largest problem we're trying to solve is faulty data sources. We need to stand strong with that goal.

Pierre Landry—And then have a clear process structured with the Commission's EM&V staff to prioritize the data gathering efforts. It will be very important to address the largest data gaps as soon as possible and make sure there is some level of comfort with the less serious ones while we get around to those.

Group—Agreement.

Armen Saiyan—Staring with high impact measures will help with that.

- ACT: General approach approved with edits made during discussion.

[Agenda items five and six (eTRM: Approach to Determining Correct Number of Measures and Draft Data Spec) were delayed to a later meeting]

V. Repair Indefinitely and Existing Conditions Baseline Opportunities Brainstorm Discussion

Alejandra Mejia, Cal TF Staff—

PowerPoint Presentation

In regards to CPUC Staff's recent white paper on AB 802 implementation, the group expressed enthusiasm for streamlined approaches to existing conditions baselines and concern as to the practical implications of the proposed "50% cost to repair" standard. Dan Bush, from the Office of Ratepayer Advocates, recommended that measure proposals be limited in accordance to the data they are based on.

VI. Emerging Technologies Coordinating Council Process Discussion ALL

Mangesh Baskar, PG&E, Emerging Technologies Coordinating Council (ETCC)—

PowerPoint Presentation

Annette Beitel—Do the IOUs have a target number of measures to adopt from ETCC each year?

Mangesh Baskar—It's hard to count ET's influence on program because sometimes ET project findings inform programs without the actual technologies getting through. However, I believe PG&E adopted 8 ET measures in the 2013-2015 cycle.

Steven Long—I think Edison has a target of ET measures providing a certain percentage of our savings. I believe it is around 9%.

Annette Beitel—That sounds like roughly 15 measures a year statewide.

Pierre Landry—Do you take into account market potential?

Mangesh Baskar—Market potential can be analyzed at any of the three stages. Navigant actually does potential studies for some ET measures.

Annette Beitel—This seems like a good process for truly new techs. The measures we've looked at are market ready for fairly widespread deployments. Those don't seem to fit your framework as well.

Mangesh Baskar—We still ask everyone to go through the intake process, at that point it may skip the programs and go straight to engineering. We use it as a funnel to help us centralize intake with statewide representation. Submitters select which Program Administrators they want review from.

Mary Matteson Bryan—Do third parties have to go through this?

Mangesh Baskar—That's what we're trying to recommend.

John Proctor—I can see it working for products, but what is the incentive for me to give you my really cool program idea?

Annette Beitel—Many of the questions we've received in regards to the ETCC have been about the amount of time the process takes and the transparency of the decision-making.

Mangesh Baskar—We are currently working on a timeline depiction tool to post on the website.

Annette Beitel—And the transparency of the decision making?

Mangesh Baskar—There are three possible outcomes for all submissions: Acceptance, rejection, or a request for more information. We make a point of clearly documenting our reasoning in each of the three possible outcomes.

Jon Proctor—What if he utilities steal my ideas? It's happened to me and at least two other thirds parties in the room right now.

Mangesh Baskar—The idea owner would clearly be the best implementer. So even if we wanted to, I don't think we'd be very good at stealing and implementing your ideas.

Jon Proctor—Be that as it may, we stopped submitting our ideas to the ET process because we grew tired of them being stolen.

Mangesh Baskar—If that is really a concern, you can always ask for an NDA to be signed during the submission process.

Annette Beitel—Well, an NDA would not address Jon's concern. Agreeing to not disclose is different than agreeing not to use the idea.

Tom Eckhart—Jon, have you seen other jurisdictions that do it better?

Jon Proctor—We had much better experience in Kansas, Missouri, Nevada, and Florida. In those states we were allowed to implement all of our proposals.

Annette Beitel—Well, we've unfortunately run out of time. Thanks for the presentation, Mangesh. We will have a group discussion on the topic next meeting.

VII. Closing