MEETING NOTES

California Technical Forum (Cal TF) Meeting

Thursday, February 23, 2023
10:00 a.m. – 4:00 p.m.
PG&E HQ (300 Lakeside Drive, Oakland, CA 94612)

Time (PST)	Agenda Item	Discussion Lead(s)
10:00 – 10:15	Introduction and Agenda Review	Annette Beitel
10:15 – 11:15 (60 min)	Metric 4A Develop/Implement Measure Identification Strategy – Workplan • Expanded measure "pull" strategy • Present 4A Workplan **ACT:** • Affirmation of 4A Workplan	Spencer Sator
11:15 – 12:15 (60 min)	Metric 1C eTRM Enhancements Update • Review & prioritization process • Enhancement groups and high-level goals **ACT:** • Stakeholder input on eTRM priorities	Tomas Torres-Garcia and Ayad Al-Shaikh
12:15 – 1:00	Lunch (lunch provided for in-person attendees)	n/a
1:00 – 1:45 (45 min)	Workplans • Metric 6D Regulatory Updates to support Cal TF Membership in Staying Informed • Metric 3C Measure Package Communication Plan and Versioning Rules **ACT:** • Affirmation of 6D Workplan, ID Champions • Affirmation of 3C Workplan, ID Champions	Arlis Reynolds Ayad Al-Shaikh

1:45 – 2:30 (45 mins)	White Paper Updates • White Paper topic list • ISP White Paper Update • Proposed topic: Streamlining Measures **ACT:** • Input on topics	Arlis Reynolds Ayad Al-Shaikh Annette Beitel
2:30 – 2:45	Break	n/a
2:45 – 3:45 (60 mins)	Metric 8C Cal TF 5-Year Roadmap – Update **ACT:** • Input on Roadmap concepts	Annette Beitel
3:45 – 4:00	Closing and Next Steps	Annette Beitel
4:00+	Cal TF Happy Hour – location TBD	n/a

Meeting Materials: http://www.caltf.org/tf-meeting-materials

- [1] TF Meeting Presentation
- [2] Draft 4A Workplan (Develop/Implement Measure Identification Strategy)
- [3] Draft 6D Workplan (Regulatory Updates to support Cal TF Membership in Staying Informed)
- [4] Draft 3C Workplan (Measure Package Communication Plan and Versioning Rules)

Meeting Attendees

	In-Person	Via Telephone
Cal TF Staff	Annette Beitel Arlis Reynolds Ayad Al-Shaikh Chau Nguyen Randy Kwok Spencer Sator Tomas Torres-Garcia	(none)
Cal TF Members	Adan Rosillo Alfredo Gutierrez Anders Danryd Arash Kialashaki Armen Saiyan Charles Ehrlich Eric Noller Gary Fernstrom George Beeler Roger Baker Sepideh Shahinfard Spencer Lipp Steven Long Tom Eckhart	Abhijeet Pande Andres Fergadiotti Briana Rogers Christopher Rogers Eduardo Reynoso Greg Barker Jay Bhakta King Lee Kristin Heinemeier Lake Casco Martin Vu Mike Casey Myrna Dayan
Non-Cal TF Members	CPUC/CPUC Staff (none) IOU/POU Danielle Dragon / PG&E Danny Ng / PG&E Harpreet Singh / PG&E Henry Liu / PG&E James Gingras / PG&E Soe Hla / PG&E Tai Voong / PG&E Implementer/3P/Consultant/Other Antonio Aliberti / Cascade Energy	CPUC/CPUC Staff Peter Biermayer / CPUC Rachel Murray / DNV IOU/POU Andres Marquez / SCG Ajay Wadhera / SCE Babak Yazdanpanah / LADWP James Choi / SCG John Zwick / SDG&E Sean Lim / LADWP Implementer/3P/Consultant/Other Code Bruder / The Energy Coalition Jay Luboff Jeff Romberger / SBW Jim Hanna Mohammad Dabbagh / NORESCO Paul Kuck / Energy Solutions

Meeting Notes

I. Introduction and Agenda Review

Presenter: Annette Beitel
Materials: http://www.caltf.org/tf-meeting-materials

II. Metric 4A Develop/Implement Measure Identification Strategy

Presenter: Spencer Sator
Materials: http://www.caltf.org/tf-meeting-materials

- Mike Casey (via chat): I see CLTC, are you considering other university programs?
    - Arlis Reynolds: Yes - these are just representative examples. Please recommend any specific ones you think would be especially promising.
- Andres Fergadiotti (via chat): How do you define a good idea?
    - Arlis Reynolds: Spencer will explain proposal for "scoring" ideas; should be a good discussion. Definitely want everyone's input.
- Spencer Lipp: Should the ideas from CalNEXT go into the intake? How do you see that working?
    - Spencer Sator: Yes, this is an intake stream that we have identified; it will ideally be a two-way stream. If there are projects that they think are ready to be in the eTRM, then they would hand these to us; if we think some projects are a bit premature for the eTRM, then we would hand these over to them.
    - Steven Long: If this is a two-way stream, how do you deal with the fact that what you are proposing is in the Cal TF scoring metric and each of the ET programs have their existing criteria. How would you align those because they may end up with different results?
    - Spencer Sator: Not sure if it is possible to align that since we have different mandates, but they can make the decision if they want to take in a project or not and we can do the same. Aligning their work with ours is not really the goal, we are just standing this process up.
    - Adan Rosillo: We should include implementation/ESCOs that deliver these to the customers; they know what is in the market already. We will get a bunch of ideas; but they are just ideas, we need products. Some might not be economically feasible, and we need to know how they will perform in the market.
    - Spencer Sator: These will be good sources; we will include these companies.
- Tai Voong: Are we planning to have a database for measures that are outside of California, either in the eTRM or a Cal TF website?
    - Spencer Sator: There will not be a database, but we can share the work that we have done with folks. We are still reviewing the data.
    - Tai Voong: Having the information in a database will be useful so that people can look at the data.
    - Spencer Sator: We can come to this group to see if this is needed, but putting a database together can be a lot of work.
- George Beeler: What about categories such as greenhouse gas emissions, social benefits and health/safety measures? How are the weighted?

  - Spencer Sator: We will discuss these with the team shortly to make sure that we are including these.
- Gary Fernstrom: I am not sure who the users are, we are reviewing all these opportunities but who wants them? Implementors or administrators?
  - Annette Beitel: We met with SDG&E last month, and we heard from program and planning people that we needed new measures, this was a common topic. We heard this from a lot of people.
  - Gary Fernstrom: Are the IOUs as a group specific about what they need or are they just wanting everything and anything? There is a lot going on, but it is not clear to me if it is optimized to what they need/want.
  - Ayad Al-Shaikh: We can focus on things that people want and those specialized targets, like what is important to the CPUC, we want implementors to be a part of Cal TF so that we can hear from others and start conversations to what people want. In the measure screening committee, we have groups from a lot of entities, NAESCO, and we want to make stronger connections.
  - Adan Rosillo: It is nice to have NAESCO but having actual implementors like Honeywell would be beneficial. The companies that do this kind of work.
  - Spencer Sator: This is more for smaller companies. If it is in market then we can do it, but if it is something new then it would probably be better for accelerator programs.
  - Henry Liu: The PAs want to figure out how to best leverage time and ensure that we have people that will implement these measures. We have to figure out how to best involve people.
- Ed Reynoso (via chat): Are all the proposed measures that will be scored and evaluated currently active in other jurisdictions? I suggest flagging those measures that are inactive.
  - Arlis Reynolds: Some measures will be active in other areas (e.g., deemed measures offered elsewhere but not in CA), but others will not necessarily be active (e.g., measures from cleantech community).
- Danielle Dragon: Total System Benefits (TSB) is our goal for next year. This encompasses a lot that is on the metrics.
  - Steven Long: If we do TSB or TRC, measure life is part of that already so you may not want to double count things twice. Depending upon what we do, we might not need something things.
  - Spencer Sator: We can change the weighting if possible and remove categories.
  - Adan Rosillo: We should list the non-energy goals; this is probably the most important on that list.
  - Spencer Sator: We can go over these if we have time.
- Steven Long: Two comments, one is contrary to the easy of adoption or market barriers, you need to identify significant ones. Then, on the affordability side is there a possibility for the price to come down (production ramp up or anything else). Some of the ETs are expensive.
  - Annette Beitel: If you have a high initial cost, how do you access if the cost would come down? Is there a good way to do this.
  - Steven Long: Not sure if there is a good way to do this. This would be more of a judgement call, not really a scientific way. Can you put it in the assembly line, is it using rare metals, could be good predictors.

- Mike Casey (via chat): I'm wondering how you will answer some of these customer appeal metrics. Would there be some kind of survey or...?
    - Spencer Sator: There will not be surveys, it would just be a panel for folks making the decisions. This screening would be a fast process. When it moves on to other stages then we will be doing the additional research/analysis. It will not be perfect, but it will create a rough prioritization. The intention is to get rid of all the ideas that are not feasible.
    - Steven Long: Is it even potentially eligible? We see stuff on the wrong side of the meter for instance.
    - Spencer Sator: Correct, we do not need to look at stuff that will not meet basic goals.
    - Lake Casco: I think what Stephen was referring to is that is the measure programmatically eligible in CA.
- Steven Long: Should PA be on category 3 or just implementation?
    - Spencer Sator: We can remove PA and just leave implementation; ease of implementation.
- Adan Rosillo: We need to mention specific non-EE goals like refrigerants, these are intertwined with greenhouse gases, maybe those need to be weighted higher.
    - Spencer Sator: Refrigerants are there, we can bump that up and we have had a lot of internal conversations on this. Thank you for the feedback.
    - Adan Rosillo: You can combine the measure life with cost effectiveness and weigh the non-EE goals higher.
    - Spencer Sator: Yes, we can do this.
- George Beeler: How does all meet the big goals that CA has for climate change? GHG/refrigerants.
    - Spencer Sator: It is a tricky position, that is not our mandate, we just want to get measures into the eTRM and that is how the scorecard is weighted. Non-EE goals is only 15% and has a lot of smaller categories, it all depends on how we want to weigh things and introduce them into the system. This is open for discussion, but we are not charged here with that mandate, that is the logic. We simply just want to add EE measures into the portfolio.
    - Annette Beitel: Can you rephrase your question? Are you basically saying, how will this help reduce GHG in California?
    - George Beeler: Kind of, but more of how are we helping California's big goals on climate change, greenhouse gas reduction, refrigerants. It seems like part of the goals for Cal TF is to response to CPUC when they are not moving fast enough in that direction.
    - Annette Beitel: We should discuss this during the 5 year roadmap, we will discuss how Cal TF will help the longer term goals. Maybe less around new measures and more around how can we get measures faster through the process and get savings up there.
    - Gary Fernstrom: There are multiple goals it is tough to choose one what to use, reducing GHG/low income/electrification/renewables (all of these nudge in different directions even though we are interested in energy savings), and it is tough to choose what satisfies all of the goals. The policy makers send out different funding for the different goals. There is specific funding for things such

as fire protection or electrification. We might want to choose categories within these funding channels to meet those needs.
  - Spencer Sator: Some of these might score low but they achieve other goals then we can still go down our scorecard and pull them in, fire mitigation or water savings. There is a mechanism for this as well.
  - Charles Ehrlich: We need to see TSB on that list. It might overlap with some there, but it will be good to have. It is very important that we have it.
  - Steven Long: Also, what is a good TSB.
- Andres F (via chat): what about alignment with EE policies and goals, e.g.., decarbonization/electrification?
- Lake Casco (via chat): I think size of market is undervalued, less than 4%. If the end goal is to get measures implemented, then market size should be weighted higher. We should prioritize this, since you do not want to waste money on something that might only cover a small portion of the market.
  - Mike Casey: Agree about size of market.
  - Spencer Sator: Some of this might be covered in the category 1, the annual EE savings potential covers the customer base (system wide) and not per person, does that change your comment?
  - Lake Casco: Yes, it does.
  - Roger Baker: You will not have a lot of deep data on this, I would try to keep the metric simple, product stability and size of market might not play a big role when comparing these against other of the bigger categories, maybe only consider 6-8 for the screening process. We can decide whether to do more work after the screening process and address the smaller categories then. We do not want to get caught up on other things.
  - Danielle Dragon: TSB covers a lot of this, so if we add it then you can get rid of 80% of these categories. TSB covers things like EE savings, measure life, refrigerants, costs, which will be the answer to reducing these a lot.
  - Spencer Sator: A lot of these will not have TSB scores for these so we might need to consider these.
  - Danielle Dragon: If you have energy savings then you can plug it into CEDARS and identify TSB.
- Martin Vu: Would success in other Non-CA jurisdictions be captured in Product Stability shown in Category 3?
- Paul Kuck: What's the timeline on getting info on the TSB?
- Steven Long: We are affirming the approach, right? Not the details?
  - Ayad Al-Shaikh: Yes, just the approach not the details, there are still discussions that need to happen on scoring and other details.
  - Gary Fernstrom: The framework looks well thought out.
  - Spencer Sator: We will communicate with the team later to discuss more details and folks can send out questions or comments to me via email.

Cal TF affirmed 4A Workplan.

Arlis Reynolds: If you have questions/input on the 4A New Measure ID intake and scoring, email Spencer.Sator@futee.biz.

III. Metric 1C eTRM Enhancements Update

Presenter: Tomas Torres-Garcia & Ayad Al-Shaikh
Materials: http://www.caltf.org/tf-meeting-materials

Danielle Dragon: Would the measure announcement log be similar to the measure log? Is that what you are envisioning?

- Tomas Torres-Garcia: Currently not sure yet, but this is the type of input that we want to hear from stakeholders during the March Charette.

Steven Long: What is the planned date for the Charette, and will it be in person only?

- Ayad Al-Shaikh Not set yet, it will be mid-March and we are planning to have it in person in LA.

Steven Long: Do you know how many people are using APIs?

- Ayad Al-Shaikh: We know that there are a couple IOUs that are using them to update their systems and there are also some implementation companies that have reached out, but we do not know who is using them until we talk to folks. Performance is good now but as more and more people start to use it; it would be good to have something like this in our back pocket.

Roger Baker: Two comments, building more capabilities will give you more variations of the end points so pre-building might be hard to do, the second part is that I am not sure what the issue is with performance. When I was dealing with the eTRM in the past, it seemed to be fast enough. The only problem with that was all measure permutations and the work around that was to build this every night and the API endpoint that calls that basically calls the same table as the csv file that it is built from. This is designed for machine to machine data exchange, it would be interesting to talk to the people who actually work with this stuff on their systems and see if they are trying to do everything in real time or at night and using that data at night. It might be better to ask how they are using the data.

- Danielle Dragon: In addition to the API, could there be a PowerBI connection?
- Charles Ehrlich: It would be somewhere between an API and a built in reporting system.
- Steven Long: Would that deal with the request of downloading the PowerBI information?
- Charles Ehrlich: Yes.
- Danielle Dragon: There is the option to make an API connection or use your log in, but we have not made it work yet, but we can save this for March.
- Tomas Torres-Garcia: If you do use APIs we would love to hear how you are using the data during the March Charette and go from there.

Annette Beitel: If there are users that want to suggest enhancements that may not be on the list, can they just send you an email?

- Tomas Torres-Garcia: You can send these to me directly or send them to the eTRM inbox.

- Ayad Al-Shaikh: The eTRM inbox is the more robust one.

Anders Danryd: Now that resolution updates are done, how are you screening and prioritizing, is there voting or like a scoring (cost, time, and those sort of things)?

- Tomas Torres-Garcia: The 45 that we selected were enhancements that were popular among stakeholders.
- Ayad Al-Shaikh: That is what the March Charette is going to be about, there will be a lot of discussions and feedback, but the funders will make the final choice.
- Annette Beitel: Will the Charette be broken up into sections so that people can call in when they are interested?
- Ayad Al-Shaikh: We will make the material available ahead of time and bucket them for folks so that they can focus on what they are interested in.
- Soe Hla: For corrections, like text change or adding delivery type, have we figured out what the procedure is and is there a way to get these turn-around quickly?
- Ayad Al-Shaikh: There are some changes that are very systematic changes that affect all measures, like what we did for PA lead at one point, rather than going in and adding that the republishing and building permutations. For strategic things like that where we want to add some data to everything measure package and make a systematic change, we can do that on the back end, but we do it cautiously. That is something where we talk to everyone about it, get a good QC completed ahead of time, and then have our software developer upload the data. There are options like that where we can make measure development much easier in some cases.

IV. Workplans

Presenter: Arlis Reynolds & Ayad Al-Shaikh
Materials: http://www.caltf.org/tf-meeting-materials

- Spencer Lipp: Does the workplan include opportunities to engage Cal TF or other stakeholders in comments on CPUC policy memorandums or deemed program policy updates or other updates? E.g., there was a CPUC memo on POE for deemed, and it was difficult for implementers to provide comments; implementers had to go through IOUs to provide comments.
    - Arlis Reynolds: The workplan includes clarification of policy where there might be misunderstanding or different interpretations of current policy; Cal TF would facilitate resolving lack of clarity or different interpretations of policy.
    - Annette Beitel: Is the question whether Cal TF would consider organizing Cal TF comments to a decision or a rule? Would this also include formal regulatory proceedings?
    - Spencer Lipp: That is part of it, but I would also like other stakeholders that are not part of the Cal TF to be aware and provide comments. I’m not talking about formal rulings/proceedings, more of interpretations of policy by the CPUC and memos. One example is the POE memo.
    - Annette Beitel: Traditionally, Cal TF has not provided Cal TF comments in formal proceedings or staff interpretations. We do develop White Papers and TPPs to

make recommendations about future policy changes, and we have comments on eTRM where we are the subject matter expert. Several reasons this would be difficult: 1) CEDMC provides comments on behalf of implementers; 2) also hard to herd the cats in a short time to provide comments; 3) Cal TF may be viewed as less of a neutral body if taking a position.
  - Spencer Lipp: I'm requesting a mechanism for stakeholders to be aware of and provide comments – not necessarily in formal proceedings. The example is a CPUC policy interpretation memo where they asked for comments from IOUs.
  - Perhaps Cal TF could just provide a mechanism to provide comment from individuals or companies.
  - Annette Beitel: Let's talk about this in the Roadmap discussion, where we want feedback about how we see Cal TF's role over time.
  - Henry Liu: A broader issue is that Spencer (implementers) would not have known about this document if the IOU did not communicate the opportunity to comment. We should explore how to inform that there is an option to comment. That's something we are trying to think about.
  - Annette Beitel: We got a lot of feedback from the PAC and TF that official guidance and unofficial guidance is all over the place; there is a very strong desire to make sure the guidance is organized, streamlined and that future communication is public. PAC still feels like guidance is given through meetings with a fraction of stakeholders. The transmission of guidance is not done in an organized, transparent, and clear fashion – if you aren't in the know, you may not get the information. There is also confusion about what is official Commission guidance vs. what is staff interpretation. Before starting the deemed measure consolidation, we reviewed actual guidance from Commission (what does the commission require) vs. what is the staff interpretation. We definitely want to communicate when there are opportunities to comment on things as well as inform about new guidance and new directions. We understand this is a major issue.

Cal TF affirmed 6D Workplan.

Cal TF affirmed 3D Workplan.

V. White Paper Updates

Presenter: Arlis Reynolds, Ayad Al-Shaikh, & Annette Beitel
Materials: http://www.caltf.org/tf-meeting-materials

ISP White Paper Discussion:

- Spencer: The Standard Practice Baseline and current ISP Guide came out of the T2WG which resulted in R4939, Standard Practice Baseline Process and ISP Guide. This is not about relitigating that. This is about streamlining the process and making information available. It's not about changing the policy that's been written but working within those bounds and making it easier for everyone to implement.

- Antonio: For me, engaging 3-5 vendors and designers, how possible to establish whether a baseline is or is not ISP. I think the guidelines need to be re-written or should not be including in EE projects in California. This is something we've been talking about; good to streamline, reduce the timeline to get an ISP study done – but in the long run, I would prefer to change the CPUC Guidelines.
  - Arlis: The primarily focus is improving streamlining, consistency, sharing, transparency, in the current process; but I expect we will get a lot of input like yours in the stakeholder outreach to understand existing challenges and barriers. It makes sense that we would have some potential recommendations about adjusting guidance to achieve the stated benefits.
- Adan: I know the objective is not to challenge the ISP. There is a handbook to follow. The first objective, from the regulator's perspective could be perceived as a challenge because they have already written the requirements. The intention (of the White Paper) is great – we all know it's difficult sometimes to prove a baseline, but there is a resolution that says we must follow these rules. We should consider changing the wording or approach so that CPUC doesn't see this as a challenge to the process. It sounds like we are trying to modify the ISP.
  - Arlis: We used the word "clarify" rather than "modify," and that objective is in response to stakeholder feedback about inconsistent interpretations about what is required. We want to understand specific examples of what those challenges are. We can fix the wording to make sure that we are clear about the objective.
- James: One of the objectives would be to set up an interval to keep studies up to date.
  - Arlis: Yes, a recommendation to keep ISP studies up to date.

Please email arlis.reynolds@futee.biz know if you want to be on the core team for ISP.

Streamlining Measures Discussion:

- Annette Beitel: What do stakeholders think: Should we reduce the number of permutations, or keep the 700,000 permutations? I have concerns that as we add more permutations, we might slow the system down and have issues managing the data from a computational standpoint (from the eTRM system perspective). However, from a planning/development/implementation standpoint is the number of permutations, ok?
  - Steven Long: 700K times how many systems are tied into the eTRM. Sometimes it is easier to hit a matrix, this process is going to take a lot more effort to do a parametric analysis and figure out what is the most impactful.
- Annette Beitel: Maybe the detail is good for high impact measure but for other measures it might not make as much sense.
  - Steven Long: It is not just the impact but the effort to develop something. So, on a high impact measure it makes more sense to spend the time, but you will still have to go through all these steps. It is the level of effort, is it worth it? I do not know the answer now. Sometimes it is getting the data to drive it, what is the cost of that.
  - Spencer Lipp: I do not look at it as high impact vs low impact. I look at what is the value of the uncertainty that you have versus the cost it takes to get to that level of uncertainty. This cascades into all the other system, and the data collection that is done in the field, is it worth doing this granularity to gather the data, put it in the system, validate it, put it into the implementors system, put it in

    the PAs system, then they validate it, and then it goes up in the claims? I personally do not think it is worth all the effort. Some values may not vary by much.
    - John Zwick (via chat): I am with Spencer. There is significant effort in managing all the data collection, etc. and not just the measure package engineering work. And this data collection/management is not one-time but ongoing.
    - Gary Fernstrom: I think it is not so important if it is a high impact or low impact measure, it depends on the incremental value that the granularity gives you. If the granularity shows no differential result, then it might not be worth it. There is no straight forward answer; some measures merit greater granularity, and other measures do not.
- Annette Beitel: Would it be worth to draft a white paper to streamline measures and reduce permutations? Some do not find all the data useful. Some POUs do not want to use all the permutations, they are used to seeing a point value, they do not find all this data useful.
- Danielle Dragon: I would say accessibility too, some have a lot of data points and files cannot be opened in excel (measure codes is a good example which I need to use other software to open up and not that many people might be familiar with all the software available). You can maybe almost lump this in with the coversheet because it identifies high, normal, low impact.
- Annette Beitel: Something we are thinking of doing in the eTRM is tracking the measure journey from ET all the way through market transformation. If we can get the technical potential into the eTRM and match this against claims over time we can see when this starts to be a high impact measure. However, Spencer and Gary do not think they should be handled separately, high vs. low.
    - Gary Fernstrom: My view on high impact vs low impact is that there are a lot of low impact opportunities that have great future opportunity associated with them, ET, so it bothers me when we classify it as that.
    - Armen Saiyan: I am getting some déjà vu here. There might be quite a bit of solutions already covered in TPP 5, which is something that we worked on in the past.
    - Annette Beitel: We pursued this at a different time but we are in a different situation now, so it is good to bring this back.
- Lake Casco: How good is the granularity if it complicates reporting, accessibility, and others. However, there may be additional upfront work to get this started for some of the measures and sometimes you will not know the impact of the granularity until you do the analysis, but I do think it would be valuable.
    - Annette Beitel: We would do a sensitivity analysis to see what are the parameters that have the greatest impact and make some determinations that way.
    - Spencer Lipp: Some parameters might affect measures differently; this is something to watch out for certain measures. HVAC and climate zone is a good example.
    - Armen Saiyan: Once you run the analysis and get a range to choose a single point, this is just a consideration, but you might need to take the lower bound and be conservative, so it is not as risky.

- Steven Long: At the time TPP 5 there was a process to do M&V on high impact measures, does this still need to be done or was this abandoned?
  - Henry Liu: I have not seen that identified in evaluation for a whole, maybe in about 2 years.
- Adan Rosillo: Look at the source that created that number of permutations, you still must do the analysis. I agree that high, med, low should not be a factor. Can we actually reduce the number of permutations? We can consider the analogy for trash reduction; you must look at the source.
- Ayad Al-Shaikh: That idea of finding where these permutations are coming from is important, because there are a few measures that are big offenders and some measures that do not use that many already.

VI. Metric 8C Cal TF 5-Year Roadmap – Update

Presenter: Annette Beitel
Materials: http://www.caltf.org/tf-meeting-materials

Annette Beitel asked each attendee to state what they think a success would be for the Cal TF; what is going to make us feel good collectively about we can accomplish through Cal TF and eTRM.

- Charles Ehrlich: Demonstrate what we have in mind in terms of the common custom tools we are developing for custom. Get one tool approved that can draw certain information tables from the eTRM, and use that as a template for other tools.
- Danielle Dragon: TSB (Total System Benefits). We do not have EE goals next year; we have TSB goals. That is a mindset change. We don't have a full understanding of what TSB is and includes. PG&E did put out a training, available to the public. Moving forward with TSB in mind as our goals, maybe eTRM can help with the mindset change (e.g., marketing and the customer).
  - Annette Beitel: What are the key differences between TRC and TSB?
  - Danielle Dragon: TRC is cost effectiveness (includes rebate, measure cost); TSB replaces or includes the EE savings and deals with GHG, refrigerant, and cost savings due to transmission and distribution systems and gas systems. The training goes over it and the guidance goes over these.
  - Steven Long: Does TSB take cost-effectiveness out of the equation?
  - Danielle Dragon: It adds more, does not take cost-effectiveness out of the equation.
  - Anders Danryd: The portfolio will still need to be cost effective.
  - Roger Baker: Is that just a numerator to the TRC?
    - Steven Long: Yes, it is.
    - *Slight correction:*
      - TotalSystemBenefit = (ElecBen + GasBen + NumUnits * (NTGRkWh + MarketEffectsBenefits) * RefrigBens) - (ElecSupplyCost + GasSupplyCost + NumUnits * (NTGRkWh + MarketEffectsCosts) * UnitRefrigCosts)
      - TRCRatio = (ElecBen + GasBen + OtherBen) / TRCCost,
    -

  - Annette Beitel: Is this just expanding the types of benefits that are quantified financially?
    - Anders Danryd: And applying a dollar value to that.
  - Annette Beitel: Is anything removed from the TSB compared to the TRC?
    - Steven Long, Armen Saiyan, and others: The denominator, the program costs.
    - Danielle Dragon: Energy savings is your benefit, but there might be more benefits so this would monetize those other benefits.
  - Annette Beitel: So it would be easier for things to pass the TSB compared to the TRC?
    - Danielle Dragon: Unless you have a measure that reduces your TSB by increasing refrigerant or other fuel.
- Randy Kwok: Is TSB modeled after ESA? ESA has two parts, TRC and others.
  - Danielle Dragon: TSB comes from the CET and ACC.
  - Gary Fernstrom: The TSB sounds a lot like the time-dependent valuation that the CEC started using; it includes more system effects… Its very important that we get clarity on what the goals are. To have a TSB approach that everyone agrees is probably the singular most important thing moving forward.
- Gary Fernstrom: I am delighted with what the Cal TF has already done, think about with what we started in the past. (Agree with Danielle.)
- Steven Long: Reduce deemed development time by 50%; reduce reporting efforts by 50%; reduce level of effort for custom projects by 90%... and to the idea of TSB, [Cal TF] being an independent-from-politics source on what is the best approach from a given technology (e.g., electrification, gas, demand reduction).
- Arash Kialashaki: On the meter-based side of things, those require energy savings estimates in the beginning, so I am hoping with the data from the eTRM and measure packages that are being develop, that we are able to pull the data required for meter based projects straight out of the eTRM without having to do any custom calculations for these projects. That would reduce the review time of meter-based projects significantly.
- Lake Casco (phone): A success would be to have every PA using measures in the eTRM (POUs, RENs) and all be able to connect and use the data in the eTRM, and have all actively participate to create measures for their programs.
- Armen Saiyan: Have the eTRM be the resource for all things demand side; basically a resource that I can use to identify grid impacts for everything that is behind the meter. That is one thing our resource planners have no idea about, and typically they do not trust what we tell them. Having that level of rigor and being able to provide resources to show that it is going through a vetted process.
- Anders Danryd: As we transition to TSB, on the gas side of things, the TSB is weighted more towards CO2 impacts than energy impacts, so being able to capture non-EE benefits through the CO2 reduction through hydrogen or methane leakage would be interesting.
  - Gary Fernstrom: The TSB concept is a great concept; where it gets difficult is when you try to come to agreement about how much value to attribute to each of the benefits. That’s where we would all benefit from greater consensus and commonality of understanding goals.

  - Anders Danryd: I think that is all established through the avoided costs, which is a different proceeding than EE, so I think people are welcome to participate in that. That is where all the CO2 and gas benefits are established.
  - Gary Fernstrom: Those numbers are developed there, but various policy makers would attribute different weight to those numbers. You have T&D effects, system losses, and other things; even though there are numbers to support each factor, there is little agreement about on how much weight each of these factors should get in the final analysis. To give an example, NRDC would say it does not care about transmission and distribution; they only care about energy savings. There are a lot of perspectives by different key stakeholders.
  - Anders Danryd: I do not disagree with that, just stating that these are set through the proceeding. That is where those values are established and approved.
  - Gary Fernstrom: The values are developed and approved there, but how do they stand relative to other factors that need to be considered. So we know the cost of greenhouse gases but should that be the most important thing or the only thing that we consider? Someone earlier was saying that TSB is shifting towards reducing environmental impacts. What that is saying is that someone is thinking that this should be a more important factor than other factors that are included, so it’s this balance that I want to get agreement on.
- Henry Liu: Two things: 1) Right now we are using eTRM for reporting; it would be great for the eTRM to get us everything we need. One gap is water savings, since we are using it for reporting. It would be great to have just one system that minimized my staff time. 2) Continuing to outreach and help our implementers understand the use of the eTRM. We still spend a lot of time helping with forecasting; if implementers knew the eTRM well enough, they could do it anytime they want. Enable them to understand what is happening further in the future and have more control of their business.
- James Gibson: I hope this doesn’t take five years… It would be nice to have statewide custom measures in the eTRM that have defined measure descriptions and that help make custom projects a lot faster.
- King Lee: I second all sentiments around TSB. I’d like to see Cal TF create some roadmap on bundling of measures, optimize one of the other topics listed (e.g., equity) and seeing a roadmap for the combination of things that will help achieve the successes we are hoping to get.
- Myrna Dayan: I second the comments regarding TSB. At the same time how can we simply the processes.
  - Annette: Simplify what process?
  - Myrna: All the processes! Just navigating all these websites: CEDARS, CPUC, eTRM… I’m looking for information, so where do I go to find what I need. It’s not simple. The utilities have their guidelines as well.
- Mike Casey: 1) Reduction in level of effort to get projects through, both on the deemed side and custom. Going along with that, and this is consistent with the 3C workplan, a good result would be if there was a way for the utilities to be more consistent with each other in how they interpret policy. When we have worked with different utilities on similar projects, we have had had to do different things to get them through.
- Sepideh Shahinfard: 1) From what I see on a day-to-day basis, we need more consistency between deemed and custom. We have a lot of statewide measures, but

there are still some inconsistencies with the custom approach and the deemed approach, but they are all supposed to follow the same framework. Making those things more consistent would be helpful. 2) It would also be helpful to know how programs operate; there are a lot of overlap between the programs; it is tough to identify what delivery channels they cover, what are the territories, what are the offerings, and how do they operate. It would be helpful to clarify that in the eTRM.

- Eric Noller: How can we restructure things to get more progress in custom. Currently there are a lot of struggles with custom; seeing how we can reformulate things or develop a solution with regulators. If we cannot agree on a solution, then maybe focusing on other pathways; the current situation is not helpful for anyone.
- Danny Ng: Sometimes we have disagreements between what the (CPUC) Staff recommends and how we view something, and we can't come to agreement. It would be nice to have a third-party neutral arbitrator to listen to both sides, weigh in, and decide.
- Adan Rosillo: I'd like to see the Cal TF be the truth source of information, a group that validates the true information. Cal TF should be an open forum. Also would like to see in the TSB value – we need to consider how people live (e.g., home offices). E.g., are we affecting insulation, are we bringing induction appliances into our homes and how these would affect our health. As we transition to low GWP refrigerants, will these impact the health of people. We need to look at the future of all the measures that we are looking at. Cal TF can put these issues on the table for discussion; look at the future and think ahead of everybody and help create good policy.
- Antonio Aliberti: We need to think more about the customers in everything we're doing. At the end of the day we go to the customers to help them. If there is the way to include the customers that would be great; we want to be able to help customers implement measures. We should have an open forum, and we also need to help make policy more based in reality; it is getting worse and worse. Make sure we focus on customers at the end of the day. Customers want to know savings and how much money it will cost them.
- George Beeler: I really like the slide on the industry trends; I hope that Cal TF can help implement a lot of the good technology that was out there. I hope Cal TF can help with "taking the sand out of the gears." There is a lot of good stuff with decarbonization, and we just need to help get it going a little faster.
- Soe Hla: Simplify processes on the development side, and easier adoption on the customer side. Do not make complicated the things that might not affect savings a lot (e.g., interactive effects is a good example to not over-complicate). Also, more on the reporting side, I wish we had a way to share which programs and help identify cases of double dipping; there is no way to track those customers.
- Randy Kwok: I second what Soe mentioned; I would like to see taking a few more custom measures and making these deemed to make it easier to get projects approved.
- Tom Eckhart: I am impressed with how much has been accomplished; I do not have any request to make.
- Roger Baker: 1) Seeing eTRM v4.1 with an AI component built in and to see the whole custom measure process being simplified. It is really eye-opening to see how much work it takes to get one single custom measure done. 2) Standardizing the process from full custom to semi-deemed to fully deemed.

- Abhijeet Pande (phone): 1) Clarity. If Cal TF can bring clarity to things like TSB, semi-deemed, custom. 2) Trust. A lot has been achieved in last 2-3 years with eTRM as one source of information, but there are still a lot of differences in interpretations. I hope Cal TF can be the definitive interpretation that anyone can come to. 3) Have Cal TF be more forward looking and weigh on policy decisions.
- Greg Barker (phone): I'd like us to use the online portal to make creating new measure packages easier so we can capture savings from measures that often today get dismissed as "too small to create a measure package" like envelope, whole building, and plug loads.

VII. Closing and Next Steps

Presenter: Annette Beitel
Materials: http://www.caltf.org/tf-meeting-materials