



# **Agenda & Notes**

## **California Technical Forum (Cal TF)**

### **Meeting #40: Technical Forum (TF)**

**June 28, 2018**  
**9:30 am – 2:35 pm**  
Pacific Energy Center  
851 Howard Street, San Francisco, CA

<b>Time</b>	<b>Agenda Item</b>	<b>Discussion Leader(s)</b>
9:30 – 9:45	<b>Opening</b>	Jennifer Barnes, Cal TF Staff
9:45 – 10:30	<b>HVAC Update</b>	Ayad Al-Shaikh, Cal TF Staff
10:30 – 11:15	<b>Building Envelope Measures</b> <ul style="list-style-type: none"><li>• Review new information</li><li>• Review notable issues</li></ul> <b>ACT:</b> Cal TF Affirmation of Consolidated Measures	Roger Baker, Cal TF Staff
11:15 – 11:30	<b>Break</b>	
11:30 – 12:30	<b>Process Measures</b> <ul style="list-style-type: none"><li>• Review new information</li><li>• Review notable issues</li></ul> <b>ACT:</b> Cal TF Affirmation of Consolidated Measures	Ayad Al-Shaikh
12:30 – 1:00	<b>Lunch</b>	
1:00 – 2:00	<b>Pools Measures</b> <ul style="list-style-type: none"><li>• Review new information</li><li>• Review notable issues</li></ul> <b>ACT:</b> Cal TF Affirmation of Consolidated Measures	Roger Baker
2:00 – 2:30	<b>Follow up on certain measures</b> <ul style="list-style-type: none"><li>• Lighting, water heating, etc</li></ul> <b>ACT:</b> Cal TF Affirmation of Consolidated Measures	Ayad Al-Shaikh Tim Melloch, Cal TF Staff
2:30 – 2:35	<b>Close</b> Recap agreements & action items	Jennifer Barnes

#### **Meeting Materials**

- Presentation: HVAC Update
- Presentation: Building Envelope Measures



- Building Envelope Measures Affirmation Slide
- Presentation: Process Measures
  - Process Measures Affirmation Slide
- Presentation: Pools Measures
  - Pools Measures Affirmation Slide
- Presentation: Follow Up Measures
  - Follow Up Measures Affirmation Slide



## I. Attendees

	<i>In-Person</i>	<i>Via Telephone</i>
<i>Cal TF Staff</i>	Jennifer Barnes Ayad Al-Shaikh Roger Baker	Annette Beitel Tim Melloch
<i>Cal TF Members</i>	Doug Mahone retired HMG/TRC Pierre Landry Landry & Associates Steven Long Lockheed Martin Larry Kotewa Elevate Energy Mehdi Shafaghi LADWP Chan Paek So Cal Gas Bing Tso SBW Spencer Lipp Lockheed Martin Sepi Shahindard Cadmus Gary Fernstrom retired PG&E George Beeler AIM Ryan Hoest EcoVox Greg Barker Energy Solutions Ed Reynoso SDG&E Lisa Gartland Proctor Engineering Mary Matteson Bryan Ron Ishii AESC	Cathy Chappell TRC Martin Vu RMS Energy Consulting Chris Rogers CleaRESULT Tom Eckhart UCONS Mike Casey Onsite Energy
<i>Non-TF Attendees</i>	C.D. Nayak DNV GL Jay Madden SCE Shanna Dee, SDG&E Kelvin Valenzuela SDG&E Henry Lui, PG&E Jia Huang PG&E	Keith Valenzuela SDG&E Bob Ramirez DNV GL Christian Weber PG&E Owen Howlett SMUD Randall Cole Tai Voong PG&E



## **I. Key Decisions and Action Items**

### **Building Envelope Measures**

#### **8.01 Window Tint Film:**

- ACTION: Rename Window Tint Film to remove the reference to “window film” which has had a bad connotation historically.

#### **8.02 Tinted Window Retrofit:**

- ACTION: Review the adopted 2019 T24 regs to see if it affects this measure.

#### **11.03 Whole House Upgrade**

- STAGE 2: Add return duct modifications as a stage 2 issue.
- ACTION: Repurpose July 12 Pools subcommittee meeting to address Home Energy Upgrade and Reduced Building Leakage issues raised here.
  - Invite George Beeler and Jay Madden to this meeting.

#### **Building Envelope Measure Affirmation:**

- The following building envelope measures were affirmed:
  - 8.01, Reflective Window Film
  - 8.02, Tint Window Retrofit

### **Process Measures**

The following process measures were affirmed:

- 10.02, Air Compressor VFD Retrofit
- 10.05, Glycol Pump Motor VFD
- 10.08, Steam Trap, Commercial
- 10.10, Circulating Block Heater

### **Pools Measures**

The following pools measures were affirmed:

- 9.05, VSD for Pool and Spa Pump
- 9.09, Pool and Spa Heater, Commercial

### **Miscellaneous Measures**

The following miscellaneous measures were affirmed:

- 4.48, LED for Walk-in Freezers and Coolers
- 6.19, DHW Loop Temp Control



## **II. Meeting Notes**

### **HVAC Update**

- Presenter: Ayad Al-Shaikh

Doug Mahone: Has someone tracked changes in eQUEST models? Archeological dig analogy.

Pierre Landry: What method will be used to assess changes? Multiple regression, or just eyeball?

Ayad Al-Shaikh: Sensitivity analysis will be important part of comparative analysis of models.

C.D. Nayak: DNV GL has been doing this for certain measures (air-cooled chillers, boilers, etc). With DEER models, assess sensitivity of parameters as well as comparing base vs measure to see if they make sense. Also run multi-variable regression against this variety of parameters (1000 or more eQUEST runs)

Ed Reynoso: Question about LED

Ayad Al-Shaikh: There is an update that's coming to the prototype models this summer related to the lighting changes. Could be schedule and LPD related.

Doug Mahone: What does MAS Control stand for?

Roger Baker: Measure analysis software

### **Building Envelope Measures**

- Presenter: Roger Baker

#### **8.01 Window Tint Film**

Ed Reynoso: Think going with a weighted average approach is good. Don't think their systems have the ability to track/report exposure.

Roger Baker: Don't think we have weighed average. Have a simple average for West, South and East.

C.D. Nayak: Did an evaluation that was building specific. Used the prototype model. The savings they calculated was for each direction.

Roger Baker: The savings between West, South or East are within about 10%.

Lisa Gartland: Is it really called "Window Tint Film"?



Roger Baker: Yes, if you have a better name, let us know.

Steven Long: IR film?

C.D. Nayak: Considering single pane versus double pane?

Roger Baker: Not sure if there are already weighted averages of those.

Bing Tso: Has there been any consideration to changes to exterior shading? Differences in terms of businesses being closer together or more vegetation over time?

Roger Baker: Not sure if there have been studies on these things. The measure life isn't that long – maybe 10 years.

### 8.02 Tinted Window Retrofit

Pierre Landry: What is window assembly?

Roger Baker: This is a new window frame that fits in existing frame. Keeps enough of the frame that it doesn't trigger T24.

Gary Fernstrom: What is the factor that differentiates whether you need to comply or not?

Roger Baker: If it fits within the existing window frame. If you keep the outer frame it doesn't trigger T24. If you frame it out, then it triggers T24.

Doug Mahone: You are talking spectrally selective?

Roger Baker: The intent is a retrofit that give you the same properties as a code replacement. They are trying to close the loop within the code so this measure would go away.

Owen Howlett: How will a film trigger T24?

Roger Baker: We've moved to the window replacement measure.

Cathy Chappell: Second bullet says "not a window replacement".

Roger Baker: It's an assembly that goes into the frame. Not an entire window.

Cathy Chappell: Says there were a limited number of claims. What about the POUs?

Roger Baker: Don't have the POU data. They are interested in keeping this measure alive. IOUs see it as a hard to reach measure. But here are customers outside of LI that could benefit. Desire to keep it alive and see what T24 does.



Cathy Chappell: T24 2019 has been adopted so you can look at what it says about this measure.

Roger Baker: We'll take a look.

George Beeler: Have an allergy to "Tinted Window"; can we say "EE retrofit"? The window tint was a bad technology.

### 11.03 Whole House Upgrade

Roger Baker: There are a lot of permutations. Still working through this. Won't have it by end of Q2. Example of where a TRM doesn't work for this approach.

Steven Long: In the discussion heard the utilities may be dropping?

Roger Baker: It's not clearly cost effective and not a lot of uptake. But it's good for PR and social reasons.

Steven Long: When we were talking about modeling, the residential portion wasn't ready. Is that a possibility? Understand that these permutations could be handled that way.

Ayad Al-Shaikh: That's definitely a long-term perspective. The non-residential modeling decisions will come first.

Gary Fernstrom: That's Energy Upgrade CA. I'll share my experience. I did it a few years ago. Had simple measures but the principal upgrade was sealing the attic and getting a new furnace. Didn't qualify for the furnace program by itself but did qualify through Energy Upgrade CA. Got a \$5k rebate for doing that. Also saved about 300 therms a year for gas. The total cost was \$14K and rebate \$5K.

Lisa Gartland: This is the kind of program that helps make houses more comfortable and we don't capture that. Reduces drafts. Suggest you adopt point system and bin the points.

George Beeler: State is imposing bigger goals for reducing GHG. We're not going to meet them with the current technology. Need to be careful not to remove measures like these that may come back in a few years. We might not be there yet. Understand how complicated this is and want to simplify but don't want to give up the good goals to make it easier for us now.

Gary Fernstrom: We're going to have to accept that they are going to be less cost effective. CPUC is going to have to give us flexibility.



Henry Liu: PG&E retired deemed whole house as it wasn't cost effective. Many permutations – question is whether you want to load all the permutations in eTRM. Also, has been evaluated but the realization rate is about 10%. There are other things we need to figure out. So, it's not cost effective and received a bad evaluation.

Lisa Gartland: Don't see return duct modifications. That's usually a good measure. [Flag as a stage 2 issue]

Roger Baker: That may be good to add down the line.

George Beeler: On projects where I've compare costs – air infiltration was cheaper and provided more energy savings.

Roger Baker: Also looking at 8.04 Res Leakage Reduction. This is part of mix for WW upgrade.

George Beeler: Reducing leakage lasts the life of the building.

Roger Baker: Caulking does wear out.

George Beeler: Attic and basement sealing really doesn't wear out.

Pierre Landry: What I'm hearing is that this doesn't fit our mission very well. We're dealing with widgets. There are other performance issues like hitting the low hanging fruit and getting some bigger stuff. For our mission, it's not a good fit. Trying to address it in program design – there's more politics than science. Send it back to program designers and tell them to figure out another way to deliver it.

Roger Baker: Is it important that we have all of these interactions? Are there mechanisms that we can use to separate these out, maybe sacrifice accuracy, but a way to put it in the market with a la carte options.

Pierre Landry: But when you get a low RR for some customers you get a black eye. You can lower hassle factor and get in door, but that's a different program.

Roger Baker: California doesn't do a good job capturing non-energy benefits.

Doug Mahone: Thought Energy Upgrade CA had a calculated method.

Gary Fernstrom: They did that for mine and I think it was accurate.

Doug Mahone: Then why are we talking about it here? If they have a simulation method, why are we developing deemed measures?



Roger Baker: We're trying to put more on third party implementers. Does it make sense to go to an a la carte approach?

Pierre Landry: You'll have some estimations there. Is this part of our mission?

Roger Baker: It was put on list last year.

Gary Fernstrom: Part of program was an energy audit. They came in with a blower door, it was very thorough. They measured duct leakage and everything before and after. Very accurate assessment of savings.

Ed Reynoso: Understand that was a mandate before but it's since been lifted.

Henry Liu: My understanding. Took it out of deemed but still have it in custom.

Ed Reynoso: SDG&E too. Don't understand low realization rate.

Henry Liu: Have been 2 evaluations. Both had low realization rates. During last workpaper update tried to look at model to try to provide better estimate. Didn't get very far.

Ed Reynoso: Are you asking for a vote or feedback?

Roger Baker: Looking for feedback this month. We need to decide as a group whether we force it into eTRM or let it go. Not looking for affirmation today.

Gary Fernstrom: Funding: what the CPUC required and the city chipped in some money.

George Beeler: You want to take out the leakage reduction?

Roger Baker: Identified as a stand-alone measure. It is a measure in DEER but it's for low income only. Basically, extracting the approach from SCE regression models. Fixed everything else at an existing baseline level. As if they only did that.

George Beeler: Don't think it's appropriate to take it out.

Gary Fernstrom: Seems that we could take 4-5 whole house measures and make them standalone.

Pierre Landry: We're not doing program design here. Doing widget approach here doesn't make sense. If we're doing this program for EE and equity, we're doing it for political reasons. And non-energy benefits that we need to quantify.

Spencer Lipp: Have we gone through historical claims?



Roger Baker: Haven't done the deep dive yet to see which measures the savings come from. Maybe there's a simplified approach that only looks at top levels.

Henry Liu: That's how we did the workpaper in the past. We have measure codes for all combinations. That's how we came up with that combination.

Roger Baker: Are we ready to affirm these measures? We'll work on nomenclature for 8.02 Tint Window Retrofit.

Ed Reynoso: For 8.01 (Reflective Window Film), we'll have to default to our legacy work paper.

Roger Baker: That's on our list.

Pierre Landry: Think that 8.04 (Reduced Building Leakage, Residential) is not appropriate for us to support. It's part of the whole package. I'd like to see whether it's ever been offered as a standalone measure or always as part of Energy Upgrade CA.

Doug Mahone: Think it's a reasonable stand-alone measure. Done research on air exchange rates 25 years ago. But it also can become a get-your-foot-in-the-door measure where you can add other things.

Pierre Landry: But it's a design issue. Send it back to the designers. You need to be willing to accept more error in the realization rate. Would think that the planners would want to use it as a tool to get in the door and do more measures, but not a stand-alone measure.

Steven Long: Do we have confidence that savings in data set are reasonable. From a modeling standpoint, this has one of the biggest impacts. I'm more on the uncertainty side - we may not be able to quantify it.

George Beeler: When I've evaluated it, it makes a huge difference.

Steven Long: I agree.

Pierre Landry: There's 10% implementation rate?

Henry Liu: Not sure how they did it. It's from evaluation. Maybe a small sample size. Haven't had a chance to look at data. It's a realization rate, not implementation rate.

ACT: Repurpose July 12 Pools subcommittee meeting to address Home Energy Upgrade and Reduced Building Leakage issues raised here. Make George Beeler aware of this meeting and remind Jay Madden.

## **BUILDING ENVELOPE MEASURE AFFIRMATION**



Are there any objections from the Cal TF to affirming the subcommittee recommendations regarding the Stage 1 issues for measures 8.01, Reflective Window Film and 8.02, Tint Window Retrofit?

- No objections from TF members on the phone or in the room.

### **Process Measure**

- Presenter: Ayad Al-Shaikh

#### **10.02 Air Compressor VFD**

Pierre Landry: Why is small office a building type? How do they use a compressor?

Ayad Al-Shaikh: We're going to take commercial away. These are the ones that are left. This is what was there previously.

Ryan Hoest: Have seen mixed use commercial/labs. They will have that process load.

Ayad Al-Shaikh: There weren't claims so maybe target market hasn't been found.

Randall Cole: If this is a process, the building type definition is that you have a product. Small office its difficult to have that building type. Should be looking at light industrial. Also looking at where T24 fits. Workpaper was written at 25 HP. Did some evaluations and T24 is 25 HP and above. Need to take a look at that and how workpaper was written.

Ayad Al-Shaikh: Size was set specifically based on T24. Do want to have a measure extension to consider to code for above 25 HP.

Pierre Landry: Would it still be an ROB NC?

Spencer Lipp: It doesn't work that way. It's different workings of the compressor. You don't really add a VFD to a load/unload compressor without making modifications and it's cheaper to just buy a new compressor.

Ed Reynoso: Manufacturers will say it's too costly and it won't work right.

Gary Fernstrom: It's not easy retrofitting an on/off equipment with variable pressure controls.

Lisa Gartland: There's a whole class of office buildings converting pneumatics with direct digital controls.

Jay Madden: This isn't that measure.



Lisa Gartland: I know but I don't want to lose it.

Ayad Al-Shaikh: This measure is to keep the compressor.

Bing Tso: With this measure, you'd think that with more hours you'd get more load.

Ayad Al-Shaikh: When we do scaling, we're assuming same load/unload patterns for prototype building. It's probably going to be different between hospital or process building. There's a lot of variation. This is a best guess to do scaling from that initial load. It's a linear scaling.

Steven Long: DEER doesn't have values for this.

Ayad Al-Shaikh: It's coming from interactive table.

Steven Long: Are lighting interactive effects appropriate for this measure?

Ayad Al-Shaikh: Probably not.

Ayad Al-Shaikh: Sounds like folks have concerns about small office.

Pierre Landry: Assuming that someone put in a claim for it.

Greg Barker: Could have been classified by NAICS.

#### 10.05 Winery Glycol Pump VFD

Ron Ishi: When you talk about variable geometry what do you mean?

Ayad Al-Shaikh: Variable geometry describes the chilled liquid flow. Glycol is used to cool wine tanks and refrigerated spaces. As individual temperature setpoints are/are not meet, valves open and close to change the geometry (i.e. flow path) of the cooling loop. This is as opposed to being a fixed geometry that does not change.

#### 10.08 Steam Traps

Jay Madden: What do they mean by line versus load?

Ayad Al-Shaikh: There are some steam traps on the main branch and some on a sub branch. Some are blocked off for some part of the year or operation. If they are valved off they would not have losses all year.

Chan Paek: The difference between the line and the load is that the line would maintain the system pressure. If the trap is on the load side, the pressure could drop when it is located downstream of control valves.



Chan Paek: Regarding the application type, ROB. Customer is replacing the steam trap because of burn out. Usually the incentive comes into play to help the customer select a more efficient choice. How is that justified with a steam trap? There aren't efficiency levels with steam trap.

Ayad Al-Shaikh: Pump overhaul is another case. Good question. Don't have a good answer.

Henry Liu: We came to the same conclusion. We addressed it by using full cost of steam trap and labor. Either way, you have the same argument. How would you deal with second baseline?

Chan Paek: Thought we had ER in mind when we created the workpaper. It's basically going to the customer and help them replace broken steam trap earlier than usual.

Gary Fernstrom: Place where the market reality doesn't match our terminology/construct. Customer doesn't bother to replace a poorly performing trap that wouldn't otherwise be addressed. It's ROB but customer wouldn't have replaced it otherwise. Is it ER? It's kind of in between.

Ayad Al-Shaikh: Need to decide which to choose. As we go to ER we'll use full measure cost.

Spencer Lipp: When PG&E used this measure, they said you have to separate the types of traps. Venturi that's more efficient than inverted bucket. The failed traps they called REA. Doesn't say source or why. The ROB and ER were for the venturi type traps. They give savings when they are actually operating.

Ayad Al-Shaikh: What did they use for just repairing?

Spencer Lipp: It was bringing it back to the same kind – REA.

Ayad Al-Shaikh: Maybe this is for getting it back to the original standard. This seems like it should be ER or ROB.

Spencer Lipp: Probably with that is that you have standard practice to deal with. If standard practice is do nothing, then that fits, but if standard practice is that they are going to replace in kind, that doesn't work.

Ayad Al-Shaikh: Unless it's ER.

Spencer Lipp: The system still operations so maybe ER could work.

Spencer Lipp: You bring up EUL and RUL for ER. It doesn't fit in the box.



Chan Paek: Disposition: The rebate should be given to customers only once.

Spencer Lipp: That was last year and it applied up to parent company.

Ayad Al-Shaikh: Directed toward industrial steam traps then made broader. Industrial could no longer go deemed. If they did get an incentive, you could only give it once.

Spencer Lipp: That's important, because you have parent companies that operate across the state.

Pierre Landry: Assumes same decision maker across the state.

Spencer Lipp: Don't know if that point is important to eTRM but good for everyone to know.

#### 10.10 Circulating Block Heaters

Jay Madden: Baseline generator had electric resistance to keep engine block at certain temperature so it fires up right away. This heater runs 8760. Add a circulation pump to oil/fluid. Circulate with a temperature sensor so when the block is at temperature they aren't running heater. Went back and forth – there are different climate zones there are different hours of operation based on temperature.

Doug Mahone: Is it mostly under cold conditions or 65 degree?

Jay Madden: Don't remember the break point. It's in the workpaper.

Jay Madden: On the delivery type, there's a sore point. You are going to every hospital and data center, but if you go to the distributors etc., you'd cover the whole market, rather than going to every down stream customer.

#### **PROCESS MEASURES AFFIRMATION**

Are there any objections from the Cal TF to affirming the subcommittee recommendations regarding the Stage 1 issues for measures 10.02, Air Compressor VFD Retrofit, 10.05, Glycol Pump Motor VFD, 10.08, Steam Trap, Commercial, 10.10 Circulating Block Heater?

- No objections from TF members on the phone or in the room.

#### 10.01 Industrial Blower Replacing Air Compressor

Ayad Al-Shaikh: Issue is negative incremental cost. There's a section in R-4818 that talks about the measures. Does anyone know of a source for direction of negative IMC?



Doug Mahone: It's not forbidden but the cost effectiveness calculator blows up.

Chan Paek: In preponderance of evidence document can be used to determine if it qualifies as ER or not.

Pierre Landry: There's different cost effectiveness analysis. There are non-energy benefits that aren't monetized. It's just a factor of does the equation work out.

Ron Ishi: Isn't this an indicator that this is a free rider?

Pierre Landry: We know people don't install things that are cost effective.

Spencer Lipp: The problem is that the base case of a new air compressor is not the option that the customer is going to pursue. They are not going to do anything. There are cases where they are at full capacity and they contemplate adding a new compressor.

Pierre Landry: This is a policy issue.

Greg Barker: The formula I've seen is an EAR formula that had full cost and IMC. If you algebraically work it out it becomes a share of full measure cost and the negative IMC. Depending on RUL you could come up with positive or negative. Assumes you are going to replace at the end of the RUL.

Roger Baker: You are going to replace a blower now or 5 years but you may never replace.

Steven Long: Many cases of accelerated replacement?

Greg Barker: Some in lighting. They are looking to this formula for deemed.

Henry Liu: Only for first baseline. There's no savings in the second baseline.

Steven Long: Does it align with the avoided cost?

Roger Baker: Only concern is we're already talking about cost to customer so it should be based on customer's cost of capital.

Steven Long: But these all plug into TRC that is utility driven.

Steven Long: The reason it's in there is to do the time value. If you use an average value it's going to be high for some utilities and low for others.

### **Pools Measures**

- Presenter: Roger Baker



Looking to affirm 9.05 and 9.09

9.05 VSD for Pool and Spa Pump

Gary Fernstrom: There is no CEC code associated with commercial pools of any kind.

Roger Baker: If you go through text, it's clear that its for single family homes. You couldn't comply with turnover rates.

Gary Fernstrom: That's why codes don't apply to commercial.

Jay Madden: EAR team brought it up when they reviewed the workpaper.

Roger Baker: We need to fix it. It's clear that the code doesn't apply to multifamily.

Kelvin Valenzuela: I'm pushing it because it's not going not be cost effective if it's two speed.

Jay Madden: Has permit cost been included in any other measures?

Henry Liu: We shouldn't do it because there are other measures where this would apply.

Gary Fernstrom: You should get a permit to replace your water heater too.

Jay Madden: Do they all have the same hours of operation?

Roger Baker: It's based on turn over. You need to pump more hours to turn over a larger tool.

Jay Madden: When you get closer to the coast you get people who heat with solar and don't go in in the winter when it's not hot. You crank back the hours of operation because no one is in it.

Gary Fernstrom: There were a lot of things about the Palm Desert program that are not representative of the rest of the state. Not sure it matters. The pump product used in that is homogenous. It was done with a single manufacturer. Pools are unique to that area along with their operating hours. There are a lot of reasons why it's not representative.

Gary Fernstrom: There are more savings to be had if the program were particularly valued.

9.09 Commercial Pool and Spa Heater

Tai Voong: In the last meeting we were talking about using condensing for commercial.

Roger Baker: Can't easily get data for condensing. It contains amalgam of condensing and non-condensing. Find them separated or get a scaling factor.



Pierre Landry: Do you know who wrote RSPEC? You could probably do it in a spreadsheet. If it was DOE there will be a report somewhere that provides algorithms.

Ayad Al-Shaikh: If we use this tool we can use it across measures so they will be congruent.

Roger Baker: And the tool has already been built.

Gary Fernstrom: At PG&E we used that tool to re-evaluate covers. It is extremely sensitive to wind. The tool was fine but the inputs were uncertain.

Pierre Landry: Also a function of if there's a fence around the pool. It might be chain link fence.

Chan Paek: For clarification, this workpaper is going to break the pool heater into two tiers?

Roger Baker: That's my preference. There's some argument that noncondensing heaters don't provide savings. But in the interest of transparency we want to break out 87.09% into condensing and non-condensing. But the PMs need to make that decision. 87.09% are in the workpaper but these are based on averages.

Henry Liu: Some of these issues seem challenging. There's obsolete software, there's assumptions, SCG is coming up with a new workpaper. Maybe we don't submit but wait for new SCG workpaper.

Ayad Al-Shaikh: This is a general question. We got direction early in the process not to change everything all at once. The idea of harmonizing first, but still extending to other climate zones. It's very valuable to break into two steps.

Henry Liu: Similar to DEER updates. Don't submit unless they have been updated. If we submit, there's some obligation to look at it.

Ayad Al-Shaikh: We know they want statewide measures.

Roger Baker: We want to make sure that the consolidated measure the EAR team reviews matches the most recent IOU workpaper they've reviewed and approved.

Jay Madden: 9.01, commercial pool cover, may be a stage 3 issue. We get involved with water savings. Eventually we're going to be in that market.

Roger Baker: We have the capability of tracking water savings in eTRM.

Pierre Landry: Solar taking load off the grid. Are there issues with that?

Gary Fernstrom: Where is existing the 9.08, Robotic Pool Cleaner, workpaper? Who wrote it?



Roger Baker: Thought it was SDG&E.

### **POOLS MEASURES AFFIRMATION**

Are there any objections from the Cal TF to affirming the subcommittee recommendations regarding the Stage 1 issues for measures 9.05, VSD for Pool and Spa Pump, and 9.09, Pool and Spa Heater, Commercial?

- No objections from TF members on the phone or in the room.

### **Other Measures**

- Presenter: Ayad Al-Shaikh

For measures that didn't get affirmed previously. We've worked through some issues:

- 4.48 LED for Walk-in Freezers and Coolers
- 6.19 DHW Loop Temperature Control

### **MISCELLANEOUS MEASURE AFFIRMATION**

Are there any objections from the Cal TF to affirming the subcommittee recommendations regarding the Stage 1 issues for measures 4.48, LED for walk-in freezers and coolers and 6.19 DHW loop temp control?

- No objections from TF members on the phone or in the room.