

# Visioning Stage 2 Issues



**CALIFORNIA**  
TECHNICAL FORUM

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# Overview

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- Stage 2 List
  - Built initially through the measure consolidation process
  - Directed not to harmonize and change measures at the same time
- Status of List

Status (Feb 2019)	Count
Closed	71
Go/Open	87
Go/Underway	32
Hold	114
Wait	12
<b>Grand Total</b>	<b>316</b>



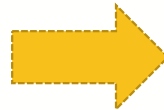
Status (Jan 2020)	Count
Closed	134
Go/Open	104
Go/Underway	24
Hold	59
<b>Grand Total</b>	<b>321</b>

# Overview

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<b>Grand Total</b>	<b>316</b>



Status (Jan 2020)	Broad Affect	Measure Specific	Total
Closed	12	122	<b>134</b>
Go/Open	18	86	<b>104</b>
Go/Underway	11	13	<b>24</b>
Hold	0	59	<b>59</b>
<b>Grand Total</b>			<b>321</b>

- Focus on “Go” issues to get your feedback

# Overview

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Status (Jan 2020)	Broad Affect	Measure Specific	Total
Closed	12	122	134
Go/Open	18	86	104
Go/Underway	11	13	24
Hold	0	59	59
Grand Total			321

- Measure Specific List

- Primarily associated with “Published” measure in the eTRM
- A few extra measures that may be published are still on the list
- Issues associated with Sunset measures were reclassified to the “Hold” category

- Goal of this group will be:

- Move from “Go/Open” to either “Hold” or “Go/Underway”
  - ✦ Add an owner
- We will try to have the IOU-workpaper leads participate in this group so that we can have a richer discussion of the issues

# Overview

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Status (Jan 2020)	Broad Affect	Measure Specific	Total
Closed	12	122	134
Go/Open	18	86	104
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Hold	0	59	59
Grand Total			321

- **Broad Affect List**

- Covers lots of area: Policy, Measures, Conventions, etc.
- Have fewer issues that need owners

- **Goals of this group will be:**

- Move from “Go/Open” to either “Hold” or “Go/Underway”
  - ✦ Add an owner
- Prioritize the issues for 2020 according to impact on portfolios
- Do we need to add/remove/modify items in the list?

- **We will review these items at a higher level now**

# Broad Affect Issues: Cost

6

- #4 – Cost updates/methodology
  - Discussed in the draft memo in Dec 2019
  - Goal
    - ✦ Review cost estimation methodologies
    - ✦ Develop a recommended framework for documenting cost
  - Next Step
    - ✦ Establish a subcommittee to discuss results for developing a TPP
- #19 – Lighting Cost Data
  - The market is changing so rapidly in lighting that cost data quickly becomes outdated.
  - Various methods have been used historically to gather lighting data.
  - Next Step: Blend this guidance into Item #4

Status (Jan 2020)	Count
Cost	2
Savings	4
Modeling	6
EUL	3
Existing Conditions	3
Data Consistency	3
Cost Effectiveness	1
GHG / Load Shape	3
M&V	2
Permutations	1
WEN	1
Grand Total	29

# Broad Affect Issues: Savings

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- Savings Memo drafted in Dec 2019

- Goals

- ✦ Review savings estimation methodologies
- ✦ Develop a recommended framework for developing deemed savings values

- Next Step

- ✦ Establish a subcommittee to discuss memo results to develop a TPP

- #17 – Appliance savings methodology

- Deemed savings are mixed between modelled and calculated approaches

- #120 – Remove PA dependences from Statewide measures

- Most measures have transitioned to be PA independent

- ✦ Water Heating, Lighting, and HVAC

- Next Step

- ✦ Address for the remaining appliance measures
- ✦ Typically restricted by how we need to break out RASS data

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Cost	2
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# Broad Affect Issues: Modeling

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- #23 – eTRM building prototypes
  - Prototypes parameter documentation is needed.
  - This information does not exist.
  - Next Step:
    - ✦ CalBEM is leading statewide modeling solutions.
    - ✦ Documenting the methodology that should be used to create a prototype was recommended by several as the first step.
- #24 – Identify best residential modeling tool
  - Prototype review and coordination started with HVAC Charette
  - Larger stakeholder group assembled at CalBEM to review these prototypes across all use cases (for res and com).
- #25 – Identify considerations when validating modeling tool
  - Comparison of methods has been a topic of discussion
  - Owner needs to be identified. CalBEM has been identified to drive this issue.

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# Broad Affect Issues: Modeling

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- #189 – Documentation for MASControl Measures
  - MASControl3 has documentation and training videos
  - Next Step
    - ✦ Create guidance on how modeled measures should be documented through input take from assembled subcommittee
    - ✦ Modeling parameters/keywords that are missing will be requested from EAR Team through the DEER update process
- #314 – Revisit measures where EM&V values have been applied rather than changing the underlying models
  - QM measures fall into this category (res and com).
  - Is this approach still correct?
- #318 – Vintage bundles currently excluding some vintages
  - DEER 2019 Updates changed the vintages to group into four categories of: old, ex, recent, new.
  - Because of the lack of customer knowledge by programs, only “ex” vintage used. Is this still the best approach?

# Broad Affect Issues: EUL (#3)

10

- 1<sup>st</sup> Baseline Life for an Add-On Equipment (AOE) measure is the minimum of:
    - EUL of the measure
    - RUL of the host (defined typically as 1/3 of the EUL of the host)
  - **Impact:**
    - Good measures have severely limited cost-effectiveness that will force retirement.
- 
- Basis for guidance comes from Accelerated Replacement discussions:
    - KEMA study (2008) that states this rule “provides a reasonable RUL estimate without the requiring any a priori knowledge about the age of the equipment being replaced.”
    - D.12-05-015 (p.347-348) – Recommended for use with program induced early retirement as a starting assumption, but offers the flexibility to utilize alternative RULs.
    - Policy Manual (2013) – Recommends limiting EUL to 1/3 of the EUL in DEER for program-induced early retirement.
    - Discussion based upon premise that equipment would be replaced soon (since focus was accelerated replacement).
  - Current Guidance applies to Add-On Equipment:
    - Early Retirement Using Preponderance of Evidence (7/16/14)
      - ✦ VFD on Pump example (section 2.2.5)
    - Noted again in Resolution E-4818
    - Anecdotal note that based upon premise that code may change in within the period of the RUL.

# Broad Affect Issues: EUL (#3)

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- Re-application of the rule works for many traditional Add-On Equipment measures when
  - Savings tied to the specific/exist host equipment AND buying decision not significantly impacted by RUL of existing equipment
  - Examples:
    - ✦ Economizer on an HVAC Package Unit
    - ✦ Insulation on a pipe or tank
- But guidance begins to break down when
  - Savings tied to the site or the larger system OR buying decision is impacted by RUL of existing equipment
  - Examples:
    - ✦ VFD on Well Pump
    - ✦ Demand Controlled Ventilation for Commercial Kitchen Hoods
  - Consider that these cases are mis-classified as Add-On Equipment and should be treated as a special case of Normal Replacement
    - ✦ Alternatively, the host-EUL's could be defined for the well. As an example, a whole-house fan uses a 15-yrs life presumably because the life of the home is long (45+ yrs).

# Broad Affect Issues: EUL (#95)

## EUL Host ID

- 1<sup>st</sup> Baseline Life for an Add-On Equipment (AOE) measure is the minimum of:
  - EUL of the measure
  - RUL of the host (defined typically as 1/3 of the EUL of the host)
- Impact:
  - In many cases, the Host ID does not exist in the standard list. This is most typically the case for non-EE components
- Examples include:
  - Faucet Aerators (host = faucet)
  - Floating Head Pressure Controls (host = refig system)
  - Exhaust Hood Demand Control Ventilation (host = hood)
  - VFD on Well Pumps (host = well)
- Should they be specific or general?
  - WtrHtr-Faucet
  - Host-15years

# Broad Affect Issues: EUL (#15) BRO Life (other than 3 yrs)

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From SCE/Pump Overhaul database	0<HP≤25	25<HP≤50	50<HP≤100	100<HP≤200	200<HP≤10000	All HP
<b>Number of Pumps</b>	1428	1696	2197	1592	938	7851
<b>Degradation Rate (%/yr)</b>	1.83	2.03	2.06	2.14	2.09	2.03

From SCE/IR database	0<HP≤25	25<HP≤50	50<HP≤100	100<HP≤200	200<HP≤10000	All HP
<b>Average baseline OPE from IR database</b>	34.37	42.32	47.89	56.19	58.95	47.52
<b>Average post OPE from IR database</b>	66.72	63.3	68.37	70.02	71.23	67.93
<b>Average degradation rate</b>	1.83	2.03	2.06	2.14	2.09	2.03
<b>Number of pumps used in computing baseline OPE</b>	30	21	23	32	19	125
<b>Number of pumps used in computing post OPE</b>	29	20	21	30	17	117
<b>RUL (delta OPE/deg rate)</b>	17.68	10.33	9.94	6.46	5.87	10.06

	CB	SB	SW	TB	TW	All
<b>RUL</b>	13.1	2.59	11.64	11.13	9.17	10.06

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CB	<i>Centrifugal Booster</i>
SW	<i>Submersible Well</i>
SB	<i>Submersible Booster</i>
TB	<i>Turbine Booster</i>
TW	<i>Turbine Well</i>

\* Results taken from SCE report by Lincus using large pump database

# Broad Affect Issues: Existing Conditions

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- #1 – Accelerated Replacement (AR) data requirements
  - List of AR measures is growing: Pool Pump VSD, 5 Flow Restrictor, LED Tubes, ECM Display Case, Gas Fireplace, and 2 Fuel Sub.
  - Identify if anything else is required?
- #21 and 317 – AR Lighting measures
  - Are there new existing conditions lighting opportunities?
  - IOUs concerned about TRC due to full measure cost and reduced life, even if savings can increase.

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# Broad Affect Issues: Data Consistency

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- #10 – Some references are outdated
  - Attempt to identify deemed measure needs proactively so that they can be considered as part of the EM&V planning process.
  - Future eTRM enhancement to create an aging report for references that are tied to measures.
- #320 – Updates to Shared Data tables
  - Recommendations to tables to improve the data consistency:
    - ✦ EUL – remove bldg type; instead calculate based upon EFLH in Interactive Effect tables.
    - ✦ GSIA – remove fields

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# Broad Affect Issues: Data Consistency

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- Multifamily (MFm) building type is in the Residential sector
  - MFm permutations must use Residential EUL & NTG
- Common area MFm equipment characterized by:
  - Commercial grade
  - Maintenance follow commercial schedule
  - Buying decisions are commercially driven
- Examples
  - \*Central Storage Water Heater, Multifamily
  - Boiler, Multifamily
  - Tankless Water Heater, Residential (has MFm offering)

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\* Most important since Res/Com values are different



# Broad Affect Issues: Cost Effectiveness

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- #321 – Concerns with cost effectiveness calculation; consider a “Future State” of:
  - Standardized across IOUs and POUs
  - Consistent with National TRC Approach
    - ✦ Incentives for free riders not treated as program costs
  - Hourly inputs
    - ✦ Load profiles and GHG emissions
    - ✦ GHG emissions – customizable to all utility specific values (LADWP)
  - All avoided cost elements valued
    - ✦ T&D can be included (or not)
  - Carbon reporting calculation consistent across state
    - ✦ GHG - for purposes of reporting pounds of carbon reduction
  - Include all “resources” in calculation
    - ✦ Treat water as “resource” in CA
  - Consider updated tool / features (see CalTF presentation from Dec 2019)

# Broad Affect Issues: GHG / Load Shape

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- #5 – Review load shapes/impact shapes

- DNVGL has scope to address load shape

- ✦ Long-term effort

- Currently using restricted set of statewide profiles

- ✦ Only 14 residential / 7 commercial 8,760-hourly profiles

- Consider:

- ✦ POU solution that uses CEC / ADM end-use profiles

- ✦ RTF load shapes

- ✦ DOE end-use profiles

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# Broad Affect Issues: GHG / Load Shape

19

- #8 – How should GHG impacts be factored into deemed measure assessment
  - GHG reduction is a core state policy objective
  - See GHG calculation methodology in Dec 2019 CalTF meeting
  - What are all of the uses/methodologies
- #311 – How should time value of electricity be factored into deemed measure assessment
  - Changing with electrification measures
  - Could have a large implication on cost-effectiveness

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# Broad Affect Issues: Measurement & Verification

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- #9 – Use of data requirement section to recommend embedded M&V
  - Draft EM&V memo created
  - Examples exist in jurisdictions
- #26 – How will impact evaluation results be used to update assumptions for specific measures
  - Draft EM&V memo created

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# Broad Affect Issues: Permutations

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- #22 – Collapsing permutations

- Goal: Reduce measure complexity without effecting accuracy of savings

- Questions:

- ✦ Permutations grow for multiple reasons:

- Don't typically impact savings/cost: Sector, delivery type, PA
- Do typically impact savings/cost: Climate zone, building type, measure application type, delivery type

- ✦ Input on rules for collapsing

- Savings within 10% or round values systematically:

- Should this rule change for High Impact Measures
- Should collapse focus use claims data as an input (or market population)
- Should the rule be tied to accuracy of the sensitive variables
- Should limits be tied to one parameter (ie, kWh) or all (ie, kWh, kW, therms, cost, ...)

- Review full permutation list to understand opportunities

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# Broad Affect Issues: Permutations

22

- #6 – Water / Energy Nexus
  - What is the best way to integrate water savings into deemed measures?
  - Additional fields may be required to run calculation
  - Calculator will be examined soon

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