

Technical Forum Meeting



NOVEMBER 16, 2023
REMOTE

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Icebreaker question: What are some key EE and/or GHG reduction tips for the Thanksgiving holiday?

① Start presenting to display the poll results on this slide.

Agenda

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Time (PST)	Agenda Item & Action	Discussion Leader(s)
10:00 – 10:15	Agenda Review and Quick Updates	Arlis Reynolds
10:15 – 11:15 (60 min)	EE Portfolio Claims Analysis ACT: TF and stakeholder input on barriers, challenges, potential solutions	Spencer Lipp
11:15 – 12:15 (60 min)	Hybrid Measure List <ul style="list-style-type: none">Working list of hybrid measure candidatesDraft hybrid measure pathway ACT: TF and stakeholder input on hybrid measures and pathway	Cal TF Staff
12:15 – 1:00	Lunch/Break	n/a
1:00 – 2:30 (90 min)	HVAC Fuel Substitution Measures <ul style="list-style-type: none">SDG&E Study on missing Fuel Sub MeasuresResidential Fuel Sub MeasuresCommercial Fuel Sub Measures ACT: Feedback on HVAC Fuel Sub Measures	Ayad Al-Shaikh and Bryan Boyce/Energy Solutions
2:30 – 3:30 (60 min)	Draft 2024 Business Plan and 5-Year Roadmap ACT: TF and Stakeholder input on draft Business Plan and Roadmap	Arlis Reynolds and Ayad Al-Shaikh

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

Cal TF Updates

- eTRM Release 2.7.0 (11/9/23)
 - New "Restricted Permutation" flag
 - Great new red-lining and difference features
 - Existing: eTRM Stats–Sunset Measures
- Measure Package Updates
 - [2024 Measure Package Update Report](#)
- December TF Meeting
 - Thursday, 12/14
 - 10am-4pm LACI Building, Los Angeles
 - 4:30-7pm EOY Celebration
 - [RSVP for December Meeting and EOY Celebration](#)

FYI

- [CPUC Memo](#) (10/25/23): POE Requirements for Accelerated Replacement of Deemed Measures

- Effective Jan 1, 2024:
 - New Requirements
 - ✦ Signed Customer Affidavit Statement
 - ✦ Evidence of Equipment Viability based on incentive (n/a for projects w/ incentive < \$7500)
 - ✦ New standard language will be added for each measure package
 - See the [Measure Characterization Template](#)
 - Questionnaire no longer required
 - AR Baseline not allowed for upstream, midstream
 - Cannot waive POE requirements due to customer security concerns

Portfolio Claims Data Analysis



SPENCER LIPP

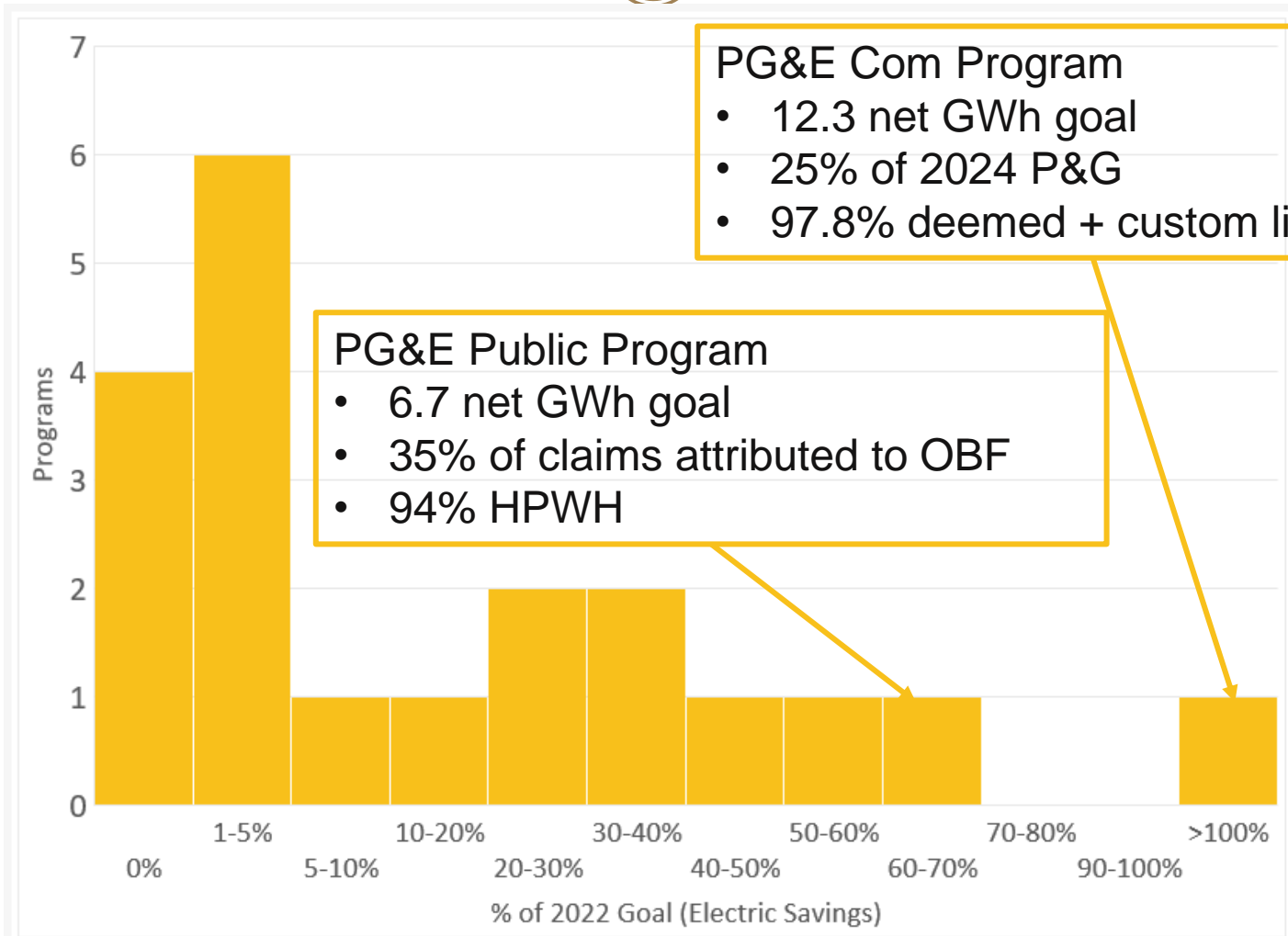
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Third Party Claims Analysis

- Reviewed 2022 CEDARS data for **20 electric and 24 gas 3P Programs**
- Selected programs with comprehensive design
- Analyzed metrics to see trends
 - Goals
 - Claims
 - Platform
 - Custom end use
 - Deemed measure
- TF Discussion:
 - What do these trends mean?
 - Any concern with these trends?

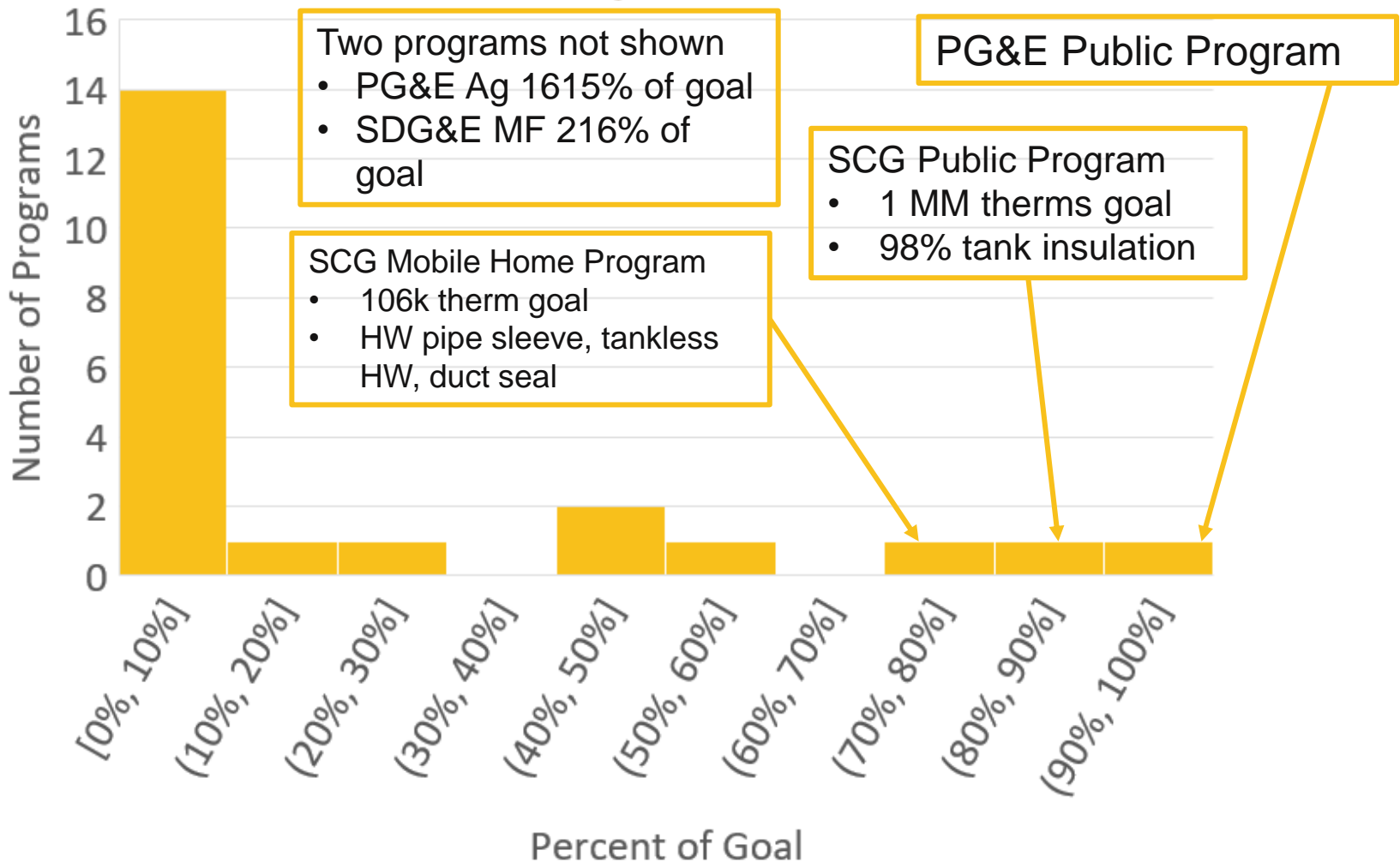
Program Electric Claims to Goal

8



Program Gas Claims to Goal

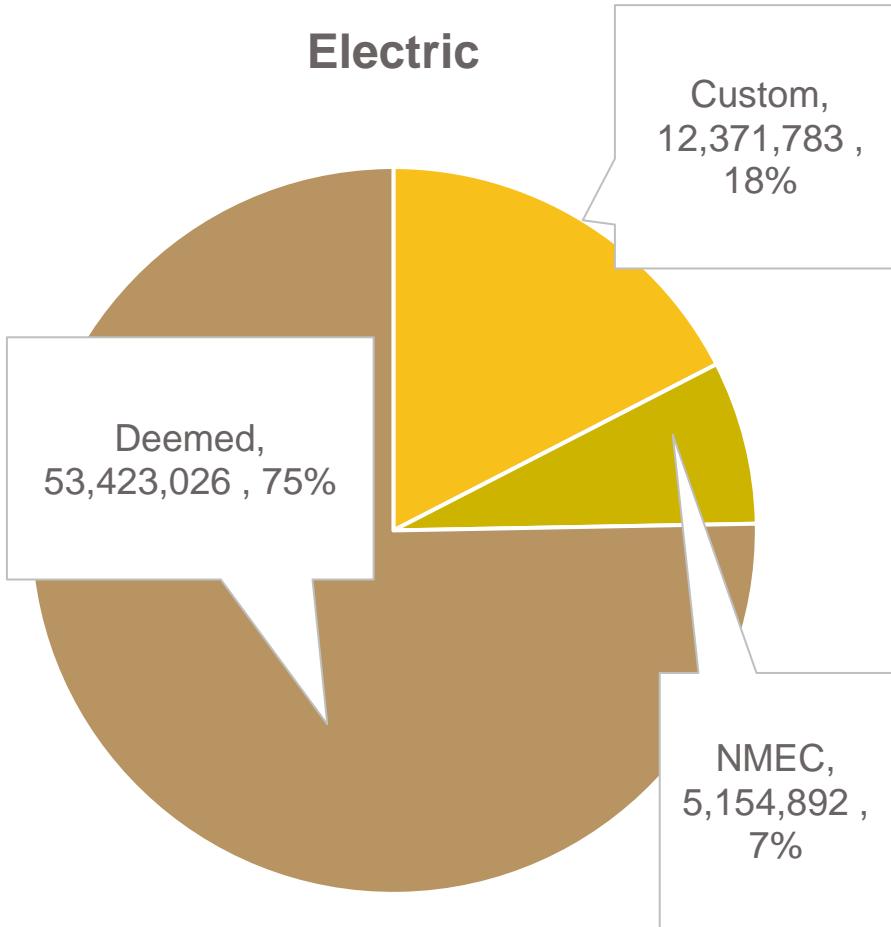
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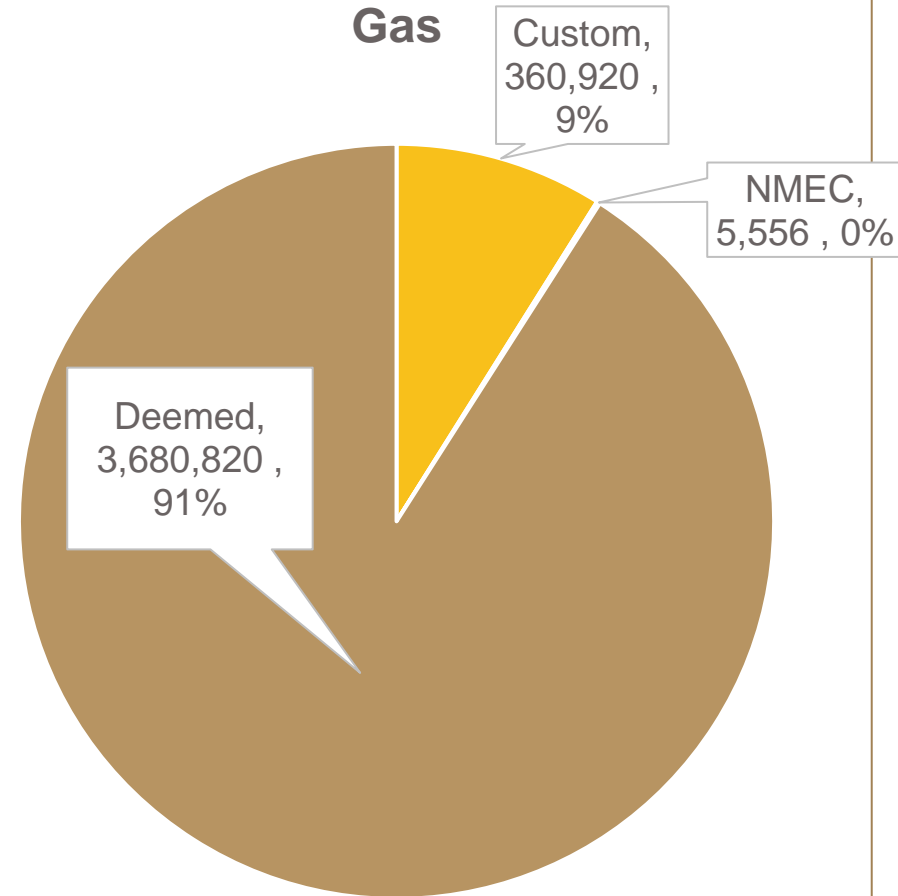
3P Programs Net Savings by Platform

10

Electric



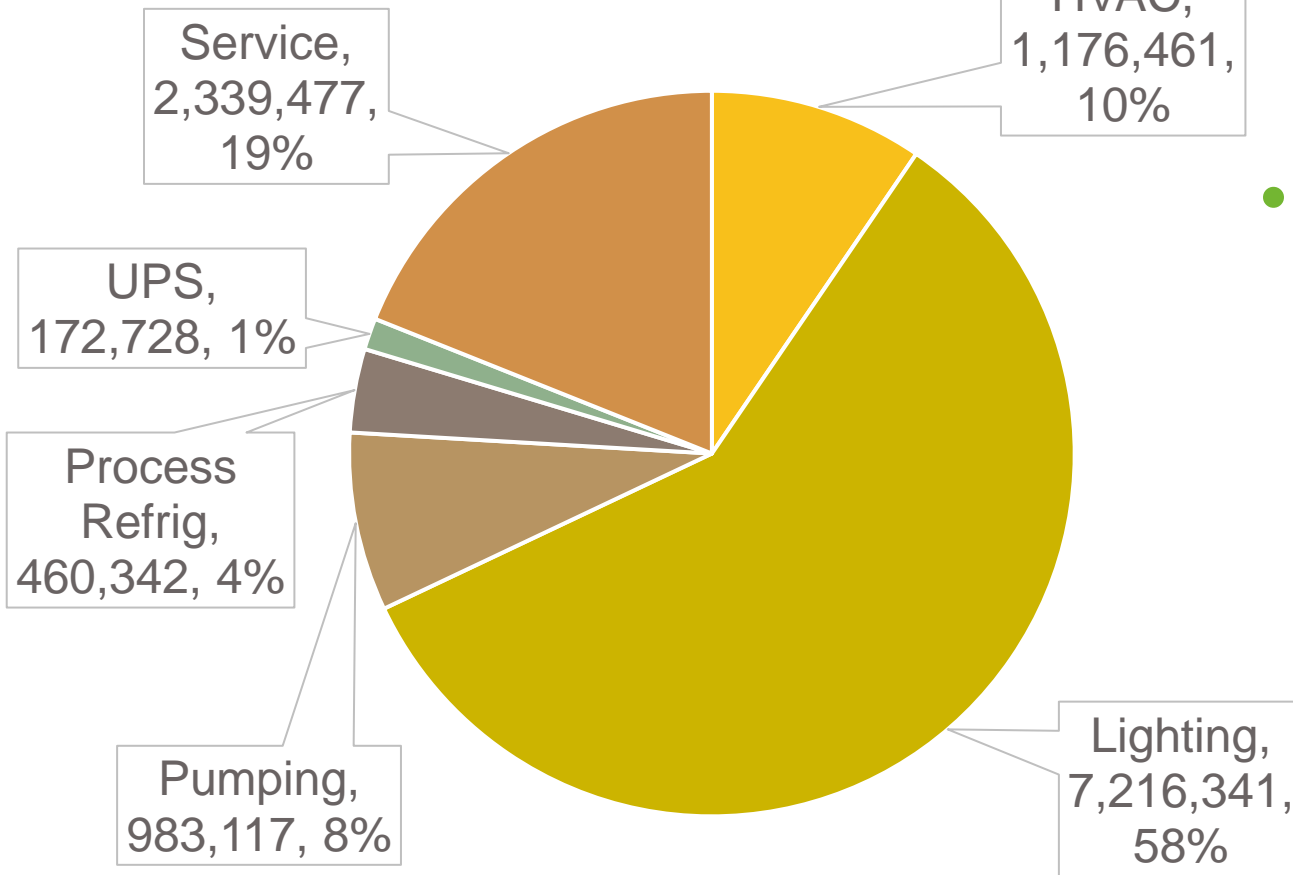
Gas



3P Programs Custom Net Savings by End-Use

11

Electric

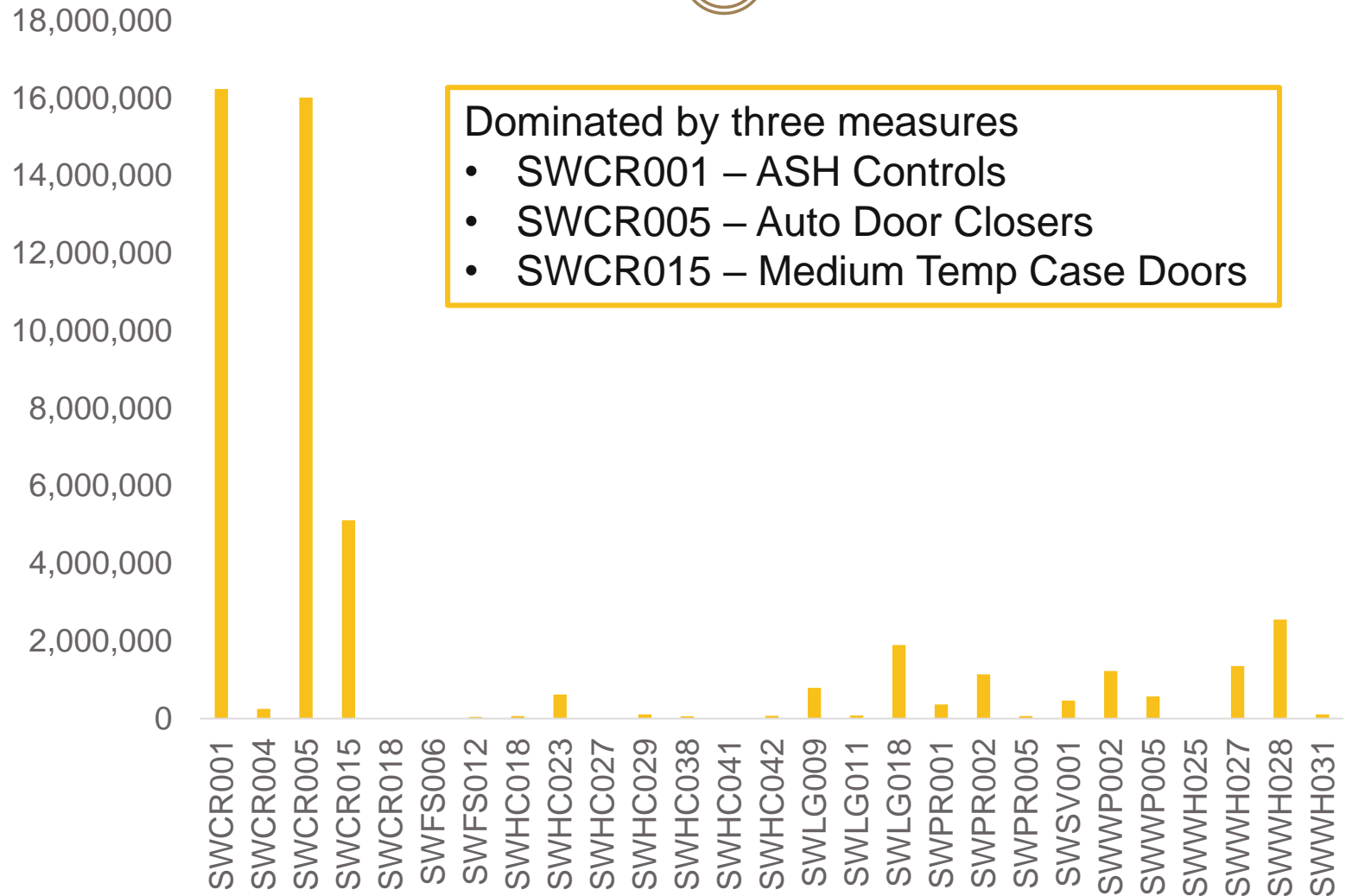


Gas

- Two Claims
 - 37,555 therms - Service
 - 323,365 therms – process heat

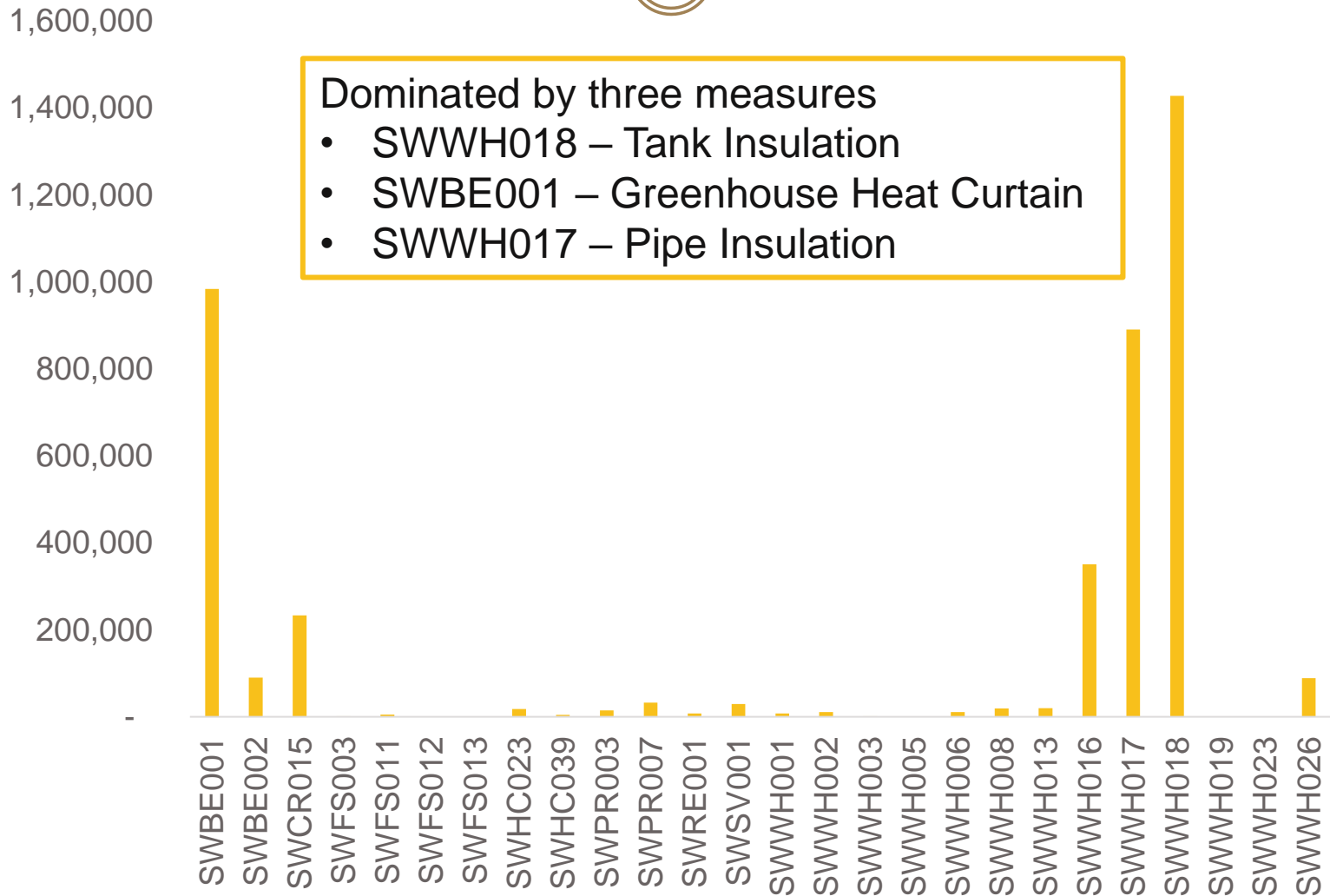
3P Electric Deemed Savings by MP

12



3P Gas Deemed Savings by MP

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3P Program Analysis Summary

Program Strategy Trends

- Most programs did not achieve their goals
- Reliance on a single activity
- Implementers will not entertain custom projects in today's environment

Savings Trends

- Custom represents 17% of claimed savings
 - Non-lighting custom represents 7%
- Two custom claims for gas
 - RCx combined with electric service
- 76% of electric deemed is commercial refrigeration
- 55% of gas deemed is insulation

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**Do you agree these
trends are concerning?**

① Start presenting to display the poll results on this slide.

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**What can we do to
reverse these trends?
What are the solutions?**

① Start presenting to display the poll results on this slide.

CA Portfolio Deemed Analysis

- Reviewed 2022 CEDARS data for **all of CA PPP Programs**
- Analyzed metrics to see trends
 - Claims distribution by program type
 - Claims by Measure Package
 - Review of potential measure gaps
- TF Discussion:
 - What do these trends mean?

2022 Statewide Deemed Analysis

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- 77 GWh Statewide
- 13.6 MM Therms

Portfolio Component	% of Portfolio Electric Savings	% of Portfolio Gas Savings
20 electric, 24 gas 3Ps	66%	29%
RENs/CCAs	3%	3%
Statewide Programs	16%	23%
IOU Core	8%	23%
Other 3P (60% solicitations)	3%	16%
Legacy 3P	5%	6%

Deemed Portfolio Measure Summary

Electric

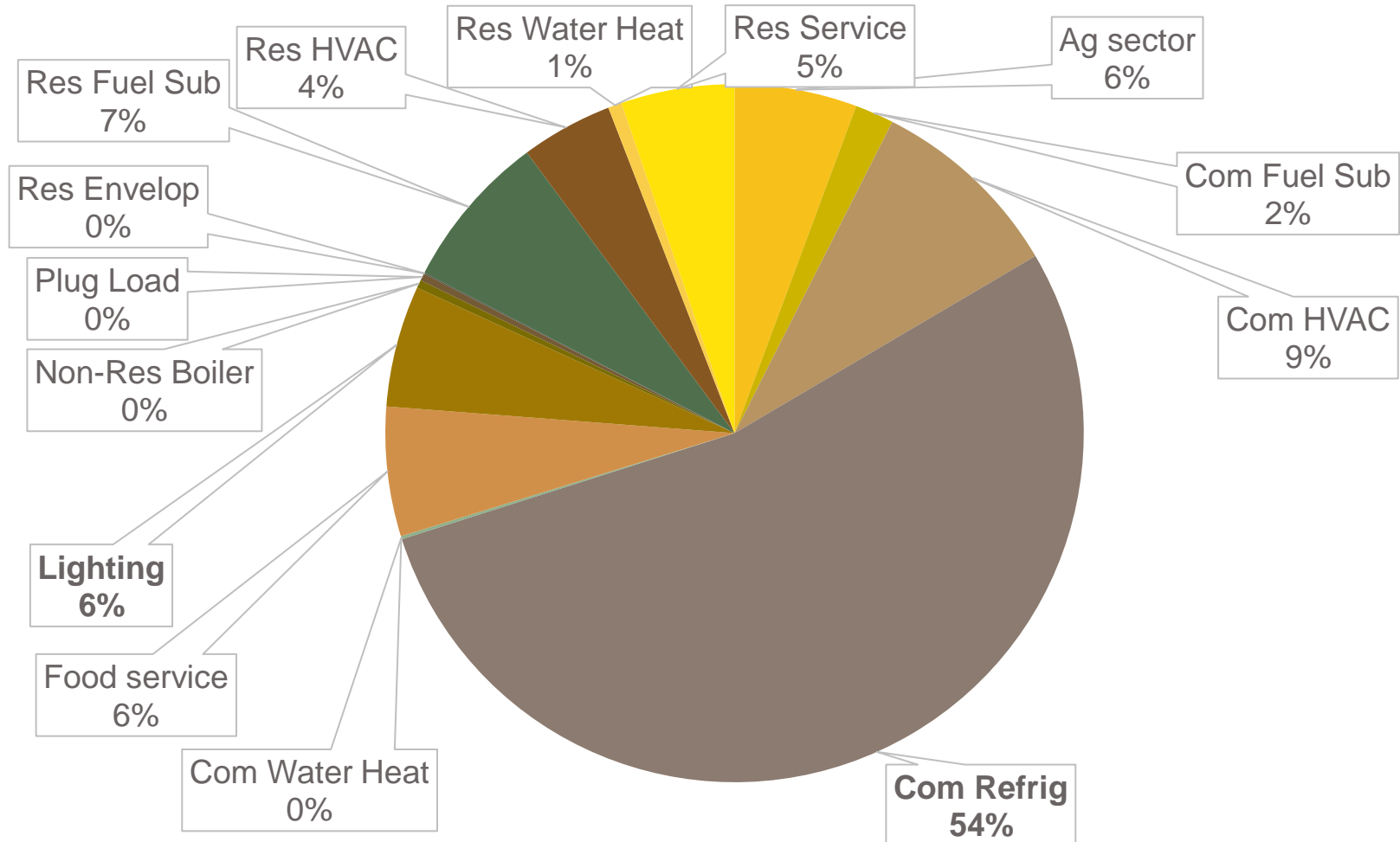
- 68 measures with claims
- 16 measures >1 GWh
- 10 measures for 80% of the savings
- Top 3 measures
 - ASH Controls – 21%
 - Auto Door Closer – 21% (expiring 4/1/24)
 - Medium Temp Case Doors – 10%

Gas

- 57 measures with claims
- 22 measures >100,000 Therms
- 11 measures for 80% of the savings
- Top 3 measures
 - Res Tankless WH – 12%
 - HW Tank Insulation – 11%
 - Greenhouse Heat Curtain – 10%

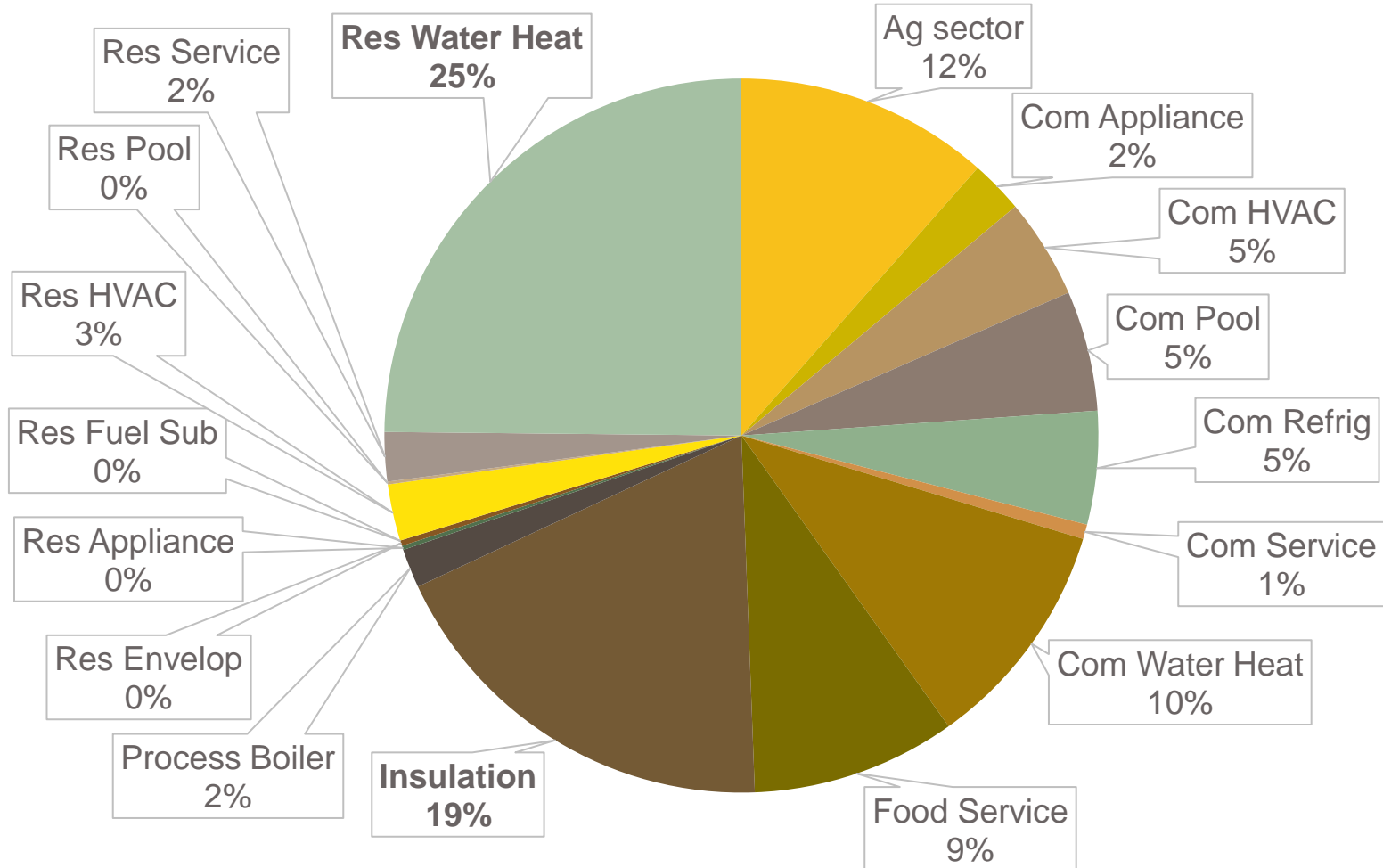
Electric Measure Groupings

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Gas Measure Groupings

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Measure Gaps and Potential and Goals

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HVAC Chiller replacement

- 2 claims for 11,785 net kWh
 - TRC = 0.07
- 2022 Potential and Goals Study
 - Scenario 2a = TRC range 0.43 to 0.96
 - 3.35 net GWh

HVAC Fan VSD

- 35 claims for 440,825 net kWh
 - TRC = 0.34
- CPUC 2022 Potential and Goals Study
 - TRC 0.85 to 1.84 (only one scenario below 1)
 - 4.62 net GWh

Portfolio Wide Deemed Take Aways

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- More analysis can be done on [eTRM stats](#)
- Deemed measure 80/20 rule
 - Electric 80% of savings from 14% of the measures
 - Gas 80% of savings from 19% of the measures
- Appears technology or system focused
- Installations are not being claimed
- Disconnect between claims and Potential and Goals

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**What can we do to
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Hybrid Measures



CAL TF STAFF

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Hybrid Measures

- **Hybrid Measure Candidates**
 - What existing or new measures fit in the hybrid measure approach?
- **Hybrid Measure Pathway**
 - What are the criteria and pathway that make hybrid measures viable?

Hybrid Measure Definition

- Cal TF White Paper: EE Measure Classification
 - The savings estimation **algorithm of a hybrid measure is deemed** (i.e., pre-established and approved) and **site-specific data is collected** for select parameters that account for most of the variation in savings

- CA POU TRM
 - **Semi-custom measures** are measures for which the savings estimates can vary significantly depending on how or where the measure is used. **Savings estimates are calculated using standard methodologies based on project-specific parameters.** For semi-custom measures, the manual documents the savings methodology and may also provide a standardized savings calculator for use in estimating energy savings

EE Measure Types

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How a measure is classified has implications for **implementers** (ease and usability of a measure), **customers** (speed of project development/certainty of savings/certainty of incentive), **program administrators** (ex post evaluation risk, review, and claims process), and the **regulatory approval** process.

Deemed

“per-unit impacts and costs have been pre-determined” (and pre-approved by CPUC for use in IOU programs)

- Deemed calculation method
- Deemed parameter values

Hybrid

“Semi-custom” in the CA POU TRM)

The savings estimation algorithm of is pre-established and approved, and site-specific data is collected for select parameters that account for most of the variation in savings

- Deemed calculation method
- Deemed parameter values

Custom

“customer financial incentive and the ex-ante energy savings are determined using a site-specific analysis of the customer’s facility.”

- Deemed calculation method
- Deemed parameter values

What should go Hybrid?

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- **Missing Deemed MP Permutations**
 - Measures w/o deemed permutation (e.g., baseline not included, outside the approved capacity range)
- **Standard/Common Custom Measures**
 - Measures from custom portfolio with standard savings calculation method/algorithm/tool
- **“Stranded” Measures**
 - Measures too small to warrant custom pathway; too infrequent to warrant deemed measure package

Missing Deemed MP Permutations

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- Measures w/o deemed permutation (e.g., baseline not included, outside the approved capacity range)
- **Examples:**
 - ❑ Ductless HP, Res (SWHC027) missing baselines for MF buildings
 - ❑ PTAC or HP (SWHC027) missing baselines for MF buildings
 - ❑ High Bay Lighting MPs missing New Construction MAT
 - ❑ **Else?**
- **Discussion:** Do we solve this Hybrid or with updated Measure Packages?

Standard/Common Custom Measures

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Measure

- Steam boiler replacement
- Pump system overhaul
- Compressed air leaks
- HVAC controls
- Multi vapor recompression

System

- HVAC chiller
- Boiler Plant
- Pump systems
- Boiler distribution
- Compressed air
- Lighting
- Pool pumps
- Process equipment
- Process fans
- Process refrigeration
- Process cooling

Activity

- HVAC RCx
- Fuel substitution
- Site NMEC
- Strategic Energy Management

Subsector

- Data centers
- Indoor horticulture
- Oil production
- Multifamily existing whole building
- Non-res new construction individual systems
- Res new construction whole building
- Wastewater

2023 complete or in progress

2023 paused

“Stranded” Measures

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- Too small to warrant custom pathway; too infrequent to warrant deemed measure package
- **Examples:**
 - Small Commercial HVAC Controller
 - **Else?**

Hybrid Measure – Goals/Value

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- Increase measure uptake (eliminate “stranded measures”)
- Improve customer participation, perception, experience
- Reduce time and transaction costs for implementers
- Increase certainty in measure savings, incentive, approvals
- Capture data in a structured format that could:
 - Improve inputs over time
 - Result in converting the hybrid measure to a deemed measure
- Balance:
 - Optimizing use of ratepayer funds by streamlining the process
 - Providing more site-level data than a typical deemed measure

Hybrid Measure – Approach

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- Greater **simplicity** than custom measures and greater **accuracy** than deemed measures in savings and/or cost estimates.
- **Looks like a deemed measure to the customer**
 - Known rebate based upon “normalizing unit” (e.g., HP, kBTUH)
 - No pre-approval required to install the measure
 - Pre-determined and clear data and documentation requirements
 - Clear/streamlined influence requirements OR deemed NTG value
- **Hybrid “Measure Characterization”**
 - Define scope, eligibility requirements
 - Defines savings calculation algorithm, method, and/or tool
 - Defines all data and documentation requirements
- **Streamlined, shorter approval process**, similar to deemed measures.

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What other considerations are needed to make hybrid measures viable (e.g., to capture stranded savings)?

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Next Steps

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- Next Steps
 - Compile list of hybrid candidates
 - Assess/prioritize list of hybrid candidates for statewide development
 - Develop hybrid proposal (e.g., streamlined pathway for hybrid/semi-deemed measures)

LUNCH
12:15 – 1:00

HVAC

Fuel Substitution Measures



BRYAN BOYCE, ENERGY SOLUTIONS
AYAD AL-SHAIKH, CAL TF STAFF

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HVAC Fuel Substitution Measures

- Thanks to:



- Leadership to commission this Study on Fuel Substitution (FS) Measures
 - ✦ 8 Residential Measures
 - ✦ 15 Commercial Measures



- Presentation on measures and next steps

- TF Discussion:

- Questions/input on FS measures

- **Slido Poll:**

- ✦ Rate excitement / interest in each FS measure






- ✦ www.slido.com

- ✦ #caltf11

Excitement Scoring

Excitement Level –
Trying to help prioritize
which measures to fund
for measure
development

- **Slido Poll:**
 - Rate excitement / interest in each FS measure

 - www.slido.com
 - #caltf11
- **1-Star means:** 
 - **Dud** measure - not at all cost effective; your program would not include it
 - Low market acceptance - poor choice for customer
- **5-Stars means:** 
 - **Great** measure - high savings, high TSB
 - Strong market acceptance – great choice for customer

Additional Questions to Consider...

- Do you agree with the list of HVAC Fuel Substitution opportunities?
 - Is there anything major that was missed?
- Do you agree with the technical characterization of each opportunity?
 - Including the baseline and measure case framework?
- Do you agree with the recommended prioritization?
 - If not, what would you prioritize first for deemed new measures?

Next Steps

- Survey results will be shared with SDG&E
- Any other feedback from stakeholders can also be shared:

Send to: Ayad_Al-Shaikh@futee.biz

Cal TF 2024 Business Plan

- [Draft Cal TF 2024 Business Plan](#)
- ACT – TF and stakeholder input on draft Business Plan
 - Send comments to arlis.reynolds@futee.biz **by EOD Tuesday, November 28**

Cal TF 5-Year Roadmap

- [Draft Cal TF 5-Year Roadmap](#)
- ACT – TF and stakeholder input on draft Roadmap
 - Send comments to arlis.reynolds@futee.biz **by EOD Tuesday, November 28**

Next Steps

- Action Items
 - Send comments on draft Business Plan and/or Roadmap **by Tuesday, 11/28**
 - Review Draft ISP White Paper when distributed

- December TF Meeting and EOY Celebration
 - Thursday, December
 - 10am-4pm TF Meeting @ LACI
 - 4:30-7pm Celebration @ Zinc
 - [RSVP for December Meeting and EOY Celebration](#)