

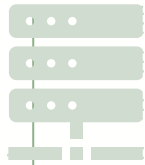
2022 Business Plan: Annual Report



FEBRUARY 2023

2022 Business Plan Goals

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1: Administer software development of eTRM v2.x



2: Ongoing Implementation of Current eTRM Version



3: Measure Management: Manage Existing Measure Updates



4: Measure Management: Manage and Implement the Ongoing Statewide New Measure Development Process



5: Continue Development of POU Custom Measures for the eTRM



6: Identify, Analyze, and Recommend Key Emerging Technical and Technical Policy Issues in a Statewide Consistent Way



7: Manage the Cal TF and Cal TF PAC

2022 Highlights

3

- Relaunched TF and PAC in June 2022
- **13 new Cal TF members** (37 members total)
- **4 new Cal TF Staff Members**
- eTRM 2.4 release and documentation (new features for transparency, usability, consistency, and efficiency)
- eTRM has more than **2,600+ registered accounts**
- Reviewed **136 measure packages**
- Reviewed **23 proposed new measures**
- Launched **Deemed Measure Property Data Subcommittee**
- Launched **Custom Initiative** with Custom Charette, Custom Subcommittee and Cal TF Analysis on eTRM opportunities

New Cal TF Staff Members

4

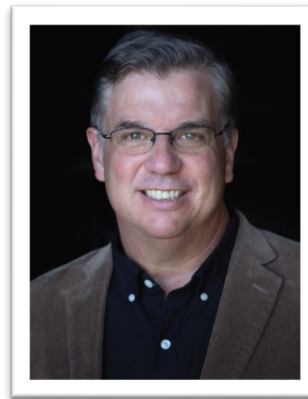


Arlis Reynolds
Costa Mesa, CA

15+ years of experience
in EE and EM&V

Led EE impact and
process EM&V and pilot
tech/program analysis

**Leading custom /
hybrid measure
activities**



Daniel May
Chicago, IL

33+ years of experience
in software
development/mgmt

Designed, matured, sold
two software companies

**Supporting next phase
of eTRM software
development**



Randy Kwok
San Jose, CA

30+ years of experience
in EE

Former TF Member

16 years with PG&E EE
team (custom, deemed,
low income)

**Supporting Measure
Property Data effort**



Spencer Sator
Boulder, CO

15+ years of experience
in energy

Former Director of
Emerging Technology at
E Source

**Supporting New
Measure Review
process**

Goal 1 Metrics

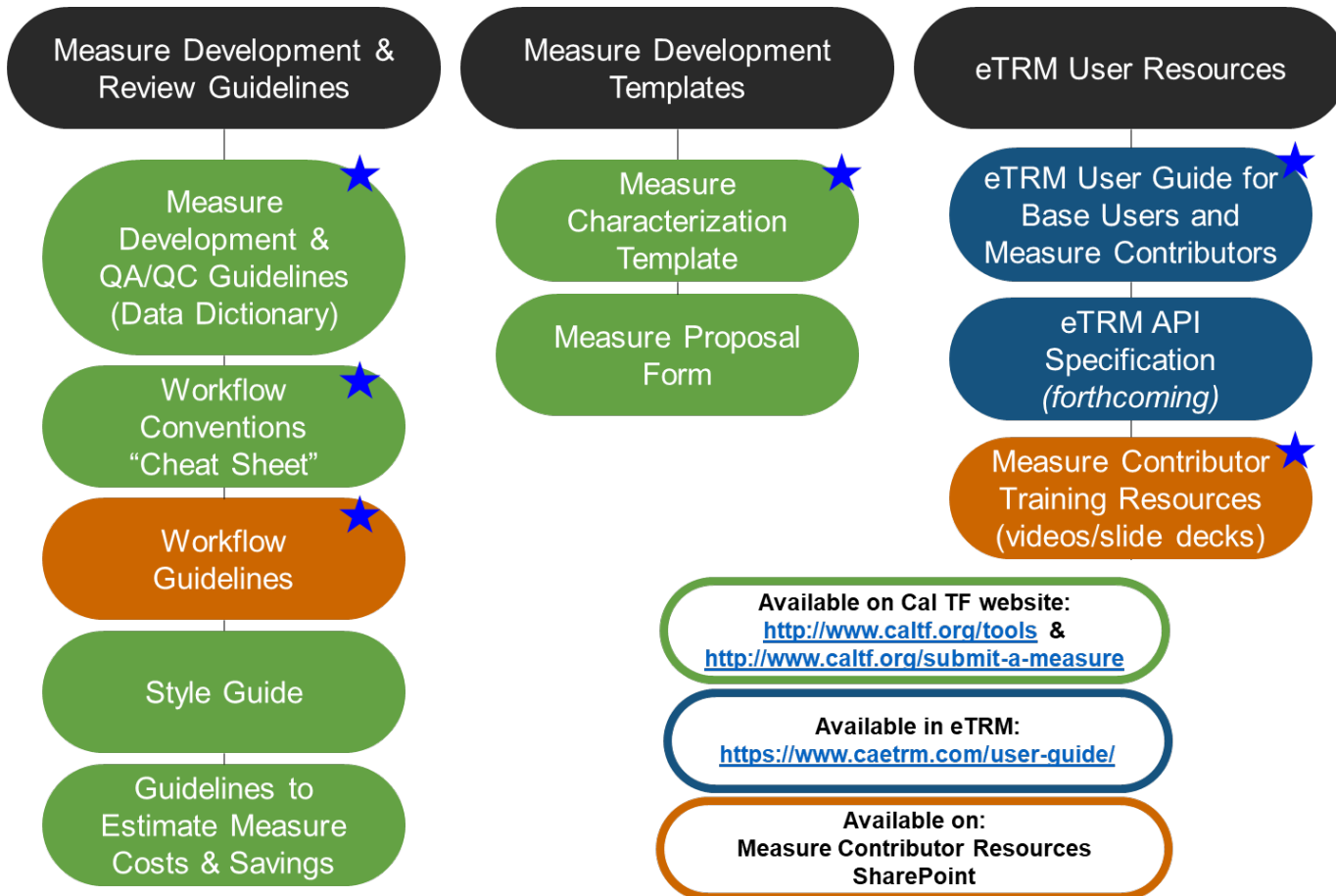
Administer software development of eTRM v2.x

- Implement enhancements for eTRM v2.x
- Document eTRM technical guidance
- Identify and socialize eTRM 2022 enhancements

- **Key eTRM Enhancements:**
 - Added CPUC dashboard and reports
 - Added measure review commenting platform
 - Added daily digest of measure log notifications
 - Added data analytics tools (eTRM Stats)
 - Added new data fields for water savings
 - Added API database to improve performance
 - Enhanced user visibility to measure package update activity (Measure Package Review Summary Report)
 - Improved measure ordering, implemented release cycles, and short form version number
 - Improved permutation consistency
 - Increased CCAs/REN participation in eTRM
 - Established software performance benchmark process
 - Completed security audit
 - Updated and created new Documentation (see next slide)

eTRM Documentation/Resources

6

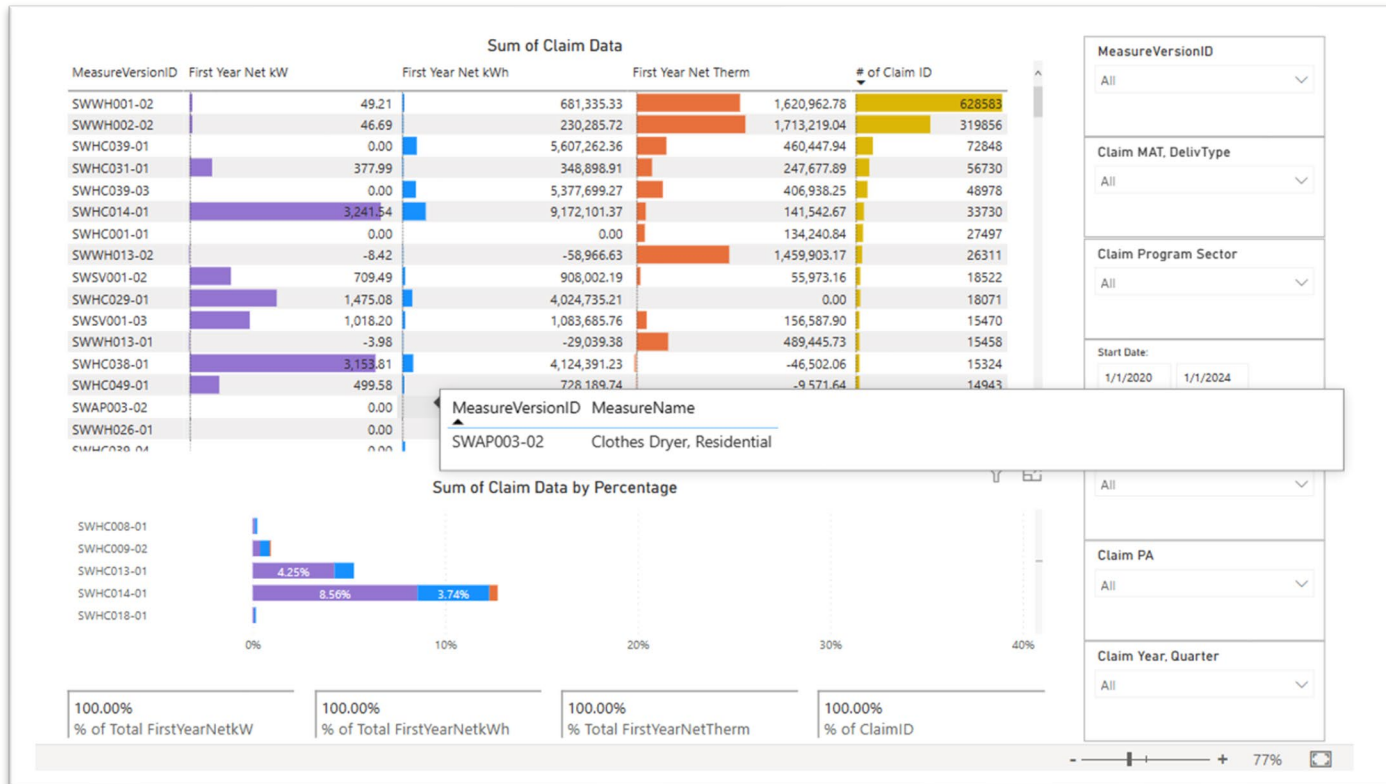


★ = Updated document posted in December

eTRM Data Analytics

7

eTRM Stats - New eTRM feature uses Power BI visualization for customizable data views



eTRM Data Analytics

8

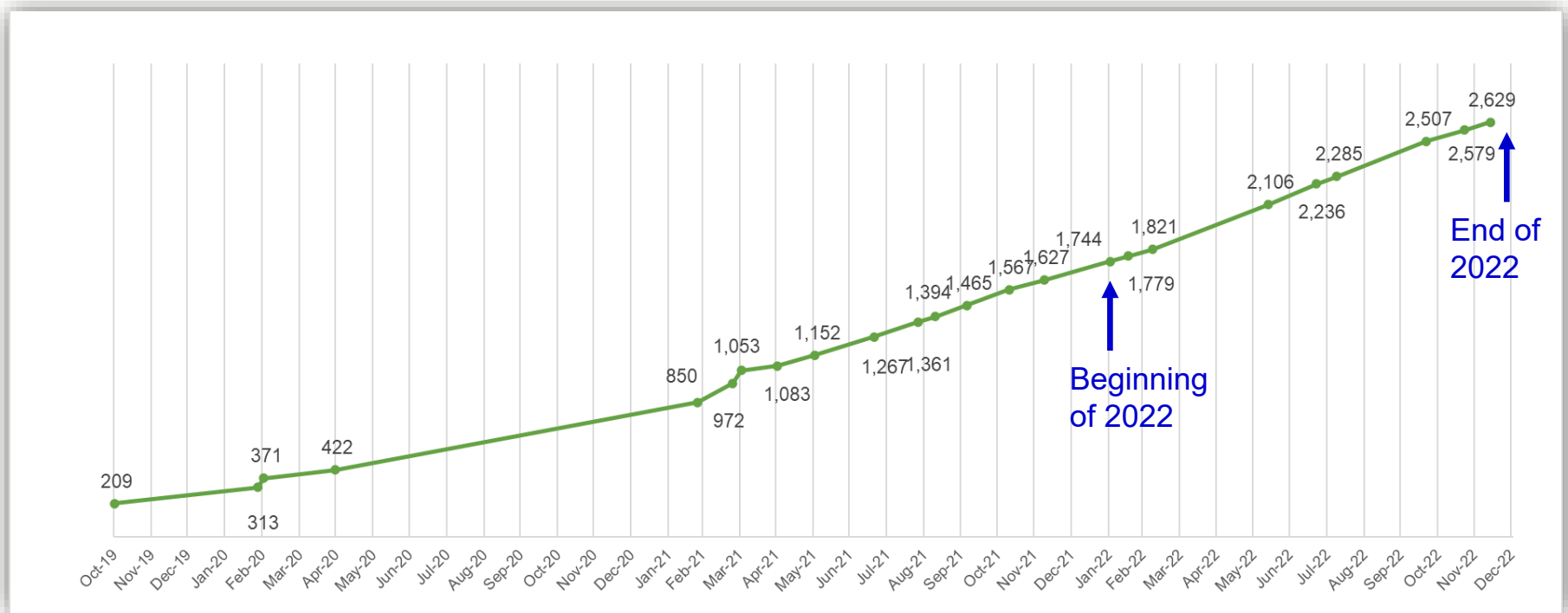
Created five customizable data views based on stakeholder input and common requests

eTRM Stats Data View	Description
Measure Counts	Overview of published eTRM measures and permutations by Use Category
CEDARS Claims Data	CEDARS claims data for key savings parameters by eTRM measure (downloaded from CEDARS by program year)
Cost Effectiveness	Cost effectiveness output fields (generated using CEDARS CET tool) by Measure, Measure Version, Offering ID, and Measure Detail ID
Measure Versions Comparison Tool	Enables users to compare measure values and identify changes (e.g., savings and costs) between two measure versions
Sunset Measures	Shows the list of measures that expire by 12/31/2022, including the reason for sunseting

eTRM Registered Accounts

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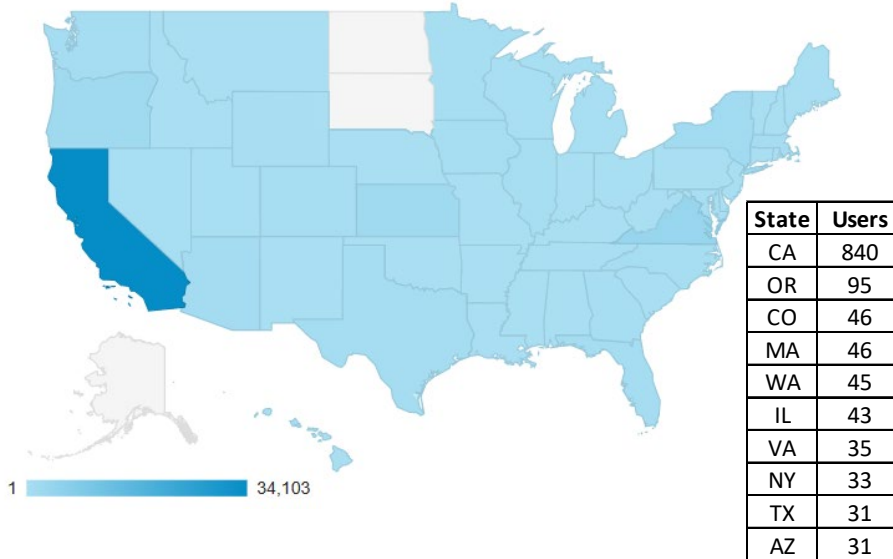
- Continued user base growth
- IOUs using eTRM data for claims



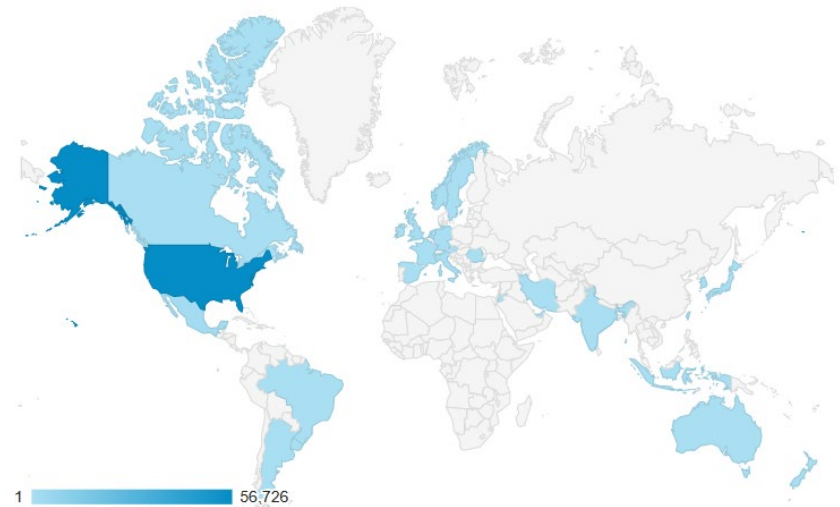
eTRM Usage Data (Google Analytics)

2022 eTRM sessions, by location

eTRM sessions in the United States



eTRM sessions across the globe



eTRM usage data, Q4 2022 vs Q4 2021

Sessions (period time a user is actively engaged with your website, app, etc.)

45.11%
10,586 vs 7,295

Pageviews (total number of pages viewed; repeated views of a single page are counted.)

42.01%
148,095 vs 104,282

Avg. Session Duration (average length of a session)

12.41%
00:14:38 vs 00:13:01

Goal 2 Metrics

Ongoing
Implementation of
Current eTRM Version

- Complete 2022 eTRM training objectives, including:
 - Conduct up to six (6) webinar trainings for various stakeholder user groups
 - Conduct post-training survey
 - Trained new team of Measure Developers
 - Created/added **18 new videos** to the eTRM User Guide
 - Updated Measure Developer documentation based on common questions/issues
 - Collected feedback to improve 2023 Measure Developer trainings
- Governance: Finalize eTRM Governance Plan with expected eTRM 2022 owners
 - Moved item into 2023 BP to coordinate with Cal TF Governance

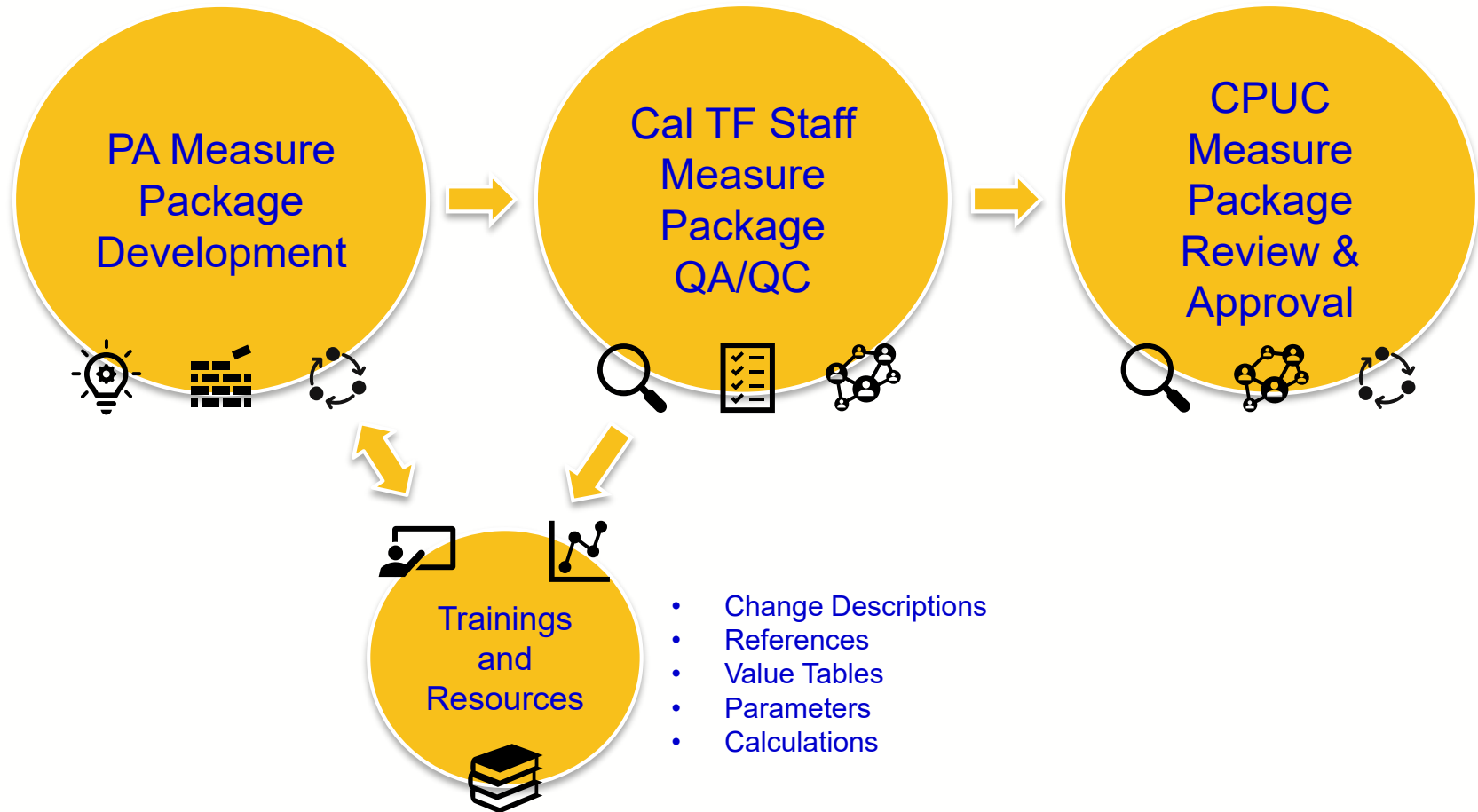
Goal 3 Metrics

Manage Existing
Measure Updates

- Track and report metrics for existing measure updates
 - Reviewed **136** Measure Packages
 - ✦ **127** measure updates
 - ✦ **9** new measures (see slide 21)
- Coordinate monthly statewide meetings on new/updated measures for the Statewide Deemed Measure List
 - Hosted monthly meetings
 - Monthly measures lists are posted on Cal TF website

Cal TF Measure Review Process

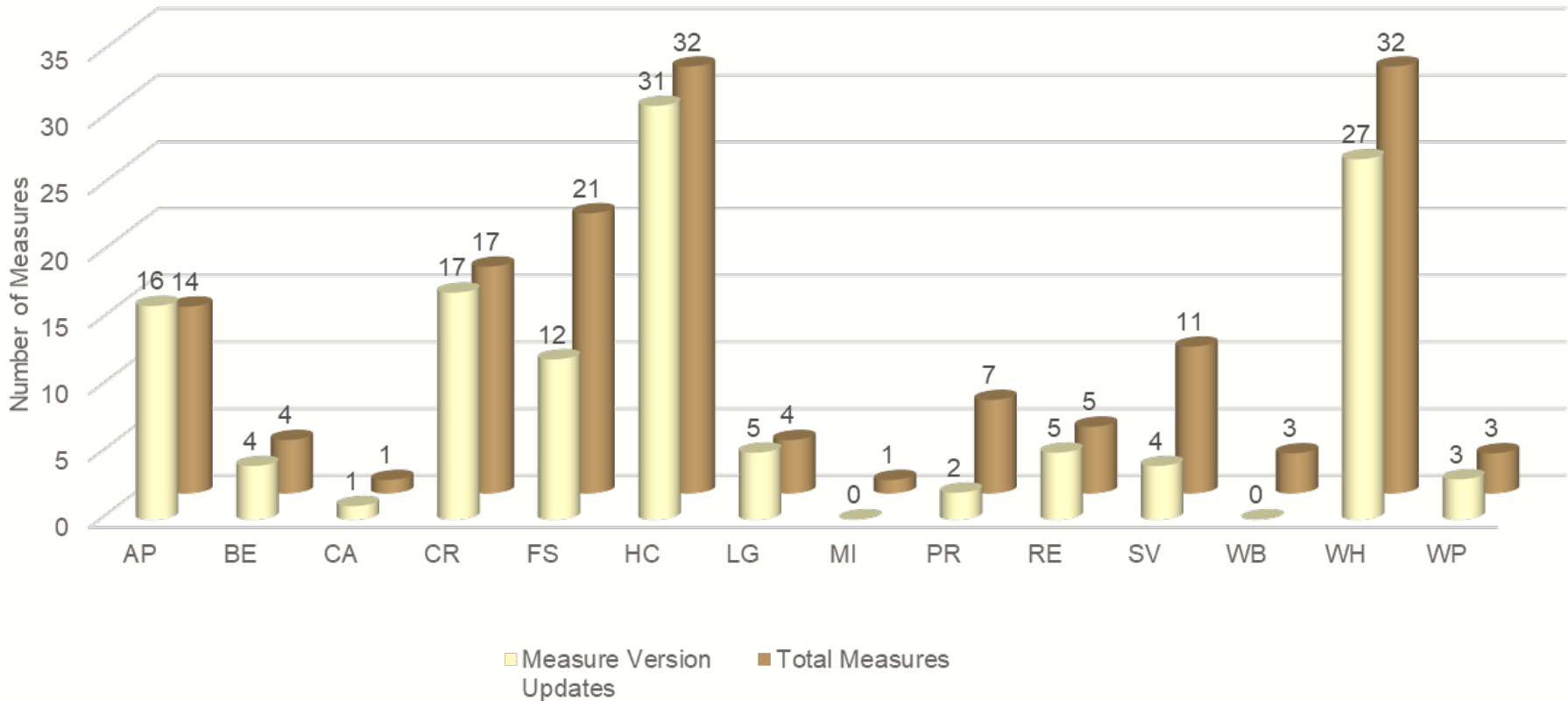
13



127 Measure Package Updates

14

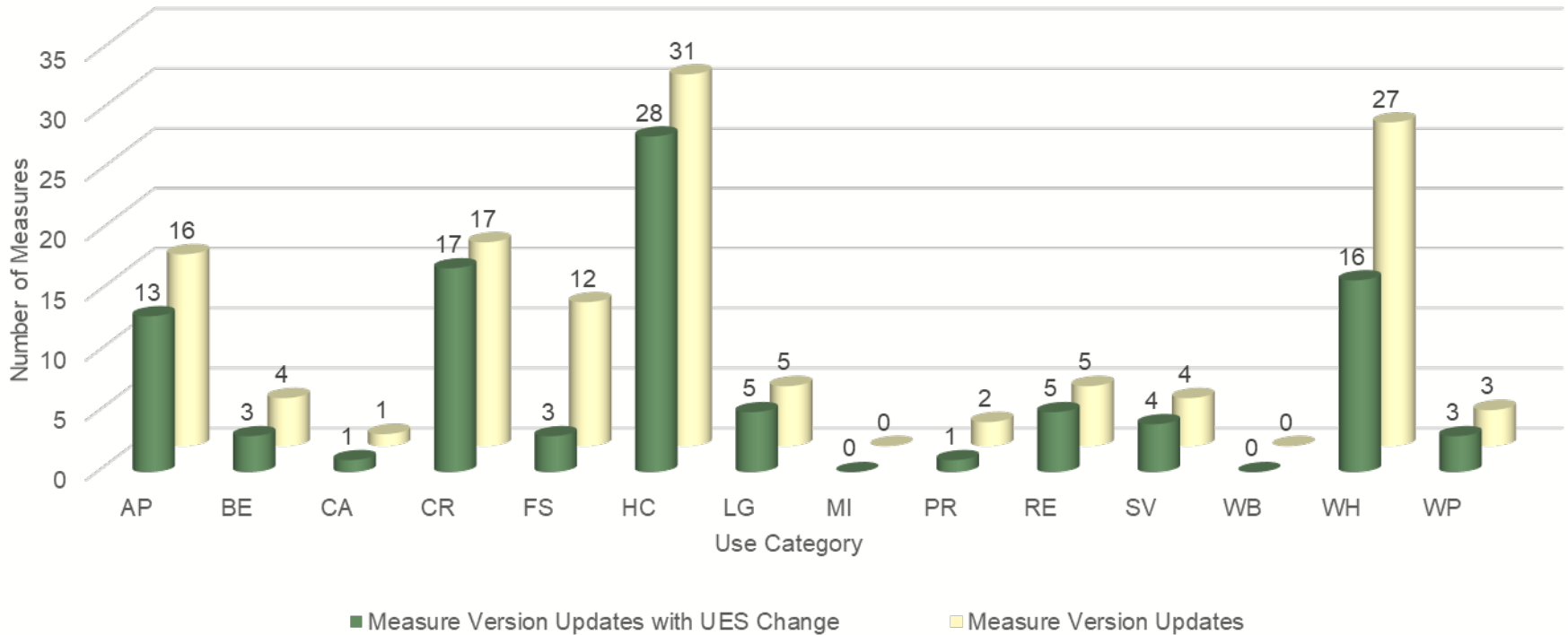
Measure Version Updates (127) vs Total Measures (155), by Use Category (2022)



AP = Appliance or Plug Load; BE = Building Envelope; CA = Compressed Air; CR = Commercial Refrigeration; FS = Food Service; HC = HVAC; LG = Lighting; MI = Miscellaneous; PR = Process; RE = Recreation; SV = Service/Domestic Hot Water; WB = Whole Building; WH = Water Heating; WP = Water Pumping/Irrigation

99 Updates with UES Changes

Updates with UES Changes (99) vs Total Updates (127), by Use Category (2022)



AP = Appliance or Plug Load; BE = Building Envelope; CA = Compressed Air; CR = Commercial Refrigeration; FS = Food Service; HC = HVAC; LG = Lighting; MI = Miscellaneous; PR = Process; RE = Recreation; SV = Service/Domestic Hot Water; WB = Whole Building; WH = Water Heating; WP = Water Pumping/Irrigation

Measure Package Reviews

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- **Most Common Updates in Measure Packages**
 - Unit Energy Savings (UES), mainly weather data updates (99)
 - Costs (83)
 - NTG (23)
 - Offerings (28)
 - Delivery Types (19)
- **Completeness & Accuracy**
 - Cal TF Staff used QA/QC checklist during Cal TF Staff Review to ensure quality updates and support continuous improvement
- **Time metrics**
 - Time accounting requires manual input, which is not currently captured consistently by Measure Developers
 - Cal TF Staff is working on training and other strategies to capture time/effort

Goal 4 Metrics

Manage and Implement
the Ongoing Statewide
New Measure
Development Process

- Track and report metrics for all measures coming through the Cal TF New Measure Process
 - Measure Identification
 - Measure Screening Committee
 - Statewide Coordination of Measure Development and QA/QC
- 23 measures submitted to New Measure Process
- Added new measure tracker on Cal TF website
- Cal TF to review new measures for affirmation in 2023
- Cal TF is developing an enhanced new measure intake strategy for 2023

New Measure Screening/Development

- Measure Screening Committee
 - ❑ Ayad Al-Shaikh, Cal TF
 - ❑ Armen Saiyan, LADWP
 - ❑ Henry Liu, PG&E
 - ❑ Jay Bhakta, SCE
 - ❑ Anders Danryd, SCG
 - ❑ Ed Reynoso, SDG&E
 - ❑ Jim Hanna, CEDMC/Energy Solutions
 - ❑ Lauren Seymour, CEDMC/TEC
 - ❑ King Lee, CEDMC/CLEAResult
 - ❑ Mohammad Dabbagh, NAESCO/NORESO
 - ❑ Mike Casey, NAESCO/Independent
 - ❑ Gabriel Taylor, CEC
 - ❑ Jason Tancher, CEC

[Live New Measure Development Library](#) on Cal TF website

New Measure Development Library

Name	Source	Status	Lead IOU	Stage	Submittal Date	Modified	Statewide Measure ID
SWNM00x - (new measure name)1						11/10/2022	
SWNM047 - Solar Attic Fan, Residential	POU	Affirmed	LADWP	Measure Screening Committee	11/29/2022	1/19/2023	
SWNM046 - Portable Air Conditioners and Heat Pumps, Residential	POU	Affirmed	LADWP	Measure Screening Committee	11/29/2022	1/19/2023	
SWNM045 - Turf Removal	IOU	Affirmed		Measure Screening Committee	11/9/2022	11/11/2022	
SWNM044 - Direct Evaporative Cooler	POU	Affirmed	LADWP	Measure Screening Committee	11/2/2022	1/19/2023	
SWNM043 - Weather-Based Irrigation Controllers - WEN	IOU	Affirmed	SDG&E	Measure Development	9/8/2022	10/2/2022	
SWNM042 - High Efficiency Toilets - WEN	IOU	Affirmed	SCG	Measure Development	9/8/2022	10/2/2022	
SWNM041 - Automatic Control Receptacle	3P/Implementer	On Hold	SDG&E	Measure Screening Committee	9/8/2022	10/20/2022	
SWNM040 - Switch Reluctance Motor	3P/Implementer	Affirmed	SCE	Measure Screening Committee	8/1/2022	11/10/2022	SWHC041-03
SWNM039 - Rotisserie Oven	3P/Implementer	Affirmed	SCG	Measure Development	7/1/2022	9/21/2022	
SWNM038 - Res NC, Electrification Package	3P/Implementer	Affirmed	PG&E	Measure Development	6/1/2022	7/29/2022	
SWNM037 - Steam Table, Commercial	3P/Implementer	Affirmed	SCG	Measure Development	5/1/2022	7/25/2022	
SWNM036 - Demand Controlled Ventilation	Manufacturer	Pending	SCE	Measure Screening Committee	6/1/2022	7/25/2022	
SWNM035 - Soup Well, Commercial	3P/Implementer	Affirmed	SCG	Measure Development	5/1/2022	9/21/2022	
SWNM034 - Cooktop, Commercial	3P/Implementer	Affirmed	SCG	Measure Development	5/1/2022	7/25/2022	
SWNM033 - Lifecycle Refrigerant Management (RCA+)	Manufacturer	Affirmed		Measure Screening Committee	5/1/2022	12/2/2022	SWSV006-01, SWSV007-01

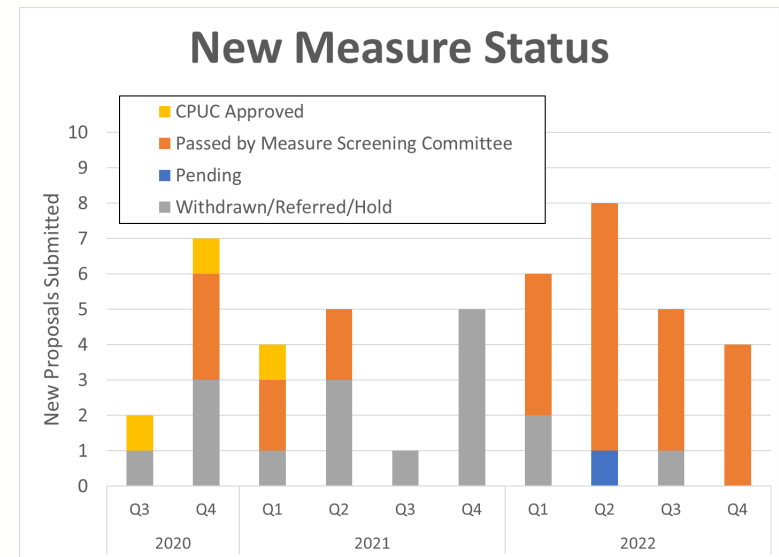
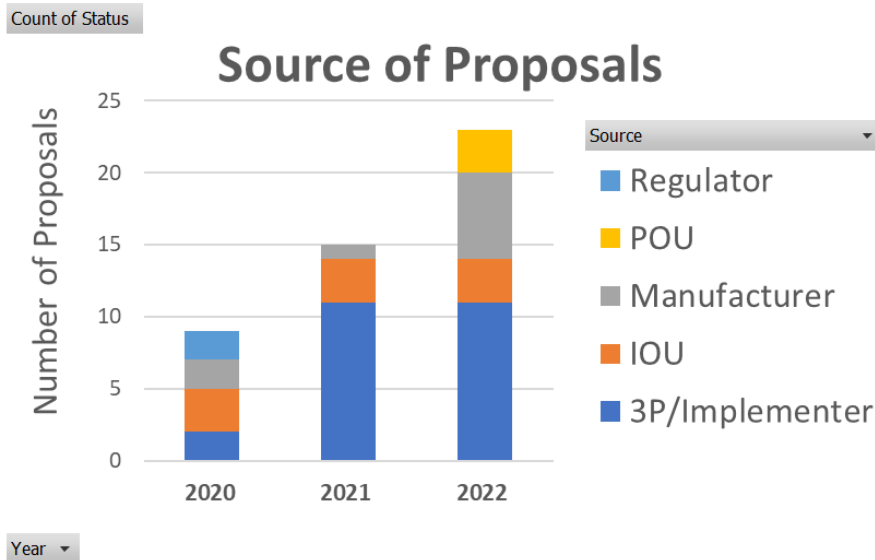
Source: All | Status: All | Lead IOU: All | Submittal Date: Y, M, D: All | Date Modified: Y, M, D: All

Microsoft Power BI

New Measures – by Source and Status

Source of new measures submitted to New Measure Process

Status of new measures submitted to New Measure Process



Cal TF is developing an enhanced new measure intake strategy to accelerate the identification and screening of potential new measures for the eTRM.

Note: Figure does not encompass all new measure activity; PAs can also develop new measures outside the New Measure Process.

New Measure Review Metrics

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- Counts
 - **23** – Proposed measures submitted
 - **20** – Proposed measures passed by Measure Screening Committee
 - **3** – Measures not passed by Measure Screening Committee
 - **2** – Proposed measures published in the eTRM
 - ✦ Heat Pump, Commercial (new offering)
 - ✦ Condensing Wall Furnace (new offering)
- Time from Measure Initiation to Measure Submission
 - Cal TF is capturing key milestone dates to track time metrics
- Cal TF enhanced new measure intake strategy will expand the number of potential new measures in 2023

Note: Metrics for measures submitted to the New Measure Process; PAs may develop measures outside the Measure Process.

9 New Measure Reviews

21

Under review by CPUC (6)

- Deeply Buried Ducts, Residential
- Hot Food Holding Bins, Commercial*
- Heat Recovery Ventilation, Residential
- Space Heating Gas Absorption Heat Pump, Multifamily
- UL Type B LED Screw-in Lamp HID Retrofits*
- Business Energy Reports*

Approved by CPUC (3)

- Large Heat Pump Water Heater, Commercial and Multifamily, Fuel Substitution*
- Gas Heat Pump Water Heater, Multifamily
- “No Savings” Measure Offerings**

* New measures submitted to the New Measure Screening Committee; other new measures are proposed/developed directly by PAs

** The No Savings measure offerings are for processing third-party bonus payments, fixing processing errors, and correcting reporting records by referencing "NonSav" data parameter value for the express purpose of processing CEDARS reports and CEDARS CET zip files.

Goal 5 Metrics

Continue Development
of POU Custom
Measures for the eTRM

- Identify and develop POU express-custom and hybrid/procedural measures using the existing eTRM capabilities
 - Initiated standardization efforts for seven measures: Boilers, Chiller System Upgrades, Retrocommissioning, Pump Packages, Pump Overhaul, Small HVAC, and VFD for HVAC Fans
- Update eTRM documentation as needed
 - Cal TF Analysis: [Leveraging the eTRM for the Custom Projects](#)
 - Updated eTRM Measure Characterization for Custom Measures
 - Developed eTRM “Phase 1” Functional Specifications for Custom Measures
- Implement select POU TRM tools/calculators
 - Moved to 2023 to examine eTRM enhancements
- Hosted Custom Charette
- Launched Custom Subcommittee

Goal 6 Metrics

Identify, Analyze, and Recommend Key Emerging Technical and Technical Policy Issues in a Statewide Consistent Way

- Develop at least one Technical Position Paper (TPP)
- Develop at least one white paper
 - Review and update existing Cal TF documentation (TPPs, white papers, templates), as needed.
- Deemed Measure Property Data
 - Cal TF Staff analysis of creating a process and transparent mechanism to house and maintain deemed requirements for program eligibility, exclusions, and data collection.
- Leveraging the eTRM for the Custom Projects
 - Cal TF Staff analysis of potential Cal TF/eTRM improvements for Custom.

Goal 7 Metrics

Manage the Cal TF and
Cal TF PAC

- Conduct at least ten TF meetings
 - Relunched monthly TF meetings in June 2022
- Conduct four PAC meetings; ad hoc meetings as needed
 - Relunched PAC meetings in June 2022; hosted 5 PAC meetings focused on Custom initiative and Business Planning
- Conduct additional subcommittee meetings
 - Deemed Measure Property Data Subcommittee
 - Custom Subcommittee
- Review and Discuss Cal TF Governance Model, current practice
 - Moved item to 2023 BP to coordinate with CEDARS/CET Governance
- RFQ Conducted for new members
 - Completed RFQ in June 2022; added 13 new Cal TF members; hosted New Member Orientation
- Maintain Cal TF website and update and post all materials
 - Completed
- Finalize the 2023 Cal TF Business Plan and budget
 - PAC and TF provided feedback on draft plans
 - PAC affirmed [2023 Business Plan](#) on 12/5/2022

RFQ for New Members

25

- **36** total TF members
 - **12** new members
 - **24** returning members
- Highly qualified new members
 - **18 years** average years of EE experience
 - **10 years** average years of experience with collaboratives
 - **10** professional engineers



Adan Rosillo
PG&E



Anders "Andy" Danryd
SCG



Andres Fergadiotti
SCE



Arash Kialashaki
PG&E



Briana Rogers
AESC



David Chan
Enovity/Veolia



Denis Livchak
Synergy Energy



Jay Bhakta
SCE



King Lee
CLEARResult



Kristin Heinemeier
Frontier Energy



Lake Casco
TRC



Myrna Dayan
Cascade



Roger Baker
Independent Consultant

2/22/2023

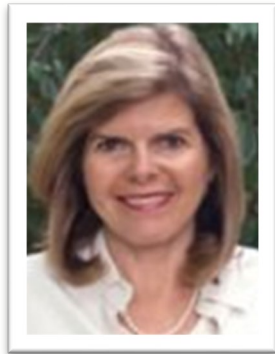
New Cal TF Subcommittees

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- Deemed Measure Property Data Subcommittee
 - Objective: The Deemed Measure Property subcommittee gathers a diverse stakeholders group (incl. deemed PA teams, implementers, evaluators, the Ex Ante Review team, and Cal TF Members) to 1) create a statewide process that would result in stakeholder reviewed Deemed Measure Property Data, 2) establish conventions when defining measure-specific eligibility and exclusion rules as well as site-specific data requirements, and 3) establish the mechanisms for hosting and managing this data within the eTRM.
 - Managed by Ayad.Al-Shaikh@futee.biz
- Custom Subcommittee
 - Objective: The purpose of the Custom Subcommittee is to 1) develop standard savings estimation methods, calculation tools, and data requirements for select custom measures, 2) develop a statewide naming convention for custom measures, and 3) to provide input on Cal TF Staff analysis of how existing eTRM tools can be used to standardize and streamline custom projects.
 - Managed by Arlis.Reynolds@futee.biz

Cal TF Staff

27



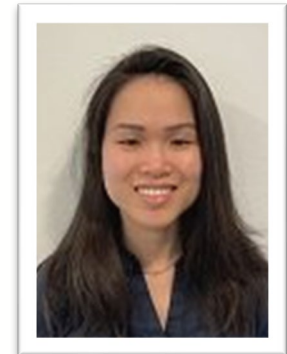
Annette Beitel
Chicago, IL



Ayad Al-Shaikh
Half Moon Bay, CA



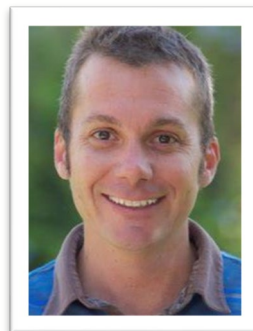
Tomas Torres-Garcia
San Bernardino, CA



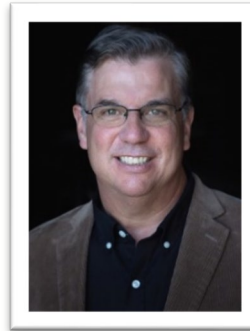
Chau Nguyen
Placentia, CA



Arlis Reynolds
Costa Mesa, CA



Spencer Sator
Boulder, CO



Daniel May
Chicago, IL



Randy Kwok
San Jose, CA

Looking forward: 2023

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- **Longer term planning** – initiatives span multiple years; strategic initiatives and coordination/collaboration warrant longer term planning for Cal TF
- **Need for new measures** – need to expedite identification, review, and incorporation of new measures
- **Data integration** – there remains significant manual data management and inefficiencies; need better data organizing and system integration
- **System integration and governance** – opportunity/value to coordinate eTRM and CEDARS/CET governance
- **Custom portfolio** – opportunities to leverage Cal TF and eTRM tools and processes for custom stakeholder benefits
- **Communication** – continue to support stakeholders in staying informed and through timely access to data/information

These themes shaped the focus for the [Cal TF 2023 Business Plan](#)

Thank you!

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THANK YOU to the **Cal TF PAC** and **TF members** for your engagement, contributions, ideas analysis, and collaboration throughout 2022!

