Cal TF New Measure Review Process: Proposed 2023 Enhancements

CALIFORNIA
TECHNICAL FORUM

TF PRESENTATION
FEBRUARY 23, 2023

We propose two new enhancements in 2023

1. Cal TF works to proactively “pull” new measure concepts in for consideration

2. Establish a “Rapid Intake” process to evaluate greater volume of prospective new measures

Cal TF "Pull" method of new measure identification

- Seek out measures from sources across the industry, including existing Cal TF stakeholders, incubators and accelerators, national labs, other jurisdictions, industry associations, etc.
- Goal is to proactively fill our pipeline with new measure concepts these entities refer to us
- Existing submission process will also remain in place
  - Measure ideas from all channels will funnel into a single evaluation process

Samples of new measure opportunities (Total of 200+)

- **Existing Cal TF stakeholders**
  - IOUs
  - POUs
  - Implementors
- **ET leaders outside CA**
  - Con Edison
  - ConEd
  - Xcel Energy
  - Duke Energy
- **DOE**
  - ARPA-E
  - National labs
- **CA Research entities**
  - WCEC
  - CalPlug
  - CLTC
- **Accelerators, incubators**
  - IN2 Innovation Incubator
  - Incubatenergy Network
  - LACI
  - CleanTech Open
  - Build Edison
- **EPIC projects**
- **Past & current ETP projects that were not developed**
- **Deemed measures outside CA**
- **Other key industry groups**
  - GSA Green Proving Ground
  - Pecan Street
  - NYSERDA
  - Energy Trust

The pull approach may result in good problem to have

If successful, the "pull" approach to new measure identification will result in an influx of ideas that may strain our current process

Enhancement #2: Standardized rapid intake

- Standardized rapid intake seeks to identify promising new measure candidates/eliminate measures that won't benefit or enhance portfolio
- Cal TF staff will engage in initial scoring of incoming measures
  - SMEs will provide additional guidance, as needed
- Goal is to *efficiently* weed out "non-starter" measure ideas coming in from the cleantech community that could otherwise be a drain on resources in the Measure Screening stage

Current measure development process

STEP 1: SUBMIT MEASURE PROPOSAL FORM

STEP 2: SUBMIT MEASURE DEVELOPMENT / UPDATE PLAN & CAL TF EARLY FEEDBACK

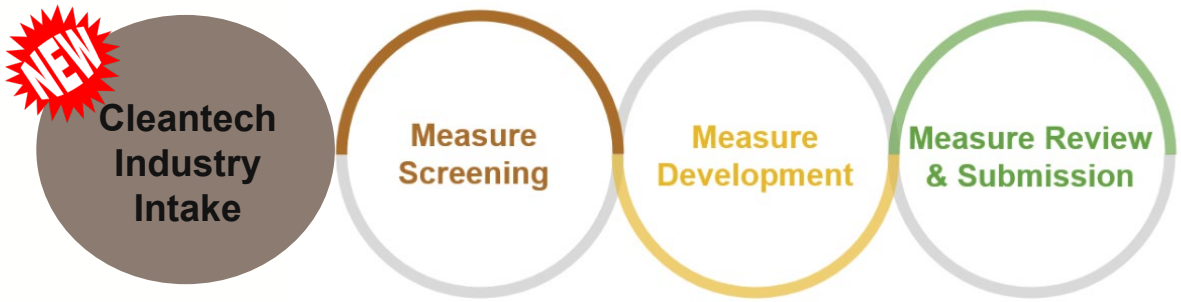
STEP 3: COMPLETE DRAFT MEASURE PACKET

STEP 4: MEASURE REVIEW

STEP 5: CAL TF AFFIRMATION

STEP 6: SUBMIT MEASURE FOR CPUC APPROVAL *(IOUS ONLY)*

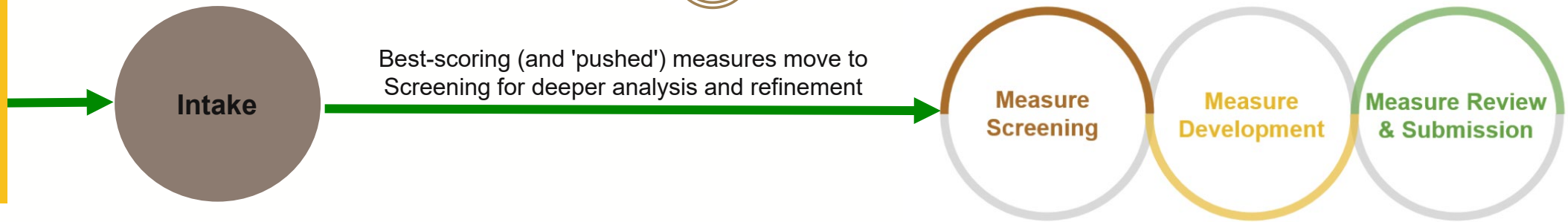
Intake occurs at the *very beginning* of the process



- Proposed addition to stage gate: Intake
- Takes place before the Measure Screening stage
- Intention is to consider ANY and EVERY possible new measure
- All ideas are scored across 12 metrics for a successful measure
- Allows us to jettison least promising measure concepts quickly, efficiently, and transparently

Flow chart for measures exiting the Intake stage

ALL new measure ideas enter through the Intake process



Flow chart for measures exiting the Intake stage

ALL new measure ideas enter through the Intake process

Intake

Best-scoring (and 'pushed') measures move to Screening for deeper analysis and refinement

Measure Screening

Measure Development

Measure Review & Submission

Poorest scorers are discarded (but can be reconsidered in the future, if desired)

Flow chart for measures exiting the Intake stage

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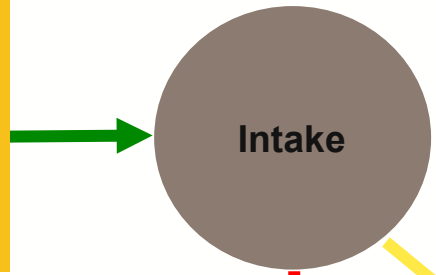

Best-scoring (and 'pushed') measures move to Screening for deeper analysis and refinement

Some measure ideas will be 'maybes' that require additional research or analysis before categorizing

Poorest scorers are discarded (but can be reconsidered in the future, if desired)

Flow chart for measures exiting the Intake stage

ALL new measure ideas enter through the Intake process

Intake

Best-scoring (and 'pushed') measures move to Screening for deeper analysis and refinement

Measure Screening

Measure Development

Measure Review & Submission

After additional analysis

Poorest scorers are discarded (but can be reconsidered in the future, if desired)

Promising potential measures that are not an immediate fit for eTRM may be referred to CalNext/GET, EPIC, or others for follow-up

Sample scorecard snapshot

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	40%				35%				25%					
	Category 1: Portfolio impacts (40% of total score)				Category 2: Customer appeal (35% of total)				Category 3: Measure viability (25% of total)					
0=low 4=high	Annual EE savings potential	Cost effectiveness	Measure life	Meets non-EE goals	Product appeal	Ease of adoption	Affordability	NEBs	eTRM deemed measure readiness	Ease of PA implementation	Product stability	Size of market	Bonus	Total weighted score (of 100)
Weight within category	*40%*	*30%*	*15%*	*15%*	*30%*	*20%*	*30%*	*20%*	*40%*	*30%*	*15%*	*15%*		
Total weight coefficient	*16.00%*	*12.00%*	*6.00%*	*6.00%*	*10.50%*	*7.00%*	*10.50%*	*7.00%*	*10.00%*	*7.50%*	*3.75%*	*3.75%*		
SWNM038 - Res NC, Electrification Package	4	1	3	4	3	3	2	4	3	3	3	4		74.56
SWNM013 - Type B Outdoor LED	3	3	3	0	1	1	4	2	4	4	4	2		67.00
SWNM001 - MFm Common Tank Insulation	2	4	3	0	2	3	4	0	4	4	2	2		66.75
SWNM007 - Cool Roof	2	3	4	1	2	4	2	2	3	3	4	4		66.13
Conditioners and Heat Pumps, Residential	1	3	2	1	4	4	3	1	4	3	4	2		65.88
SWNM030 - Hot Food Holding Bin	2	3	4	1	2	4	1	1	4	4	4	2		64.25
SWNM019 - Clothes Washer Offerings	2	3	3	0	2	3	2	1	4	4	4	4		64.00
SWNM034 - Cooktop, Commercial	1	3	3	1	3	2	1	4	4	4	4	2		63.13
SWNM027 - Occupancy-based Fan Controller, Commercial	2	4	3	0	1	3	4	2	3	2	2	3		62.31
Advanced RTU Controls (i.e. Catalyst)	4	3	2	1	1	2	2	1	3	3	3	3		61.38
SWNM016 - Smart Thermostats	1	2	3	2	3	3	1	3	4	4	4	1		60.69
SWNM004 - Refrigerator Recycling	2	3	3	1	2	3	4	0	2	2	4	4		60.25
SWNM044 - Direct Evaporative Cooler	2	2	3	1	2	2	4	1	3	3	4	2		59.75
SWNM039 - Rotisserie Oven	3	4	3	0	1	2	1	0	4	4	4	1		59.44
SWNM018 - Commercial Behavioral	1	4	0	0	1	4	4	2	3	3	4	3		59.31
SWNM011 - Ducted Mini-Splits	3	2	3	2	1	1	1	1	4	4	4	4		59.25
SWNM003 - Heat Pump Water Heater, Commercial	3	4	3	1	1	1	1	0	4	3	4	3		59.19
SWNM008 - Cool Wall	2	2	4	1	2	4	2	2	2	2	4	4		58.75
SWNM032 - Radiant Conveyor	1	4	3	1	2	3	1	0	4	4	4	1		57.31

Scorecard has 3 categories with 12 metrics

Categories	Metrics
Category 1: Portfolio impacts	• Annual EE savings potential • Cost effectiveness • Measure life • Meets non-EE goals
Category 2: Customer appeal	• Product appeal • Ease of adoption • Affordability • Non-energy benefits (NEBs)
Category 3: Measure viability	• eTRM deemed measure readiness • Ease of PA implementation • Product stability • Size of market

Categories and metrics with weights

Categories	Metrics
Category 1: Portfolio impacts (40% of total score)	• Annual EE savings potential • Cost effectiveness • Measure life • Meets non-EE goals
Category 2: Customer appeal (35% of total)	• Product appeal • Ease of adoption • Affordability • Non-energy benefits (NEBs)
Category 3: Measure viability (25% of total)	• eTRM deemed measure readiness • Ease of PA implementation • Product stability • Size of market

Categories and metrics with weights

Categories	Metrics		Weight within category
Category 1: Portfolio impacts (40% of total score)	Annual EE savings potential	40%	
	Cost effectiveness	30%	
	Measure life	15%	
	Meets non-EE goals	15%	
Category 2: Customer appeal (35% of total)	Product appeal	30%	
	Ease of adoption	20%	
	Affordability	30%	
	Non-energy benefits (NEBs)	20%	
Category 3: Measure viability (25% of total)	eTRM deemed measure readiness	40%	
	Ease of PA implementation	30%	
	Product stability	15%	
	Size of market	15%	

Discussion

- Enhancement #1: CaI TF “pulling” new measures
  - Do these seem like the right types of originations to go to?
  - Additions/suggestions?
  - How can we best develop a communication strategy directed to them?
    - Ways to automate?
    - Can we employ advanced tools like ChatGPT, AI algorithms, etc.?
    - Frequency of contact? Monthly? Quarterly? Depends on level of activity?
  - What is go-to-market strategy of 'pull' targets; are they willing to work with utilities? Why/why not?

Discussion

- Enhancement #2: Rapid intake criteria
  - Can we consolidate any categories/streamline?
  - Do the categories seem reasonable?
  - Do the subcategories seem reasonable?
  - Overall approach to weighting and scoring?
  - Who should be on scoring teams (can handle time commitment)?
  - Other quick and dirty scoring methods besides Delphi and simple 0-4 scores?

Definitions: Category 1 – Portfolio Impacts

Annual EE savings potential	Annual total savings potential to the portfolio UPON MEASURE MATURITY - no need for a detailed analysis; this score is based on how it would *roughly* compare to other measures in the current portfolio. If this is a dual fuel measure, the score is combined gas and electric savings.
Cost effectiveness	No need for a detailed analysis; this score is based on how it would *roughly* compare to other measures in the current portfolio.
Measure life	This has a small scoring weight because, while important for developing a new measure, it typically means that potential for new installments in a given year is very low (e.g., since windows have a long measure life, very few new windows get installed every year). This translates to a slow rate for measure impact among all customers or full market transformation. (Note: In totally novel technologies, there isn't necessarily any correlation between measure life and speed of uptake -- aerosolized building shell sealing is one example).
Meets non-EE goals	This has a small scoring weight because this doesn't always have a major impact on go/no-go decision to launch a measure, but it is important to include in scoring for overall awareness among stakeholders and transparency. Goals can include DR compatibility, DER enabling, electrification/decarbonization, equity targets, enhanced utility brand perception, etc.

Scoring Guidance: Category 1 – Portfolio Impacts

Annual EE savings potential	4 = Potential to be top performing measure in portfolio 3 = Potential to be a good measure, though not likely to be a top performer 2 = "Average" gross annual savings compared with other measures in the same sector and fuel type 1 = Not likely to meet the savings of an "average" measure 0 = Minimal savings
Cost effectiveness	4 = Potential to be top performing measure in portfolio 3 = Potential to be a good measure, though not likely to be a top performer 2 = "Average" cost effectiveness compared with other measures in the same sector and fuel type 1 = Not likely to meet the cost effectiveness of an "average" measure 0 = Not likely to be a viable cost-effective measure
Measure life	4 = 20+ years 3 = 11-19 years 2 = 6-10 years 1 = 2-5 years 0 = ≤2 years
Meets non-EE utility goals	4 = Four or more clear non-EE goals 3 = Three clear non-EE goals 2 = Two clear non-EE goals 1 = One clear non-EE goals 0 = Meets no additional goals beyond energy savings

Definitions: Category 2 – Customer Appeal

Product appeal	How likely is this product or measure likely to be adopted by customers? Question to ask when considering: Does this product fill a clear market need and/or perform better than incumbent products? The degree to which the answer to this question is 'yes' determines score. This also gives an indication of novelty of product and the likeliness that a new measure has the potential to cannibalize existing measures, as something with a clear new market niche is going to have more market appeal and open space in the portfolio than a new product in an already crowded marketplace.
Ease of adoption	Three components to this: 1) Does this require extensive effort for the customer work to install? 2) Does this require work on the building/home or disrupt commercial activities? 3) Is there significant cost associated with installation? (This is above and beyond purchase price of the product itself--and may include things like wiring and panel upgrades associated with a heat pump or EV.)
Affordability	This metric only covers product cost; installation cost (when relevant) is included in the 'Ease of adoption' category.
Non-energy benefits	NEBs can include other resource impacts (e.g., water savings) or non-resource impacts such as higher worker productivity, safety, comfort, increased industrial output, health or IAQ benefits, increased convenience, etc.

Scoring Guidance: Category 2 – Customer Appeal

Product appeal	4 = This is the next iPhone! 3 = Smart thermostat-level of appeal 2 = Energy Star refrigerator appeal (customers might care a little about energy when making a decision) 1 = Too esoteric or doesn't have a lot of appeal (thin triple pane windows or drain water heat recovery in homes) 0 = This is the next CFL (zero or net negative customer appeal other than energy savings)
Ease of adoption	4 = Plug and play with minimal time or technical expertise needed (LED lightbulb, Energy Star refrigerator) 3 = Modest effort or cost, but most people can self-install and no major building modifications are required (smart thermostat) 2 = Moderate effort or light building modifications, a professional is often needed (commercial lighting controls) 1 = Significant effort or moderate building modifications, professional is needed (residential whole-home ASHP retrofit) 0 = Extensive building modifications, extensive technical expertise, and/or high installation costs is needed (window replacement or some industrial machinery replacements)
Affordability	4 = Significantly cheaper than incumbent technologies 3 = Somewhat cheaper than incumbent technologies 2 = About the same as incumbent technologies 1 = Slightly more expensive than incumbent technologies 0 = Significantly more expensive than incumbent technologies
NEBs	4 = Four or more clear NEBs 3 = Three clear NEBs 2 = Two clear NEBs 1 = One clear NEB 0 = Zero NEBs

Definitions: Category 3 – Measure Viability

eTRM deemed measure readiness	This has two components: 1) Is this appropriate and is there a clear opening in the eTRM or in PA for this as a new deemed measure? 2) How much work will it require to develop this measure?
Ease of PA implementation	This is an estimate on how good a match a given concept is for programs: Is there a clear way to conduct M&V and analyze cost effectiveness? Are there going to be regulatory issues with launching this offering? Is this such a radically different product that utilities will have difficulty launching and managing an offering? Does the PA have the staff expertise or resources necessary? Are contractors and trade allies able to effectively implement?
Product stability	This has a small scoring weight because even massively successful markets, like smart thermostats, start out small. This is really just a risk identification score that helps flag new entrepreneurs who may not yet be stable, technologies that may not be immature, or cautions against going with established companies who may be the only ones offering a new technology but may pull it from the marketplace if it doesn't gain traction.
Size of market	This has a small scoring weight because overall savings are most important, whether that comes from 10,000 customers or 5. However, there is more volatility by offering products to a highly narrow subset of customers, compared with those that have wide appeal, so it's still important to acknowledge. This is another risk identification category.

Scoring Guidance: Category 3 – Measure Viability

eTRM deemed measure readiness	4 = Clear and easy path to developing deemed measure in eTRM and can be offered by PAs as a prescriptive offering; as turnkey as a new measure development is likely to be 3 = Some additional research or minor piloting is likely required but looks like an overall good fit for eTRM and/or prescriptive rebate 2 = Measure will likely require significant piloting, research, or additional understanding to be included in eTRM and/or may be difficult to offer as a prescriptive incentive 1 = Measure will require a lot more than usual in terms of work/piloting/new understanding to make it into eTRM and/or will be very difficult to develop into a prescriptive offering (though it may still be possible) 0 = Measure is unlikely to ever make it into eTRM or be offered as anything besides custom
Ease of PA implementation	4 = Measure execution should be straightforward with no significant obstacles 3 = One or two obstacles but these are likely to be minor; path forward is still mostly assured 2 = Measure execution will have one or two fairly significant obstacles; path forward is likely but not assured 1 = Measure has one or more major obstacles; path forward is possible but there is significant risk 0 = Measure has one or more major obstacles that would make effective execution difficult to impossible
Product stability	4 = Mature technology type with many vendors 2 = Market still emerging but stable with at least a few vendors 0 = Market is new or non-existent and only 1-2 vendors
Size of market	4 = Universally used among all major customer segments (insulation measures, common electronics) 3 = Appears in most major customer segments or universal in specific major segments (RTUs for commercial buildings, residential appliances) 2 = Common but not universal in some major customer segments (Window ACs, EMS) 1 = Not very common, but not totally shocking to see among some customers (EV fleets, residential dehumidifiers) 0 = Extremely narrow, specialized customer subset (specialty industrial machinery or some types of home medical care equipment)

Questions?

END OF PRIMARY PRESENTATION

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Pull example: eTRM gap analysis v/s 8 leading states

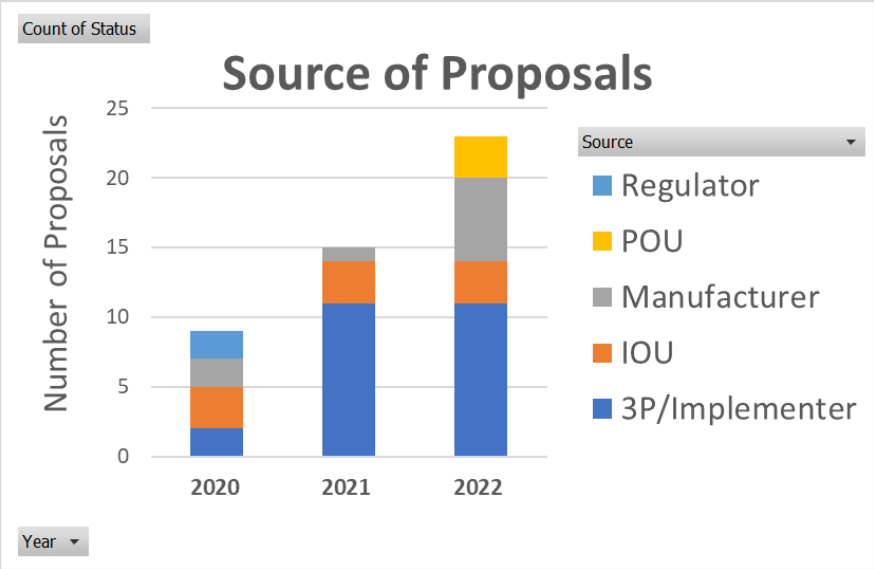
- Looked at eTRM compared with 8 other jurisdictions:
  - MA, AZ, IL, AR, RTF, NY, TX, VT
  - Of 156 measures in eTRM, roughly 20 measures totally unique to CA
    - (Not an exact science because not every measure is a 1:1 match)
    - Found 264 deemed measures that exist elsewhere that are not in eTRM
    - Not all are a great match (codes, climate, regulatory environment, etc.). But this is where an effective intake scoring system can help us quickly identify most v/s least promising candidates.
  - Of current proposed measures in CA, ~1/2 have been adopted elsewhere
  - Of inactive measures in CA, ~1/3 are in place elsewhere (lighting not included)

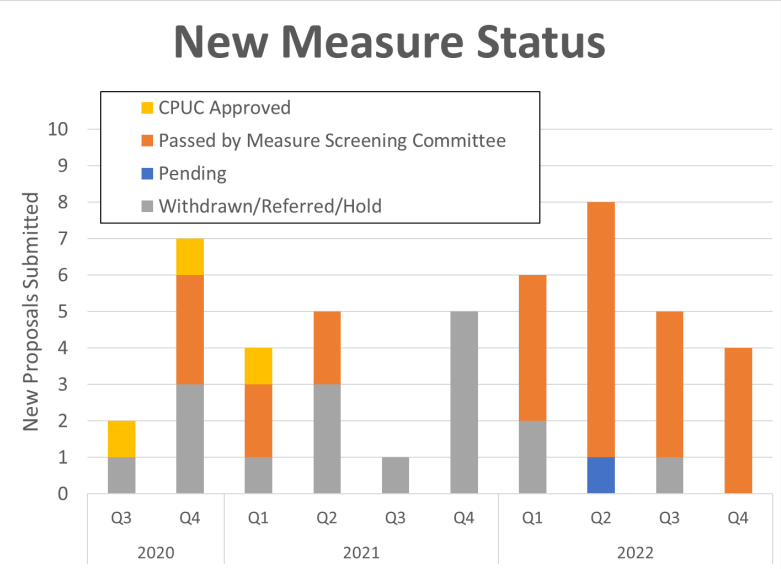
Pull example: eTRM gap analysis v/s 8 leading states

- 71 residential measures; common examples include:
  - GSHPs
  - Low-e storm windows
  - Dehumidifiers
  - Energy Star EVSE
  - Downstream refrigerator recycling
  - Novel insulation (i.e. joist)
  - Thin triple windows
  - WH insulation (not just pipes)
  - ERV
- 193 C&I measures; common examples include:
  - Walk-in strip curtains
  - Display case night covers (sunset)
  - Indirect water heaters
  - Boiler reset controls
  - Guest room energy management (sunset)
  - Compressed air system lossless condensate drains

Existing Cal TF new measure review process

- Existing measure review process relies on “Push” approach
- Relies on a limited pool of contributors (Cal TF ‘insiders’)
  - Leaves savings on the table by not being exhaustive in pursuit of new opportunities
- Results to date:





Why evolve the measure review process?

California portfolios need new measures to achieve the state's energy savings and decarbonization goals.

The utilities have been asking for ways to develop more measures faster.

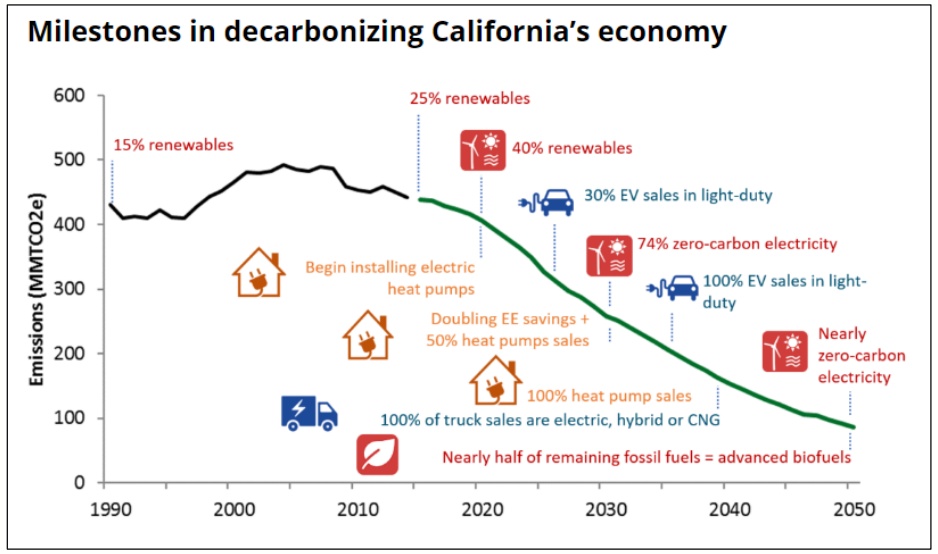


Image source: E3

Cal TF proposed process v/s other related efforts

- Cal TF vs. CalNEXT and GET
  - Cal TF process for identifying measures that can be developed in eTRM
  - CalNEXT process for identifying further studies
    - BUT note that an eTRM measure candidate STILL may be subject to further study (in Cal TF, through EM&V, etc.)

- Cal TF vs. EPIC
  - Cal TF is for measures that can be “market ready”
  - EPIC for “pre-commercial” technologies
    - BUT EPIC projects may be “feeder” for Cal TF New Measure process