PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Item #6 (Rev. 2)
AGENDA ID #24527
ENERGY DIVISION **RESOLUTION E-5474**
November 19, 2026

R E S O L U T I O N

Resolution E-5474. Approval of the Database for Energy-Efficient Resources updates for Program Year 2028-2029 (DEER2028) and revised version for Program Years 2026 and 2027 (DEER2026).

PROPOSED OUTCOME:

- DEER2028 Update (effective January 1, 2028)
- Revise DEER2026 Update (effective January 1, 2026)

SAFETY CONSIDERATIONS:

- There are no safety considerations associated with this resolution.

ESTIMATED COST:

- There are no costs associated with this resolution.

By Energy Division's own motion in Compliance with D.15-10-028.

SUMMARY

This Resolution approves updates to the Database for Energy-Efficient Resources (DEER) for program year (PY) 2028 and a revised version of DEER for PY2026 and PY2027, in compliance with D.15-10-028, D.21-05-031,[1] and Resolutions E-4818, E-5152, E-5221, and E-5350. This update also directs forward-looking research and addresses

[1] https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&docid=385864616

significant transitions for the DEER and measure package system maintenance and operation.

All updated DEER assumptions, methods, values and supporting documentation are available on the DEER Module on the California Energy Data and Reporting System (CEDARS).[2] ~~Attachment A provides the technical description of the proposed changes.~~

BACKGROUND

The Database for Energy Efficient Resources (DEER) contains information on energy-efficient technologies and measures. DEER provides estimates of the typical energy-savings potential for these technologies in residential and nonresidential applications. DEER is used by California Energy Efficiency (EE) Program Administrators (PAs), private sector implementers, and the EE industry across the country to develop and design energy efficiency programs.

The DEER database has a 30-year history, starting in the 1990s under the California Energy Commission (CEC) where responsibility for developing energy efficiency measure parameters was delegated to a broad stakeholder coalition. With the 2006-08 energy-efficiency (EE) portfolio cycle, the CPUC staff assumed responsibility for the DEER.

Relevant Regulatory Background

The California Public Utilities Commission (Commission or CPUC) Decision D.15-10-028, Ordering Paragraph 17 states: "Commission staff shall propose changes to the Database of Energy Efficient Resources once annually via Resolution, with the associated comment/protest period provided by General Order 96-B. However, Commission staff may make changes at any time without a Resolution to fix errors or to change documentation." D.15-10-028 retains the direction from D.12-05-015 that DEER values be updated for consistency with existing and updated state and federal codes and standards while incorporating these changes into the DEER update.[3] D.21-05-031 retains previous direction regarding CPUC staff latitude in updating

[2] https://cedars.cpuc.ca.gov/deer-resources/

[3] D.15-10-28, at 80, states "D.12-05-015 allowed additional mid-cycle changes if there are new state and federal codes and standards that affect DEER values. Specifically, the decision stated in Conclusion of Law 84: 'We generally agree with parties' request that ex ante values should be adopted and held constant throughout the portfolio cycle. However, mid-cycle updates of ex ante values are warranted if newly adopted codes or standards take effect during the cycle.'"

DEER.[4] D.21-05-031 also adopts and Resolution E-5152 enacted a biennial update schedule for DEER, eliminates the DEER and non-DEER distinction for EE measures, and redefines the scope of the DEER resolution to:

a) lock down the version of ex ante (savings estimates before installation) EE values used for planning and claims; b) direct research to inform future DEER updates; and c) manage deemed ex ante processes.

Resolution E-5082 initiated the transition of existing DEER and measure package systems to a software platform jointly co-funded by the IOUs, called the Electronic Technical Resource Manual (eTRM),[5] and conferred conditional designation "data source of record" to the eTRM.[6] Resolution E-5082 also outlined a schedule and benchmarks for the phased transition from DEER to the eTRM as the new "data source of record" for the typical deemed energy savings values for energy efficiency measures.

In addition, Resolution E-4952[7] (DEER2020), adopted on October 11, 2018, clarified and specified issues in Resolution E-4818,[8] adopted on March 2, 2017. Among other things, these resolutions ordered many significant changes, including guidance on the peak demand period, building prototypes, and measure analysis software control (MASControl3) updates.

Timing and Applicability of DEER Updates

DEER updates flow into the EE portfolio development process by providing new deemed energy savings estimates and other EE measure parameter updates for program design. New energy savings estimates, and underlying assumptions, methods, and values, inform the direction of energy efficiency programs. These allow program administrators to shift program eligibility requirements and incentive support mechanisms to deliver the most reliable, cost-effective energy savings. DEER updates may also reflect new market conditions. The PAs are required to ensure new assumptions and values are incorporated into the next cycle of EE programs by considering a) when the next update is planned, b) the fundamental assumptions for the update, and c) whether shifts to their programs to capture cost-effective savings are needed. Updates to DEER methods apply to EE technical measure package

[4] D.15-10-28, at 80, quotes from D.12-05-015: "Conclusion of Law 80 states: 'Our Staff should have significant latitude in performing DEER and other policy oversight functions and, absent specific directives to the contrary, should not be required to consult with or otherwise utilize any other groups to perform this work.'"

[5] https://www.caetrm.com

[6] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M346/K161/346161639.PDF

[7] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M232/K459/232459122.PDF

[8] https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M179/K264/179264220.PDF

development and custom project energy savings estimates as well as program delivery decisions.

The terminology "DEERxxxx" is used to designate the version of updated parameters and is independent of the conversion to using eTRM. The year shown reflects the program year that a given update takes effect.

Scoping Document and Updates for DEER2028 and Revised DEER2026

On May 27, 2026, the CPUC Energy Division released for public comment a Scoping Document outlining the proposed issues and updates to be addressed in this DEER resolution. The Scoping Document described the various issues that may be considered in this resolution and the rationale for why these issues need to be addressed.

Comments reviewed for this working draft were submitted by California Technical Forum (Cal TF) staff, Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), Southern California Gas Company (SoCalGas), San Diego Gas & Electric Company (SDG&E), Northern Rural Energy Network (NREN), Southern California Regional Energy Network (SoCalREN), and Willdan.

Across those comments, the topics raised most frequently involved: (1) Avoided Cost Calculator (ACC) and Cost Effectiveness Tool (CET) transition timing and notification; (2) weather files, peak days, load shapes, and EnergyPlus implementation; (3) the proposed archive or deferral treatment for measure packages; (4) water-heating calculator transitions and Evaluation, Measurement, and Verification (EM&V) timing; (5) timeline and review process concerns; and (6) appendix corrections and implementation details.

In consideration of the comments to the Scoping Document, the topic areas addressed in this DEER update are summarized in Table 1. The guidance for these updates is described in the Discussion section that follows. Complete documentation and supporting material on the updated assumptions and methods and updated DEER elements such as database tables, calculators, and web pages are available at the DEER Module on CEDARS.[9]

[9] Supporting material is at https://cedars.cpuc.ca.gov/deer-resources/tools/supporting-files/resource/2/history/

Table 1. DEER2028 Update

Priority	Effort	DEER Version	Update Topic Area	Sector		Measure/Tech Group					Forecasted Value				
				Residential	Non-Res	Lighting	HVAC*	DWH*	Envelope	Plug/Process	UES*	NTG*	EUL*	Measure Cost	Other
Management of DEER Processes															
!!!!	$$$	2028	A. Updates to eTRM	X	X	X	X	X	X	X	X	X	X	X	X
!!!!	$$$	2028	B. DEER System and Measure Package Updates	X	X	X	X	X	X	X	X	X	X	X	X
!!!!	$$$	2030	C. DEER 2030 Update and Measure Package Submission/Review Timeline	X	X	X	X	X	X	X					
!!!!	$$$	2026	D. Mid-Cycle Adjustments to the Locked Ex-Ante Values	X	X		X	X			X			X	X
!!!	$$	2028	E. Updates to DEER Support Table Values	X	X	X	X	X	X	X		X	X		X
Research Needs and Ongoing Updates															
!!!	$$	2028	F. EnergyPlus Prototypes	X	X		X	X	X	X	X				X
!!	$$	2028	G. Variable Capacity Heat Pump Performance Curves		X		X				X				
Measure Adoption															
!!!!	$$$	2028	H. Guidance from EM&V Review	X	X			X			X	X		X	X

*HVAC=Heating, Ventilation, Air Conditioning; DWH=Domestic Water Heating; NTG=Net-to-Gross; UES=Unit Energy Savings; EUL=Effective Useful Life

DISCUSSION

Pursuant to D.15-10-028, the Energy Division published a DEER Update Scoping Document on May 27, 2026. The list of topic areas carried forward into this draft resolution is based on the scoping document and on stakeholder comments received through June 10, 2026. The discussion below summarizes the principal topics.

Management of DEER Processes

A. Updates to eTRM

Effective Program Year: 2028. California's statewide electronic Technical Reference Manual (eTRM) will continue as the Official Source of California Energy Efficiency Measure Data[10] and the sole source of energy efficiency measure package development, submittal, review, and publishing.

[10] https://www.caetrm.com/shared-data/

A.1. eTRM Funding

Effective Program Year: 2028. The Investor-Owned Utilities (IOUs) should continue to fund CalTF and eTRM from program or evaluation budgets. Consistent with Resolution E-5350, IOUs should continue to identify those funding sources in their Mid-Cycle Advice Letter filings.

A.2. eTRM Source Code Documentation

Effective Program Year: 2028. The DEER2026 resolution required eTRM source code to be documented and version-controlled using a Git[11] platform, subject to an appropriate transparency and security assessment. CalTF reports that Git-based source control was completed with eTRM Release 3.0 through a private repository managed by CalTF staff, with CPUC staff access available as needed.

A.3. Measure Lifecycle Management (MLM) in DEER

Effective Program Year: 2028. Measure Lifecycle Management (MLM) is now available in production through the eTRM Stats area[12] and can be used to support DEER2028 planning and scheduling. The MLM tracks measure identification information and key update drivers, including savings methodology, weather file, and future updates for code, Industry Standard Practice (ISP), EUL, NTG, and cost inputs. Stakeholders are encouraged to leverage MLM to support early identification of research needs, prioritization of measure package updates, and better sequencing of review timelines to avoid compressed review and comment periods.

B. DEER System and Measure Package Updates

This section describes any changes to policies that affect the eTRM and measure packages.

B.1. Avoided Cost Calculator (ACC)

Effective Program Year: 2028. The ACC values are inputs to Refrigerant Avoided Cost Calculator and Fuel Substitution Calculator (RACC-FSC), the Cost Effectiveness Tool (CET), and are used in other Commission processes. CET cost-effectiveness results are used in the current Viable Electric Alternative (VEA) implementation process. Because the current VEA implementation depends in part on cost-effectiveness results, the applicable VEA flags may change when updated ACC values are incorporated into

[11] Git is a distributed version control system that tracks changes in any set of computer files, usually used for computer programming.
[12] https://www.caetrm.com/stats/

CET. The 2026 ACC is expected to be finalized in Q4 2026, which is after the submittal date for most PY2028 measure packages.

PY2028 measure packages submitted before the 2026 ACC is approved by the CPUC and incorporated into the Cost Effectiveness Tool (CET) can use the ACC values existing at the time of measure package submission. The CET will be updated within 60 days after CPUC approval of the updated 2026 ACC.

B.2. Refrigerant Avoided Cost Calculator and Fuel Substitution Calculator (RACC-FSC)

Effective Program Year: 2028. For PY2028 measure packages, including both new measure packages and updates to existing measure packages, measure package developers should use RACC-FSC_v3.2.[13] The completed RACC-FSC shall be provided as an addendum in the eTRM in accordance with the RACC-FSC Technical Guidance Document.

RACC-FSC_v3.2 includes updated HVAC refrigerant charge assumptions based on the May 15, 2026, CalNEXT residential[14] and commercial[15] refrigerant charge studies. These updates revise default refrigerant types and charge values to better reflect current market conditions, including increased use of low-global warming potential (GWP) refrigerants such as R-32 and R-454B. The updates are implemented primarily through revised lookup tables and default device assumptions within the tool. Measure package developers may continue to override default values and model alternative refrigerants, including legacy R-410A, where appropriate for specific measure cases or existing-equipment baselines.

The 2026 ACC update is expected after most PY2028 measure packages will already have been submitted and approved. CPUC staff will allow but not require previously submitted measure packages to rerun or resubmit the RACC-FSC to reflect updated ACC values. Any mid-cycle measure package submission that requires use of the RACC-FSC shall use the version of the workbook that is current at the time of submission. This preserves a stable submittal package while avoiding unnecessary resubmittal burden.

[13] https://cedars.cpuc.ca.gov/deer-resources/tools/supporting-files/resource/21/history/
[14] https://calnext.com/wp-content/uploads/2026/06/ET25SWE0036_Improving-HVAC-Refrigerant-Charge-Value-Estimates-for-Residential-Systems_Final-Report.pdf
[15] https://calnext.com/wp-content/uploads/2026/06/ET25SWE0037_Improving-HVAC-Refrigerant-Charge-Value-Estimates-for-Commercial-Systems_Final-Report.pdf

B.3. Lighting Baseline Updates

Effective Program Year: 2028. Most lighting applications continue to be handled through the custom pathway, with only limited statewide deemed lighting coverage at this time. Current deemed exceptions include the indoor horticultural lighting measure package and very specific general-lighting offerings in a statewide LED lighting package, including UL Type B mogul screw-base HID (High Intensity Discharge) replacement lamps for outdoor pole/arm-mounted area and roadway luminaires and outdoor pole/arm-mounted decorative luminaires.

Consistent with Resolution E-5350, general lighting measure package baselines shall conform to the most up-to-date approved version of the Modified Lighting Calculator (MLC),[16] and any new or mid-cycle lighting submissions shall use the current approved standard practice values. Indoor horticultural lighting baselines are developed separately using the CPUC-approved indoor horticultural lighting Industry Standard Practice methodology and are published in the applicable measure package and supporting documentation.

B.4. Weather Files

Effective Program Year: 2028. For DEER2028, program administrators should use the 2025 California climate-zone weather basis (CZ2025) for modeled and other weather-dependent measures. The CZ2025 weather data are the CEC's current climate-zone weather files for the 2025 Energy Code and are publicly available through California Measurement Advisory Council (CALMAC).[17] CALMAC describes CZ2025 as a set of 133 typical-year weather files developed from the 2000–2020 historical record. The CEC states that buildings with permit applications on or after January 1, 2026, must comply with the 2025 Energy Code, and its Reference Appendices include the weather data and related supporting information used for compliance.

To support consistent DEER modeling, the CPUC Ex Ante Review team posted the CZ2025 DEER Weather Files on CEDARS on March 9, 2026.[18] The CEDARS package provides one representative station for each of California's 16 climate zones and includes hourly weather files (.epw), design-day files (.ddy), and auxiliary summary files (.stat, .BINM, and .FIN4). Note that CZ04 and CZ06 use the stations specified in the 2025 Energy Code Accounting Methodology—Paso Robles Municipal Airport for climate zone 04 and Los Angeles International Airport / LAX for climate zone 06—while

[16] Please reference the "Standard Practice Efficacy" values in the approved Modified Lighting Calculator (MLC), Version 13.2.1 (LOCKED) Rev. 01.23.2026 posted on February 9, 2026: https://cedars.cpuc.ca.gov/deer-resources/tools/supporting-files/resource/8/history/

[17] https://www.calmac.org/weather.asp

[18] https://cedars.cpuc.ca.gov/deer-resources/tools/energy-plus/resource/28/history/

the remaining climate zones use the representative stations identified in the 2025 Title 24 Reference Appendices. Staff sourced the weather file package posted on CEDARS from CALMAC's CZ2025 dataset and the California_CTZ_2025 design-day files which align with the weather set used in the CEC compliance software (CBECC) for the 2025 Energy Code.

For DEER2028, measure package developers using EnergyPlus prototypes, other DEER-approved building simulation methods, or any other engineering model, calculator, or spreadsheet-based method developed for weather-dependent measures should use the CZ2025 weather basis for new modeled measure packages and for updates to existing modeled measure packages, unless CPUC staff directs otherwise. CPUC staff posted the same weather files on the GitHub for use in PY2028-29 measure updates.[19] Measure package documentation shall identify the specific weather files or derived weather inputs used in the modeling workflow so that modeled savings, peak demand, and other weather-sensitive results can be traced to a consistent weather basis.

This weather-data update affects downstream DEER values that depend on climate-zone weather, including peak-period day definitions, exterior-lighting coincidence demand factors, and the incoming cold-water temperature ("mains" temperature) used in water-heater modeling.

B.5. DEER Peak 3-Day Period Update

Effective Program Year: 2028. For DEER2028, program administrators should use the updated DEER peak 3-day periods based on the CZ2025 DEER Peak 3-Day Period Lookup Table (peakperspec_CZ2025.csv) posted on CEDARS[20] and DEER GitHub page.[21] The lookup table identifies the peak 3-weekday period for each of California's 16 climate zones for use with CZ2025 weather and DEER peak-day analysis. The lookup table is based on the CZ2025 EPW weather files, uses a 2009 calendar with all ten observed holidays excluded, evaluates consecutive 3-weekday windows in June through September beginning at midnight, and selects the period with the highest equal-weight index consisting of: (1) the peak dry-bulb temperature over the 72-hour period, (2) the 72-hour average dry-bulb temperature, and (3) the average dry-bulb temperature during the noon-to-6 p.m. period over the three days. In the lookup table, the DEER-defined six-hour period is represented by hours 12 through 17.[22]

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[19] https://github.com/sound-data/DEER-Prototypes-EnergyPlus/tree/main/weather
[20] https://cedars.cpuc.ca.gov/deer-resources/tools/energy-plus/resource/29/history/
[21] https://github.com/sound-data/DEER-Prototypes-EnergyPlus/blob/main/scripts/energy%20savings/peakperspec.csv
[22] Hour 18 is not included because the calculation uses six hourly values.

The updated CZ2025 peak days supersede the older CZ2022 peak-day start dates reflected in DEER2026. Accordingly, measure package developers using EnergyPlus prototypes, other DEER-approved building simulation methods, or other engineering methods should use the updated CZ2025 peak 3-day periods when calculating annual peak demand, unless CPUC staff instructs otherwise. Any derived peak-demand inputs or methods that depend on the DEER peak-period definition should also be refreshed to align with the CZ2025 weather basis.

B.6. DEER Electric Load Shapes

Effective Program Year: 2028. For electric impacts from PY2028 measure packages modeled using the DEER EnergyPlus prototypes, the DEER Commercial and Multifamily Water Heater Calculator, or the DEER Water Heater Calculator, Version 6.0, PAs should upload the hourly load shapes generated by the applicable modeling tool to the load-shape library on CEDARS. This section does not establish a new hourly gas-load-shape requirement. Gas load-shape treatment may continue under existing approved methods unless CPUC staff directs otherwise. Measures that are not modeled may continue to use existing impact-profile-based approaches, including an existing Electric Impact Profile ID where appropriate, or another CPUC-approved load-shape method.

The CEDARS load shape library will enable the uploading and processing of hourly load shapes for the first baseline, second baseline, and measure cases associated with a given measure package. For DEER2028, the CEDARS workflow is expected to rely on hourly unitized, consumption-based 8760 load shapes that can be mapped to measure package permutations using identifiers such as building type, building location, building vintage, HVAC type, TechGroup, TechType, and TechID so that related cost-effectiveness outputs can be produced for the measure package.

For measures modeled using DEER EnergyPlus prototypes, CPUC staff has updated the DEER-Prototypes-EnergyPlus post-processing workflow to automatically produce unitized, consumption-based 8760 CSV files ready for upload to CEDARS. This workflow also generates HTML outputs to facilitate review of TechID-based load shapes by building type. The DEER Commercial and Multifamily Water Heater Calculator and the DEER Water Heater Calculator, Version 6.0, also generate hourly water-heating load shapes for upload to CEDARS and mapping to applicable measure package permutations. These workflows support more detailed review of hourly consumption and savings profiles while minimizing additional processing needed to generate quarterly avoided costs and related cost-effectiveness outputs.

For measures that are not modeled, acceptable methods may include existing impact-profile-based approaches, an existing Electric Impact Profile ID where appropriate,

spreadsheet-based hourly calculations, measured data, or another CPUC-approved method. The applicability and appropriateness of the proposed load-shape method for a given measure package will be evaluated as part of Ex Ante Review together with the submitted measure package. Where hourly load shapes are uploaded to CEDARS, measure package documentation should identify the source year, normalization basis, mapping to permutations, and rationale for the selected method.

CPUC staff will allow the use of the load shape library for new measures submitted before PY2028 to accommodate mid-cycle measure package submissions including load-shifting measure packages.

CPUC staff will evaluate and authorize alternative proposed load shape methods as appropriate.

B.7. Viable Electric Alternative (VEA)

Decision D.23-04-035 limits eligibility for ratepayer-funded energy efficiency incentives for non-exempt, non-cost-effective gas measures in the residential and commercial New Construction portions of the resource acquisition and market support segments. This restriction applies to new construction with no existing gas line and, under the applicable conditions established in the Decision, where an existing gas line is present and gas usage will materially increase.

Decision D.23-04-035 also authorized CPUC staff to develop technical guidance for identifying viable electric alternatives. Through the VEA Measure Package Working Group, a process was developed to identify and align potential electric alternatives with applicable gas measure offerings and to use CET cost-effectiveness results at the measure-package permutation level to assign a binary VEA flag in the eTRM. The flag is set to zero or one based on whether the applicable cost-effectiveness criterion is met after the relevant measure comparison and other VEA criteria are addressed.

This existing flagging process is distinct from any additional VEA eligibility requirements that may apply in the future to retrofit, custom, normalized metered energy consumption, or other applications. Any such additional requirements, effective dates, transition provisions, or related measure-package changes will be implemented pursuant to the applicable Commission decision, technical guidance, or other Commission direction.

B.8. New DEER Commercial and Multifamily Water Heater Calculator

Effective Program Year: 2028. CPUC staff and the Ex Ante Review team have developed a new Excel-based, physics-based DEER Commercial and Multifamily Water Heater Calculator intended for use across commercial and multifamily water-heating measure

packages, including heat pump and gas water heating applications.[23] The calculator is intended to provide a more transparent and flexible framework for commercial water heating measure packages by modeling hourly system performance based on hot-water loads, storage behavior, and equipment performance characteristics. SCE convened a Commercial Heat Pump Water Heater Technical Advisory Group (CHPWH-TAG),[24] which reviewed the draft calculator and provided feedback on the tool.

Effective Program Year: 2026. The new DEER Commercial and Multifamily Water Heater Calculator shall be applied to the SWWH028 measure package as part of the PY2026 mid-cycle update. The new calculator is needed to address the federal commercial water-heating standards with an October 6, 2026 compliance date.[25] Inputs and assumptions in the calculator may be refined over time based on findings from the Nonresidential Water Heating Measure Impact Evaluation, including results from billing analysis, customer surveys, and onsite metering.

Effective Program Year: 2028. The PAs should switch all commercial water heating measures, including gas, to the new calculator (New DEER Commercial and Multifamily Water Heater Calculator) in place of the DWHC, unless otherwise directed by CPUC staff. SWWH028 will start using the new calculator in the updated DEER2026 measure package.

B.9. Updated DEER Water Heater Calculator (DWHC)

Effective Program Year: 2026. CPUC staff released Version 6.0 of the DEER Water Heater Calculator (DWHC) on CEDARS to support commercial water-heating measure package updates still being made for DEER2026, with the exception of SWWH028.[26]

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[23] The version currently posted on CEDARS is titled the DEER Commercial Heat Pump Water Heater Calculator and was developed initially for SWWH028, Large Heat Pump Water Heater, Commercial and Multifamily, Fuel Substitution. CPUC staff and the Ex Ante Review team are updating the calculator to ensure that it can also accommodate commercial and multifamily gas water-heater measure packages. Upon completion of this update, CPUC staff will rename the tool the DEER Commercial and Multifamily Water Heater Calculator. The current version is posted at: https://cedars.cpuc.ca.gov/deer-resources/tools/water-heaters/resource/12/history. Future versions will be posted on the same page.

[24] The group includes broad participation from IOUs, CPUC staff and consultants.

[25] Use of the DEER Commercial Heat Pump Water Heater Calculator is not contingent on whether the federal commercial water-heating standard ultimately takes effect on the current federal schedule. The calculator is a methodological update for SWWH028 and may be used regardless of whether the federal standard is delayed, modified, not enforced, or otherwise remains legally uncertain; the legal status of the federal rule affects the applicable baseline assumptions, not whether CPUC staff may use the calculator.

[26] https://cedars.cpuc.ca.gov/deer-resources/tools/water-heaters/resource/11/history/

DWHC v6.0 updates the incoming cold-water mains temperature values and ambient air temperature values, and adds a macro for generating hourly load shapes.

B.10. Archivable Measure Packages

In determining whether a measure package may be archived, deferred, suspended, or otherwise not kept current—or must remain current—CPUC staff will consider not only current program use, but also whether the measure package may still be needed for policy or analytical purposes, including assessment of viable electric alternatives, compliance with a Commission decision requiring that a specific measure package remain available for use, future market need, and the potential impact on ratepayers and portfolio claims.

C. DEER 2030 Update and Measure Package Submission/Review Timeline

Effective Program Year: 2028. This resolution sets forth the **tentative** schedule for DEER Update and for submission of measure packages for CPUC staff approval for PY2030-31. The timeline and schedule are provided in Table 2.

Table 2. Tentative PY2030-2031 DEER Update Cycle Timeline

Description	Responsible Party	Due Date	Approval Date	Effective Date
Draft DEER2030 Update Resolution	CPUC	2028-07-31	-	-
DEER2030 Update Resolution	CPUC	-	2028-10-30	2030-01-01*
Measure Package Update Schedule	PAs/ Stakeholders	2027-08-01**	-	-
Measure Package Submittals	PAs		2028-07-31+	2030-01-01*

* There may be exceptions when updates become effective mid-cycle.

** Draft for workflow scheduling; updates to the schedule may be made if needed. Future updates such as EnergyPlus prototypes, EM&V evaluations, and CPUC guidance will be incorporated into the review of the Measure Package Update Schedule to properly stagger measure package submissions and reviews.

+ Per Draft Resolution release, adoption in Final Resolution.

CPUC staff will work with PAs to set a prioritized schedule of updates for all PY2030-31 measure packages. PAs may submit additional updates to measure packages beyond what is directed and may include additional measure packages for update during that time. Examples of such updates may include, but are not limited to costs, new study data, and EM&V results.

Staff will work with the PAs to develop a schedule of submissions so measure packages requiring more time to develop can be submitted well before the standard three-month timeframe for review and approval to avoid delays. It is the responsibility of the PAs to follow the agreed schedule for submissions or risk measure packages not being included in the DEER resolution and therefore not receiving approval.

PAs and their measure developers are responsible for submitting clean, complete, and review-ready measure packages, including all required documentation, supporting analyses, addenda, references, and identification of dependencies needed for Ex Ante Review. Where a PA seeks to pause, shelve, retire, or otherwise remove a measure package from the proposed review queue, the PA should submit a written proposal identifying the affected measure package(s), the basis for the request, whether the currently approved version would remain active, and the PA's proposed path forward, including any planned future update, reactivation, or retirement. CPUC staff will review that PA proposal and may approve it or suggest revisions.

D. Mid-Cycle Adjustments to the Locked Ex-Ante Values

Decision D.21-05-031 locks the ex-ante values used for Potential and Goals study, forecasting, portfolio planning, and claims for the two-year DEER cycle. Mid-cycle adjustments do not reopen the adopted DEER vintage generally, but may be made on a limited basis for new measure package submittals, new measure package offerings, reasonable corrections to existing locked values, updates required by codes and standards, policy changes that become effective during the cycle, or any other reason CPUC staff deems necessary. Reasonable corrections, including typographical, clerical, and other obvious inadvertent errors or omissions, shall be reviewed on a case-by-case basis with consideration of their impact on the portfolio. Mid-cycle corrections to existing locked values will be communicated to the lead IOU for stakeholder awareness. IOUs and sponsoring PAs are responsible for communicating these updates to statewide stakeholders including Community Choice Aggregators (CCAs) and Regional Energy Networks (RENs). New measures and new offerings should become effective upon approval. Changes to existing measures shall generally become effective 90 days after approval, unless CPUC staff determines that a different effective date is warranted to account for application, true-up, claims, or other mid-cycle implementation needs.

CPUC staff may issue future clarifications regarding application of existing measure-cost and incentive-reporting requirements to Direct Install delivery types. Such clarifications may be issued as documentation updates and do not, by themselves, reopen locked ex ante values.

D.1. Codes and Standards

Anticipated changes to codes and standards that occur during the DEER2028 cycle, or that become effective during development of PY2028-29 measure packages, should be planned for by PAs. These may include federal and state codes and standards updates, including applicable ENERGY STAR specification changes where those changes affect active measure packages, baseline assumptions, or eligibility requirements. PAs shall work with CPUC staff and the Ex Ante Review team to document revision timelines for affected measure packages so that required baseline changes, cost-effectiveness updates, and any related addenda can be incorporated in an orderly manner. These updates should be treated as planned revisions rather than ad hoc exceptions. In some cases, however, a standard or other requirement may be revised, vacated, repealed, delayed, suspended, or not enforced without substantial notice. CPUC staff will distinguish between a formal revision to a standard and non-enforcement or enforcement discretion for a codified requirement and will determine the appropriate DEER treatment on a case-by-case basis, including whether a baseline update, delayed implementation, alternate measure package version, or other transitional treatment is warranted.

One standard update affecting water heating is the U.S. Department of Energy's October 6, 2023 final rule for commercial water-heating equipment under 10 CFR part 431.[27] The rule became effective December 5, 2023, and the amended standards applies to covered equipment manufactured on or after October 6, 2026. The amended standards raise the federal code minimum for affected gas-fired commercial water heating equipment. Where that code minimum controls the standard-practice baseline, affected measure-package offerings, including fuel-substitution offerings with a gas water-heater baseline, are expected to have lower calculated gas savings than they would have under the prior federal standard. The applicability and magnitude of the change depend on the equipment class, measure application type, and baseline case.

The amended requirements apply through separate provisions of 10 CFR § 431.110. Table 1 to § 431.110(a) establishes amended thermal-efficiency and, where applicable, standby-loss requirements for gas-fired storage water heaters and storage-type instantaneous water heaters, and amended thermal-efficiency requirements for gas-fired instantaneous water heaters and hot water supply boilers. Table 2 to § 431.110(c) separately establishes amended Uniform Energy Factor requirements for residential-

[27] U.S. Department of Energy, "Energy Conservation Program: Energy Conservation Standards for Commercial Water Heating Equipment," 88 Fed. Reg. 69686 (Oct. 6, 2023), effective Dec. 5, 2023; compliance required on and after Oct. 6, 2026. https://www.federalregister.gov/documents/2023/10/06/2023-20392/energy-conservation-program-energy-conservation-standards-for-commercial-water-heating-equipment

duty commercial gas-fired storage water heaters. Accordingly, residential-duty commercial gas-fired storage water heaters are subject to the amended standards even though DOE rates that equipment using Uniform Energy Factor rather than thermal efficiency.

For normal replacement, new construction, and the post-remaining-useful-life portion of accelerated-replacement applications, the standard-practice baseline shall reflect the applicable code minimum or industry standard practice, whichever is more efficient. For the remaining-useful-life period of accelerated-replacement applications, the existing-equipment baseline shall continue to reflect the DEER-approved historical baseline appropriate to the equipment being replaced. Table 3 identifies measure packages that may contain affected offerings or permutations; inclusion in Table 3 does not mean that every offering or permutation within the measure package is affected.

At the time of this resolution, the amended standards remain codified in 10 CFR § 431.110 and have not been stayed, vacated, repealed, or superseded. Accordingly, DEER shall use the standards currently codified in 10 CFR § 431.110 unless and until a legally operative federal or state action changes the applicable requirement. If the applicable requirement changes, CPUC staff may direct a mid-cycle revision to the affected measure packages, authorize an alternate measure-package version, or establish another appropriate transitional treatment consistent with Sections D and D.1.

Table 3. Measure Packages Impacted by Federal Energy Conservation Standards for Water Heating Equipment

Measure Package	Measure Package Title	Responsible Party
SWWH006-11	Tankless Water Heater, Gas, Commercial	SoCalGas
SWWH007-09	Storage Water Heater, Gas, Commercial	SoCalGas
SWWH025-11	Heat Pump Water Heater, Residential, Fuel Substitution	SCE
SWWH027-08	Heat Pump Water Heater, Commercial, Fuel Substitution (in unit WH)	SCE
SWWH028-09	Large Heat Pump Water Heater, Commercial and Multifamily, Fuel Substitution (central WH)	SCE

Consistent with Resolution E-5350, anticipated mid-cycle codes and standards changes shall be planned for by PAs, and PAs shall work with CPUC staff and the Ex Ante Review team to document revision timelines for affected measure packages. Table 4 identifies recent and upcoming federal standards that affect, or may affect, measure package updates during PY2026 through PY2029.

Table 4. Recent and Upcoming Federal Standards Relevant to Measure Package Updates

Federal standard	Compliance (Manufactured on or after) Date
Room air conditioners	May 26, 2026
Residential dishwashers	April 23, 2027
Electric motors	June 1, 2027
Consumer conventional cooking products	January 31, 2028
Consumer clothes dryers	March 1, 2028
Residential clothes washers	March 1, 2028
Circulator pumps	May 22, 2028
Consumer furnaces	December 18, 2028
Consumer storage-type water heaters	May 6, 2029
Refrigerators, refrigerator-freezers, and freezers	January 31, 2029 Or January 31, 2030*
Miscellaneous refrigeration products	January 31, 2029
Air-cooled commercial package air conditioners and heat pumps of 65,000 Btu/h and greater	January 1, 2029
Distribution transformers	April 23, 2029

* DOE assigns the applicable compliance date by product class. See 89 Federal Register 50205 (June 13, 2024) and 10 CFR § 430.32(a).

This list is not exhaustive. Each PA remains responsible for conducting further research and ongoing monitoring for additional applicable codes and standards changes that may affect active or proposed measure packages and for proposing any needed updates on the applicable DEER2028 or mid-cycle schedule.

E. Updates to DEER Support Table Values

The following changes to the DEER support table values are completed or planned.

E.1. Updates to NTG Table and values

Effective Program Year: 2026. The statewide Commercial, Industrial, and Agricultural Custom (CIAC) net-to-gross ratio (NTGR) for PY2026 shall be 0.60 for both electric and gas custom measures. The following Net-to-Gross ID values were updated so that NTG_Elec and NTG_Gas both equal 0.60:

- NonRes-sAll-mCust
- NonRes-sAll-mCust-Elec

- NonRes-sAll-mCust-Gas

For those same records, MeasImpactType was updated from Cust-Gen|Deem to Cust-Gen. This update is supported by January 27, 2026, CPUC Energy Division memorandum, Justification for updating the Statewide Commercial, Industrial, Agricultural Custom (CIAC) Net-to-Gross Ratio, which established a NTG ratio of 0.60 for both electric and gas CIAC custom measures for PY2026.[28] CPUC staff may update the statewide CIAC NTG ratios as updated evaluation data becomes available.

Effective Program Year: 2026. The SEM (Strategic Energy Management) Default Net-to-Gross ID was updated for DEER2026 to add the Deemed Measure Impact Type.

Effective Program Year: 2028.

- Because systems using CO_2 refrigerant typically involve substantially higher equipment costs and, in some cases, specialized installation training, we find that these measures are likely to exhibit higher net-to-gross values than comparable systems using other refrigerants. Accordingly, this resolution sets the NTG ratio for equipment using CO_2 as the refrigerant at 1.0 for all delivery types under deemed measure packages. **Measures using CO_2 refrigerants in custom projects may use a NTG ratio of 1.0, effective January 1, 2027**.

- The building weatherization measure packages listed in Table 5 shall have a NTG ratio of 1.0 for all delivery types. Prior studies suggesting an NTG ratio of 0.28 for envelope improvements are outdated and lack sufficient granularity for current program design, particularly because they did not address many of the customer segments now served by Program Administrators. Setting the NTG ratio for these weatherization measures at 1.0 will also facilitate more practical integration of weatherization and HVAC measures within Program Administrator programs. **Weatherization measures included in custom projects may use a NTG ratio of 1.0, effective January 1, 2027.**

- The multifamily sector has specific challenges, as acknowledged in Order Instituting Rulemaking R.25-04-010. The Commission has recognized the

[28] https://pda.energydataweb.com/#!/documents/4263/view

"complex and challenging to serve" nature of the multifamily sector, stating "there is a need to address the needs of the multifamily sector more directly and potentially craft new approaches." This resolution offers one area to address this issue by allowing the NTG ratio of 1.0 be applied for **custom projects** installed in common areas within the multifamily sector that are metered on a commercial rate schedule, excluding deemed lighting measures**, effective January 1, 2027**.

Table 5. Building Weatherization Measure Packages with NTG of 1.0

Measure Package	Measure Package Title
SWBE007	Wall Insulation, Residential
SWBE006	Ceiling Insulation, Residential
SWSV001	Duct Seal, Residential
SWBE010	Deeply Buried Ducts, Residential
SWBE011	High Efficiency Window, Residential
SWBE014	Door Sweeps and Door Sealing, Residential
SWBE013	Efficient Doors, Residential
SWBE012	High Efficiency Window, Commercial

E.2. Updates to HVAC types

Effective Program Year: 2028. Two new residential equipment records were added:

- rPTAC, described as packaged terminal air conditioner, and
- rPTHP, described as packaged terminal heat pump

E.3. Updates to EULs

Effective Program Year: 2026. CPUC staff added four new EUL IDs:

- Agr-GasCondUnitHtr for the Gas Condensing Unit Heater – Greenhouse measure category to support agricultural greenhouse space-heating applications, with an EUL of 12 years,
- Agr-LowIntIRHtr for the Low-Intensity Gas Infrared Heater measure category to support agricultural space-heating applications, with an EUL of 12 years,
- BS-DoorStorefront for sliding glass storefront doors in commercial applications, with an EUL of 10 years, and

- BS-DoorSealSweep for commercial door seals and sweeps, with an EUL of 10 years.

Program administrators may use the updated glazing-related EUL IDs:

- GlazDaylt-HPWinDaylt, High Performance Windows for Daylighting, and
- GlazDaylt-LoSHGC, Low Solar Heat Gain Coefficient Windows.

For both records, this resolution sets the EUL to 30, replacing the previous 20-year values.

Research Needs and Ongoing Updates

F. EnergyPlus Prototypes

For DEER2028, prototype updates include both implemented changes and possible future enhancements.

- **Nonresidential design-day schedule update.** This update revised all 26 prototype root files to incorporate ASHRAE 90.1 Appendix G design-day schedules, including cooling-design-day schedules with full lighting/equipment/occupancy fractions, heating-design-day schedules with zero non-HVAC internal loads, and standardized HVAC design-day schedules.
- **Residential prototype parameterization and sizing fixes.** This update revises design-day internal gains schedules, design-day temperature setpoint schedules, thermostat objects, and sizing-run options, with the objective of reducing unmet hours and improving auto-sizing consistency across prototype models.
- **HVAC Sizing Factor.** The current DEER EnergyPlus guidance applies the ASHRAE 90.1 Appendix G3.1.2.2 sizing factors of 1.15 for cooling and 1.25 for heating to commercial models, while residential models continue to use the interim 1.8 sizing factor. For PY2028 measure submissions, it is reasonable to continue using these same sizing assumptions. The ongoing prototype refinements—including ASHRAE Appendix G design-day schedule updates for nonresidential prototypes, and residential revisions to design-day internal gains, temperature setpoints, thermostat objects, and sizing-run options that reduce unmet hours and bring auto-sized cooling capacities closer to field data—have

improved overall model fidelity but do not yet provide a stronger market-based basis for revising the sizing factors themselves.

Future studies leveraging broader field and program data may be pursued through ongoing coordination with the PA-initiated EnergyPlus Subject Matter Expert group to develop more research-based and market-representative sizing assumptions and to support potential future updates to these factors.

Calendar-year and holiday alignment. The DEER EnergyPlus prototype annual simulations have been updated to align with the CEC 2009 non-leap reference calendar. The 2009 non-leap reference calendar is consistent with the CEC calendar-year convention used for 2025 Title 24 modeling. The same 2009 calendar basis was also used for the CZ2025 DEER peak 3-day period lookup table. The 2009 calendar begins on Thursday and supports consistent treatment of day-of-week assignments, weekends, holidays, and weather-sensitive hourly results. The update revised prototype run-period and holiday treatment so that annual simulations use a consistent calendar basis across DEER prototype modeling, peak-period analysis, and downstream weather-dependent tools. This alignment is important because modeled hourly load shapes are ultimately used with hourly avoided-cost values in CET/ACC-related cost-effectiveness processing. If the ACC calendar and modeled load-shape calendar do not align, one dataset may need to be shifted to align weekdays and weekends before avoided costs are applied. That type of post-processing shift can improve day-type alignment, but it can also misalign the weather sequence and holiday treatment used to generate the original modeled load shape. Aligning the DEER prototype calendar, peak-period analysis, and load-shape development around the CEC 2009 calendar basis reduces that risk and improves traceability between modeled results, weather data, peak-period calculations, and avoided-cost application.

G. Variable Capacity Heat Pump Performance Curves

San Diego Gas & Electric should continue laboratory testing of variable capacity heat pump (VCHP) to develop performance curves. We support continued research on VCHP performance curves as a continuation of the DEER2026 research effort. SDG&E is responsible for incorporating resulting performance-curve findings into the related DEER EnergyPlus prototype models, in coordination with CPUC staff and the EnergyPlus prototype team, as warranted by the study results. This work may require

planning and consideration of relevant EnergyPlus objects, configurations, and model-input requirements before the findings can be translated into prototype updates.

Measure Adoption

The DEER2028 Resolution will adopt and lock approved ex ante values contained in the measure packages for PY2028-2029 and mid-cycle changes from PY2026-27. The list of measure packages with mid-cycle changes for PY2026-27 is listed in Appendix A1 and the list of measure packages for PY2028-29 is listed in Appendix A2. All measures that will be active in that program year will be adopted and locked, not just those with updates. New measures can be added mid-cycle and these will be tracked with start and expiry dates of those measures in the eTRM. Exceptions are made to allow changes to measure packages including new codes and standards, ENERGY STAR changes, errors in existing measure packages or any other reason CPUC staff deems necessary.

H. Guidance from EM&V Review

EM&V evaluation results and special studies will continue to be among the primary sources for DEER measure and measure package updates. Evaluation results with sufficient rigor and precision will be used to update DEER and measure package assumptions and parameters. For DEER2028, the current EM&V cycle is focused on PY2023 and PY2024 claims. Two water-heating studies are still in progress and will not be completed until PY2027.

Effective Program Year: 2028.

- **Large Heat Pump Water Heater, Commercial and Multifamily (central WH), Fuel Substitution (SWWH028).** The EM&V study is intended to inform potential updates to DEER modeling, measure package characteristics and ex ante parameters using billing analysis, customer surveys, and onsite metering data collection.
  CPUC staff anticipates a Q2 2027 submission target for the PY2028 versions of SWWH027 and SWWH028. This is a planning target and may be revised by CPUC staff based on the timing and availability of sufficiently developed EM&V findings, incorporation of those results into the DEER Commercial and Multifamily Water Heater Calculator, publication of the updated calculator and supporting inputs, and other relevant technical, review, or implementation considerations. CPUC staff may establish an earlier or later submission date as appropriate.

- **Faucet Aerator, Residential (SWWH001) and Low-Flow Showerhead, Residential (SWWH002).** The EM&V study will include updating the Gross Savings Installation Adjustment (GSIA) using a participant survey. CPUC staff is extending the PY2028 submission deadline for these measure packages until Q1 of 2027 to incorporate the EM&V study results.

Effective Program Year: 2030.

- **Heat Pump Water Heater, Residential, Fuel Substitution (SWWH025).** The EM&V study will develop verified updates to measure package characteristics and ex ante parameters and assumptions for the PY2030 submission.
- **Tankless Water Heater, Gas, Commercial (SWWH006).** The EM&V study will develop verified updates to measure package characteristics and ex ante parameters and assumptions for the PY2030 submission.

COMMENTS

Public Utilities Code section 311(g)(1) provides that this resolution must be served on all parties and subject to at least 30 days of public review. Comments are due 20 days from the mailing date of the draft resolution. Section 311(g)(2) provides that the 30-day review period and 20-day comment period may be reduced or waived upon the stipulation of all parties in the proceeding.

Interested stakeholders do not need party status to submit comments on the resolution. The 30-day review and 20-day comment periods for the draft of this resolution were neither waived nor reduced. Draft Resolution E-5474 was served for comments on September 17, 2026. On October 7, 2026, comments were submitted by California Technical Forum Staff (Cal TF Staff), Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company (SDG&E), Southern California Edison Company (SCE), and Southern California Gas Company (SoCalGas).

A summary of the comments requesting changes or clarification, together with CPUC staff's responses, is provided below. Comments and responses are organized under the same headings as the preceding Discussion section. Where multiple commenters raised substantially similar issues, their comments are summarized together. Comments limited to typographical, citation, cross-reference, formatting, or other ministerial corrections are not separately summarized; accepted corrections have been made in this resolution. Comments supporting the draft without requesting a change are also not separately summarized. Comments outside the scope of this resolution are not addressed.

A. Updates to eTRM

A.3 Measure Lifecycle Management (MLM) in DEER

Comment summary: Cal TF Staff recommended expanding the MLM to include additional information on federal and state codes and standards, research and data needs, the scope and timing of measure package updates, and measure package status. Cal TF Staff also recommended making the MLM the single repository for measure package update information. PG&E and SDG&E similarly requested a more formal measure package prioritization process, including defined status categories, cost-benefit considerations, early approval of measure package update scopes, and specified implementation milestones.

CPUC staff response: CPUC staff supports the continued development and use of the MLM to improve planning, transparency, and coordination of measure package updates. The MLM may be expanded over time to include additional fields, update drivers, research needs, status information, timelines, or other information that CPUC staff determines would be useful. CPUC staff may also use the MLM together with other planning, tracking, communication, and approval processes.

CPUC staff does not adopt requirements in this resolution specifying the precise fields, status definitions, governance structure, approval process, or implementation dates for future MLM enhancements. ~~Those details are more appropriately developed administratively as CPUC staff, Program Administrators, and other stakeholders gain experience with the tool and identify practical needs. CPUC staff also declines to designate the MLM as the exclusive repository for all measure package information or to require approval of every measure package update scope before technical work begins. CPUC staff may establish additional milestones, processes, or requirements as appropriate for a particular DEER cycle or measure package.~~

B. DEER System and Measure Package Updates

B.1 Avoided Cost Calculator (ACC)

Comment summary: SoCalGas stated that the draft could be read to imply that a VEA framework is currently operative and requested that the reference to using ACC values for VEA determinations be removed or restated in forward-looking terms.

CPUC staff response: Although the Commission has not adopted all potential future VEA requirements, an operational VEA flagging process is already used for applicable measure-package permutations. Under the methodology developed through the VEA

Measure Package Working Group, potential electric alternatives are matched and evaluated against applicable criteria, and CET cost-effectiveness results are used to assign a binary VEA flag in the eTRM. Because CET cost-effectiveness results rely on ACC values, updated ACC values may affect the applicable VEA flag.

CPUC staff revised Section B.1 to distinguish this existing permutation-level flagging process from any additional VEA eligibility requirements that may be adopted in the future.

B.6 DEER Electric Load Shapes

Comment summary: SCE stated that the opening language in Section B.6, requiring PAs to use a load shape from the CEDARS load-shape library for PY2028 deemed measure packages, could be read to apply to all deemed measures. SCE noted that later language in the same section allows non-modeled measures to continue using existing impact profiles or other appropriate methods. SCE requested that CPUC staff distinguish more clearly between measures required to provide new hourly load shapes and measures permitted to retain an existing impact profile or another approved method.

CPUC staff response: CPUC staff agrees and revised Section B.6 to clarify the applicability of the load-shape requirements. For measure packages modeled using the DEER EnergyPlus prototypes, the DEER Commercial and Multifamily Water Heater Calculator, or the DEER Water Heater Calculator, Version 6.0, PAs shall upload the hourly load shapes generated by the applicable modeling tool to the load-shape library on CEDARS. Measures that are not modeled may continue to use existing impact-profile-based approaches, including an existing Electric Impact Profile ID where appropriate, or another CPUC-approved method. CPUC staff retains the use of existing profiles for some measures to reduce development effort and workload. If an approved load shape later becomes available for such a measure, a PA may use that load shape in a future measure package update, subject to CPUC staff review and approval.

B.7 Viable Electric Alternative (VEA)

Comment summary: SoCalGas requested that the resolution distinguish the requirements currently in effect under D.23-04-035 from additional VEA policies that have not yet been adopted. SoCalGas requested that future VEA requirements not be incorporated into DEER or measure packages before Commission adoption. SDG&E requested a contingency process for revising or sunsetting gas measure packages if future VEA requirements affect their eligibility.

CPUC staff response: CPUC staff agrees that the resolution should distinguish the existing VEA implementation process from potential future VEA requirements. CPUC staff revised Section B.7 to clarify that D.23-04-035 established the current new-

construction requirements and authorized development of VEA technical guidance. The VEA Measure Package Working Group subsequently developed a process that uses CET cost-effectiveness results to assign a binary VEA flag at the measure-package permutation level in the eTRM. This existing flagging process remains relevant to DEER and measure-package administration.

~~Any future expansion of VEA requirements will be addressed through the applicable Commission proceeding, decision, technical guidance, or other Commission direction. CPUC staff may revise VEA flags, affected measure packages, implementation timelines, or other requirements as appropriate after such direction is issued.~~

B.10 Archivable Measure Packages

Comment summary: Cal TF Staff and PG&E supported prioritizing measure package updates but requested more detailed and objective criteria for determining which measure packages should be updated, deferred, archived, suspended, or retired. They recommended considering the cost of an update relative to its expected ratepayer and portfolio benefits, prioritizing high-impact measure packages, allowing lower-impact updates to be deferred, and adopting status categories such as Active, Deferred, Provisional, Suspended, and Sunset. PG&E also requested a documented process, with Program Administrator and Cal TF participation, that would automatically defer updates when specified conditions are met.

CPUC staff response: CPUC staff agrees that measure package update resources should be focused where they provide the greatest value and that the cost and level of effort associated with an update may be relevant to prioritization. CPUC staff will continue to prioritize high-impact measure packages for more intensive review and intends to update measure packages when relevant parameters require updating. Any deferral or other exception will be determined case by case.

~~The terms discussed by commenters may be useful for future planning and tracking, but CPUC staff retains discretion to determine whether and how any such categories should be defined or operationalized. CPUC staff may consider stakeholder proposals and may use the MLM or other tools to document measure package status, rationale, scope, or future update needs.~~

C. DEER 2030 Update and Measure Package Submission/Review Timeline

Comment summary: SDG&E requested that the resolution establish a formal milestone requiring Program Administrators to submit proposed measure package update scopes by May 31, 2027, followed by CPUC staff approval by June 30, 2027. SDG&E also requested that CPUC staff approve the scope of each measure package update before

engineering work begins and that subsequent scope changes generally be limited to major errors or oversights. Cal TF Staff separately recommended completing measure package update criteria by the end of the first quarter of 2027.

CPUC staff response: CPUC staff acknowledges the issues related to the measure package submission timeline and notes that improvements to the process may be addressed in another CPUC proceeding. CPUC staff does not adopt the requested fixed dates or a requirement that the scope of every measure package update receive final approval before technical work begins. Table 2 provides a tentative framework for planning the DEER2030 cycle, and CPUC staff may establish or revise administrative milestones, submission schedules, scope-review processes, or other coordination requirements as the work progresses.

~~Early identification of anticipated update scope is useful and may reduce unnecessary work. However, CPUC staff must retain the ability to revise priorities or scope when new information becomes available, including codes and standards changes, Commission decisions, evaluation findings, market data, technical findings, errors, implementation needs, resource constraints, or other relevant circumstances. CPUC staff may work with Program Administrators, Cal TF, measure developers, and other stakeholders to develop more detailed schedules and scope expectations outside this resolution. Inclusion of a measure package or preliminary scope in the MLM or another planning document does not limit CPUC staff's authority to request additional work, modify the scope, defer work, or determine that a different treatment is appropriate.~~

D. Mid-Cycle Adjustments to the Locked Ex-Ante Values

Comment summary: SoCalGas requested removal of the phrase "or any other reason CPUC staff deems necessary" from the list of circumstances that may support a mid-cycle adjustment. SoCalGas argued that the phrase provides open-ended discretion inconsistent with the purpose of locking ex ante values and the Commission's prior "bus stop" framework. SoCalGas requested explicit criteria limiting mid-cycle changes, formal public notification and stakeholder input, and adequate advance notice before a change becomes effective.

CPUC staff response: CPUC staff does not adopt the requested change. The phrase "or any other reason CPUC staff deems necessary" is retained so that CPUC staff can address circumstances that cannot reasonably be identified or described exhaustively in advance. The provision does not mean that adopted values will be routinely or arbitrarily reopened, nor does it eliminate the general stability provided by the two-year DEER cycle.

Section D states that mid-cycle adjustments do not generally reopen the adopted DEER vintage and that corrections and other changes will be considered on a case-by-case basis. The section also generally provides a 90-day implementation period for changes to existing measures, unless CPUC staff determines that a different effective date is warranted.

~~In deciding whether a mid-cycle change is necessary and how it should be implemented, CPUC staff may consider the nature and materiality of the issue, applicable legal and regulatory requirements, accuracy of the affected values, portfolio and ratepayer impacts, customer and market disruption, system readiness, implementation timing, claim implications, and any other relevant circumstances. Depending on the issue, CPUC staff may provide notice, seek technical or stakeholder input, establish a transition period, delay implementation, authorize an alternate measure package version, direct a correction or resubmittal, or use another appropriate approach.~~

Comment summary: PG&E requested that each change clearly identify its effective date, prospective or retroactive application, affected program years, measure packages, project types, claims, reporting fields, and system versions. PG&E also requested a formal written implementation notice for mid-cycle changes, sufficient implementation time after final specifications and systems are available, an interim submission process when CEDARS functionality is unavailable, and documentation of the versions of ACC, CET, RACC-FSC, weather files, load shapes, and support tables used for measure package approval and reporting.

CPUC staff response: CPUC staff agrees that effective dates, applicability, and the versions of material tools and inputs should be documented clearly enough to support implementation, reproducibility, and review. The resolution identifies effective program years and applicable tool versions where necessary, and measure package documentation should identify the material versions, assumptions, datasets, calculators, and other inputs used to produce the approved results.

~~CPUC staff does not adopt a single mandatory implementation notice format, fixed implementation period, or uniform system readiness requirement for all changes. The nature, urgency, complexity, and implementation consequences of individual changes vary. CPUC staff will determine the appropriate communication method, documentation, effective date, implementation period, testing expectations, and submission requirements for each change.~~

~~Where appropriate, CPUC staff may issue a written implementation notice, provide additional implementation time, authorize an interim or alternate submission method, use a phased transition, allow continued use of an existing process for a limited period, require recalculation or resubmission, or establish another transitional treatment. The~~

~~unavailability or incomplete status of a particular system function does not prevent CPUC staff from adopting or directing a necessary change, but staff may consider system readiness and practical implementation needs when determining how and when the change will apply.~~

~~A subsequent change to a methodology, calculator, assumption, value, or system does not by itself require previously approved measure packages or accepted claims to be recalculated or resubmitted. CPUC staff will determine whether any such action is required based on the circumstances of the particular change.~~

D.1 Codes and Standards

Comment summary: SCE stated that the May 26, 2026 room-air-conditioner standard is no longer an upcoming federal standard and requested that CPUC staff remove it from Table 4. SCE also requested that the table use Department of Energy product nomenclature and clarify that refrigerator, refrigerator-freezer, and freezer compliance dates vary by product class.

CPUC staff response: CPUC staff agrees in part. Staff revised the title and introductory language for Table 4 to clarify that the table identifies both recent and upcoming federal standards relevant to measure package updates. Staff retained the room-air-conditioner entry because the associated SWAP007-05 measure package still requires a PY2026 mid-cycle update to incorporate the May 26, 2026 federal standard. Staff also revised the applicable product names to conform to Department of Energy nomenclature and clarified that the compliance date for refrigerators, refrigerator-freezers, and freezers is January 31, 2029, or January 31, 2030, depending on product class.

Comment summary: SDG&E requested that CPUC postpone use of the amended federal commercial gas water-heater standards as DEER baseline requirements until the pending litigation is resolved and implement any subsequent baseline change at a future DEER update point. SDG&E stated that implementing the amended standards while they are subject to litigation and temporary federal non-enforcement could disrupt the market and undermine the stability of locked ex ante values. SoCalGas similarly requested clarification regarding how CPUC staff would address a later revision, delay, vacatur, or repeal of the federal standards during an active DEER cycle. SoCalGas also questioned whether residential-duty commercial gas-fired storage water heaters are covered because those products are rated using the Uniform Energy Factor metric.

CPUC staff response: CPUC staff does not adopt the request to postpone the baseline update. At the time of this resolution, the amended commercial water-heater standards remain codified in 10 CFR § 431.110 with a compliance date of October 6, 2026. The United States Supreme Court vacated the prior appellate judgment concerning the rule,

not the regulation itself. The United States Court of Appeals for the District of Columbia Circuit subsequently held the consolidated cases in abeyance pending further order, but did not stay, vacate, repeal, or otherwise modify the codified standards. The Department of Energy's temporary exercise of enforcement discretion does not amend the standards or remove applicable legal requirements. Accordingly, affected DEER standard-practice baselines will reflect the federal requirements currently codified in 10 CFR § 431.110.

If a subsequent court, federal agency, or state regulatory action changes the applicable requirement, CPUC staff may revise the affected measure packages through the existing mid-cycle adjustment process. CPUC staff and the responsible Program Administrators may also prepare an alternate measure package version in advance when doing so would facilitate timely implementation of an anticipated regulatory change.

CPUC staff also clarified the scope of the federal rule. Residential-duty commercial gas-fired storage water heaters are expressly covered under 10 CFR § 431.110(c), Table 2, which establishes Uniform Energy Factor requirements for that equipment. Other covered commercial gas-fired water-heating equipment is addressed under 10 CFR § 431.110(a), Table 1, using thermal-efficiency and, where applicable, standby-loss requirements. Staff therefore retained the reference to residential-duty commercial gas-fired storage water heaters and revised Section D.1 to distinguish the applicable federal rating metrics and tables.

E. Updates to DEER Support Table Values

Comment summary: SCE requested that the NTG ratio of 1.0 for verified custom projects using CO_2 refrigerants apply to projects with claims not yet submitted as of the effective date of this resolution, including projects installed or claiming in 2026. SCE also requested clarification regarding the custom project pathways to which this treatment applies.

CPUC staff response: CPUC staff retains January 1, 2027, as the effective date for the custom-project NTG treatment adopted in this resolution. The treatment of projects initiated, installed, completed, or otherwise in process before January 1, 2027, is not determined categorically in this resolution. Questions concerning those projects, including the applicability of the NTG treatment to a particular custom project pathway, shall be referred to the CPUC Custom Project Review team.

H. Guidance from EM&V Review

Comment summary: SCE requested that the submission date for the PY2028 versions of SWWH027 and SWWH028 be established as 90 days after publication of the updated DEER Commercial and Multifamily Water Heater Calculator incorporating the final EM&V study results, rather than as a fixed Q2 2027 deadline. SCE stated that the measure package updates depend on completion of the EM&V study and incorporation of the study findings into the calculator, and that a fixed date may not provide sufficient time if either prerequisite is delayed.

CPUC staff response: CPUC staff agrees that the submission schedule should consider the timing and availability of EM&V findings and related calculator updates, but does not adopt a fixed 90-day period following publication of the updated calculator. The primary objective is to ensure that the PY2028 measure packages are available in sufficient time to support Program Administrator planning and implementation. That objective must be balanced with the opportunity to incorporate available data and findings that improve the accuracy of the calculator and measure package assumptions.

EM&V study schedules depend on data collection, analysis, quality assurance, technical review, and other factors that may change as the work progresses. CPUC staff therefore retains flexibility to determine which findings and inputs are sufficiently developed and available for incorporation without delaying measure package development, review, and approval. Findings that cannot reasonably be incorporated within the applicable schedule may be addressed through later calculator refinements, measure package updates, or other appropriate processes.

CPUC staff revised Section H and Appendix A1 to identify Q2 2027 as the current planning target rather than a fixed deadline. ~~CPUC staff may adjust the submission target and the scope of information incorporated into the update as necessary to balance timely availability for Program Administrator planning with the use of sufficiently developed information to improve the accuracy of the measure packages.~~

FINDINGS AND CONCLUSIONS

1. We find it reasonable for the eTRM to continue as the Official Source of California Energy Efficiency Measure Data and the sole source for deemed measure package development, submittal, review, and publishing.
2. Decision D.15-10-028 retains the direction from D.12-05-015 that DEER values be updated to be consistent with existing and updated state and federal codes and standards.

3. Decision D.15-10-028 also states that CPUC staff may make changes at any time without a Resolution to fix errors or to change documentation.
4. It is appropriate to update the DEER values and deemed ex ante processes as a result of: a) updates to underlying methodology, b) corrections and clarifications, c) evaluation and research results, d) new codes and standards, e) review of market and technical studies, and f) addition of new measures or tools or processes needed to support deemed measure package development and review.
5. Decision D.05-01-055 establishes CPUC Energy Division authority to review and approve measures, including authority to designate a set of values as the deemed data source of record.
6. We find it reasonable for CPUC staff and the Ex Ante Review team to update calculators and related technical tools used to develop deemed ex ante values, including the new DEER Commercial and Multifamily Water Heater Calculator for commercial water-heating measure packages, in order to reflect updated methods, standards, weather inputs, and evaluation results.
7. We find it reasonable for CPUC staff to establish targeted exceptions to the general measure package submission timeline where updated tools, mid-cycle standards changes, or pending EM&V results are necessary to support accurate ex ante values.

THEREFORE, IT IS ORDERED THAT:

1. The DEER2028 Update and revisions to the DEER2026 Update applicable to PY2026 and PY2027, listed in Table 1, and per supporting documentation available on the DEER Module at the CEDARS website, are approved with effective dates as listed. The Appendices to this resolution may be updated by staff as needed.
2. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric (SDG&E), Bay Area Regional Energy Network (BayREN), Southern California Regional Energy Network (SoCalREN), Tri-County Regional Energy Network (3CREN), Local Government Sustainable Energy Coalition (LGSEC), Lancaster Choice Energy (LCE), Marin Clean Energy (MCE), Ava Community Energy, Central California Rural REN, CleanPowerSF, Inland Regional Energy Network, Peninsula Clean Energy, Redwood Coast Energy Authority, Rural REN North, San Diego REN, San Jose Clean Energy, and Sonoma Clean Power must use the updated

assumptions, methods and values for Program Years 2026 and 2027 savings claims, and Program Years 2028-29 planning, implementation and reporting.

3. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric (SDG&E), the Bay Area Regional Energy Network (BayREN), Southern California Regional Energy Network (SoCalREN), Tri-County Regional Energy Network (3CREN), Local Government Sustainable Energy Coalition (LGSEC), Lancaster Choice Energy (LCE), Marin Clean Energy (MCE), Ava Community Energy, Central California Rural REN, CleanPowerSF, Inland Regional Energy Network, Peninsula Clean Energy, Redwood Coast Energy Authority, Rural REN North, San Diego REN, San Jose Clean Energy, and Sonoma Clean Power must follow the updated process adopted in this resolution for deemed ex ante activities as directed in this resolution.
4. Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), Southern California Gas Company (SoCalGas), and San Diego Gas & Electric (SDG&E), the Bay Area Regional Energy Network (BayREN), Southern California Regional Energy Network (SoCalREN), Tri-County Regional Energy Network (3CREN), Local Government Sustainable Energy Coalition (LGSEC), Lancaster Choice Energy (LCE), Marin Clean Energy (MCE), Ava Community Energy, Central California Rural REN, CleanPowerSF, Inland Regional Energy Network, Peninsula Clean Energy, Redwood Coast Energy Authority, Rural REN North, San Diego REN, San Jose Clean Energy, and Sonoma Clean Power must comply with the updated schedule for activities adopted in this resolution unless expressly authorized by CPUC staff.

This Resolution is effective today.

The foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on November 19, 2026; the following Commissioners voting favorably thereon:

Commissioner Signature blocks to be added upon adoption of the resolution

Dated _____, at _____, California

APPENDIX A

A1. PY2026-27 Mid-Cycle Measure Package Updates

Expected mid-cycle updates are listed in Table A1.1. These measure packages have planned codes or standards updates that take effect in 2026 and 2027, before the DEER2028 measure package update.

Table A1.1. PY2026-27 Mid-Cycle Measure Package Updates

Measure Package ID	Measure Name	Mid-Cycle Update Reason	Program Year	Lead IOU
SWWH006-11	Tankless Water Heater, Gas, Commercial	Federal standard update	PY2026	SCG
SWWH007-09	Storage Water Heater, Gas, Commercial	Federal standard update	PY2026	SCG
SWWH025-11	Heat Pump Water Heater, Residential, Fuel Substitution	Federal standard update	PY2026	SCE
SWWH027-08	Heat Pump Water Heater, Commercial, Fuel Substitution	Federal standard update	PY2026	SCE
SWWH028-09	Large Heat Pump Water Heater, Commercial and Multifamily (central WH), Fuel Substitution	Federal standard update and calculator update	PY2026	SCE
SWAP007-05	Room Air Conditioner, Residential	Federal standard update	PY2026	SDG&E

CPUC staff is extending the PY2028 submission deadline for all of the above measure packages until Q4 2026 to allow for mid-cycle updates and approval. For SWWH028 and SWWH027, CPUC staff currently anticipates a Q2 2027 submission target. This is a planning target and may be revised by CPUC staff based on the timing and availability of the final EM&V results, incorporation of those results into the DEER Commercial and Multifamily Water Heater Calculator, publication of the updated calculator and supporting inputs, and other relevant technical, review, or implementation considerations. CPUC staff may establish an earlier or later submission date as appropriate.

A2. PY2028-29 Measures

Table A2.1 identifies the measure packages anticipated for update for PY2028-29 as of the adoption of this resolution. Measure package development, submission, review, and approval will continue after adoption, and the listed measure package versions and statuses may change. The eTRM is the source of record for the most current submitted

and approved measure package versions, approval status, and effective dates. Stakeholders should refer to the applicable measure package pages in the eTRM for current information.

Table A2.1. DEER2028-29 Measure Packages to be Updated

Measure Package ID	Measure Name	Program Year	Lead IOU
SWHC039-10	Smart Thermostat, Residential	2028	SCE
SWFS010-05	Commercial Hand-Wrap Machine, Electric	2028	SCE
SWAP011-06	Vending and Beverage Merchandise Controller	2028	SCE
SWLG020-04	UL Type B LED Screw-in Lamp HID Retrofits	2028	SCE
SWAP013-07	Cooking Appliances, Residential, Fuel Substitution	2028	SCE
SWFS007-06	Insulated Hot Food Holding Cabinet	2028	SCE
SWAP014-05	Heat Pump Clothes Dryer, Residential, Fuel Substitution	2028	SCE
SWFS006-05	Ice Machine, Commercial	2028	PG&E
SWPR002-04	VFD for Glycol Pump Motor	2028	PG&E
SWCR017-07	Ultra-Low Temperature Freezer	2028	PG&E
SWPR006-04	VSD for Ventilation Fan, Agricultural	2028	PG&E
SWPR008-04	VFD on Rod Beam Pump	2028	PG&E
SWPR005-05	VFD for Dust Collection Fan	2028	PG&E
SWWP005-05	Variable Frequency Drive on Irrigation Pump	2028	PG&E
SWPR001-04	Ventilation Fan, Agricultural	2028	PG&E
SWRE005-07	Heat Pump Pool Heater, Residential, Fuel Substitution	2028	SCE
SWFS023-05	Contact Conveyor Toaster, Commercial	2028	SCE
SWFS016-05	Refrigerated Chef Base	2028	SCE
SWCR014-06	Medium or Low-Temperature Display Case	2028	SCE
SWAP015-05	Efficient Electric Cooking Appliances, Residential	2028	SDGE
SWFS009-05	Deck Oven, Electric, Commercial	2028	SCE
SWCR010-06	Bare Suction Line Insulation	2028	SCE
SWFS012-05	Exhaust Hood Demand Controlled Ventilation, Commercial	2028	SCE
SWPR004-06	Circulating Block Heater	2028	SCE
SWFS022-05	Convection Oven, Commercial, Fuel Substitution	2028	SCE
SWFS021-06	Fryer, Commercial, Fuel Substitution	2028	SCE
SWLG019-03	LED, Indoor Horticulture	2028	SCE
SWMI003-03	High-Efficiency Toilets, Residential and Commercial	2028	SDGE
SWWH006-12*	Tankless Water Heater, Commercial	2028	SCG
SWWB004-04*	Home Energy Reports	2028	PG&E

Measure Package ID	Measure Name	Program Year	Lead IOU
SWWH028-10*	Large Heat Pump Water Heater, Commercial & Multifamily, Fuel Substitution	2028	SCE
SWWH010-04*	Boiler, Multifamily	2028	SCG
SWFS011-08	Fryer, Commercial	2028	SCG
SWSV014-06*	Lifecycle Refrigerant Management, Residential	2028	PG&E
SWWH025-12*	Heat Pump Water Heater, Residential, Fuel Substitution	2028	SCE
SWWH027-09*	Heat Pump Water Heater, Commercial, Fuel Substitution	2028	SCE
SWWH017-07*	Hot Water Pipe Insulation, Nonresidential & Multifamily	2028	SCG
SWWH013-07*	Tankless Water Heater, Residential	2028	SCG
SWHC045-07	Heat Pump HVAC, Residential, Fuel Substitution	2028	SCE
SWWH008-03*	Boiler, Process	2028	PG&E
SWWH011-04*	Central Storage Water Heater, Multifamily	2028	SCG
SWSV001-08*	Duct Seal, Residential	2028	SDGE
SWBE001-06*	Greenhouse Heat Curtain	2028	SCG
SWWH018-06	Hot Water Tank Insulation, Nonresidential & Multifamily	2028	SCG
SWWH007-10*	Storage Water Heater, Commercial	2028	SCG
SWWB008-06*	All-Electric Homes, Residential, New Construction	2028	PG&E
SWWH001-06*	Faucet Aerator, Residential	2028	SCG
SWFS017-05	Automatic Conveyor Broiler, Commercial	2028	SCG
SWBE006-05*	Ceiling Insulation, Residential	2028	SCG
SWAP012-04	Gas Dryer Modulating Valve, Commercial and Multifamily	2028	SCG
SWHC059-06*	Smart Fan Controller, Residential	2028	SDGE
SWFS001-05	Convection Oven, Commercial	2028	SCG
SWCR015-07*	Medium-Temperature Case Doors	2028	PG&E
SWWH031-07	Heat Pump Water Heater, Commercial	2028	SCE
SWWH002-07*	Low-Flow Showerhead, Residential	2028	SCG
SWRE001-05*	Pool Cover, Commercial	2028	SCG
SWBE010-03*	Deeply Buried Ducts, Residential	2028	MCE
SWBE002-06*	Greenhouse Infrared Film	2028	SCG
SWFS005-06*	Steamer, Commercial	2028	SCG
SWHC062-03*	Occupancy Fan Controller, Commercial	2028	PG&E
SWHC038-06	Brushless Fan Motor Replacement, Residential	2028	SCE
SWBE007-05*	Wall Insulation, Residential	2028	SCG

Measure Package ID	Measure Name	Program Year	Lead IOU
SWWP004-06*	Water Pump Upgrade	2028	SoCalREN
SWFS003-06	Combination Oven, Commercial	2028	SCG
SWFS014-05*	Rack Oven, Gas, Commercial	2028	SCG
SWHC014-10	Unitary Air-Cooled Air Conditioner or Heat Pump, Under 65 kBtu/hr, Commercial	2028	SDGE
SWHC004-08*	Space Heating Boiler, Commercial & Multifamily	2028	SCG
SWWH005-08*	Boiler, Commercial	2028	SCG
SWFS019-05*	Underfired Broiler, Commercial	2028	SCG
SWHC046-07	Packaged Heat Pump Air Conditioner, Commercial, Fuel Substitution	2028	SCE
SWWH021-03*	Recirculation Pump Timer, Commercial	2028	SCG
SWFS008-04*	Conveyor Oven, Gas, Commercial	2028	SCG
SWHC023-08	Enhanced Ventilation for Packaged HVAC	2028	PG&E
SWFS004-04	Griddle, Commercial	2028	SCG
SWFS029-03	Rotisserie, Gas, Commercial	2028	SCG
SWHC044-08	Ductless HVAC, Residential, Fuel Substitution	2028	SCE
SWSV013-06	Duct Optimization, Residential	2028	SDGE
SWWH004-05*	Laminar Flow Restrictor, Commercial	2028	SCG
SWPR007-03	Steam Boiler Economizer, Industrial	2028	SCG
SWWH015-05	Demand Control for Centralized Water Heater Recirculation Pump, Multifamily & Commercial	2028	SCG
SWHC041-09	Software-Controlled Switch Reluctance Motor	2028	SCE
SWHC031-08*	Furnace, Residential	2028	SCG
SWWH016-07	Domestic Hot Water Loop Temperature Controller, Multifamily & Commercial	2028	SCG
SWWH032-04*	Solar Thermal Water Heating System, Residential	2028	SCG
SWWH034-04*	Solar Thermal Water Heating System, Commercial and Multifamily	2028	SCG
SWWH014-09	Heat Pump Water Heater, Residential	2028	SCE
SWCR018-06	Reach-In Refrigerator or Freezer, Commercial	2028	PG&E
SWCR007-06	Floating Temperature Controls, Multiplex	2028	PG&E
SWCR001-06	Anti-Sweat Heater Controls	2028	SCE
SWPR003-04	Steam Trap, Commercial	2028	SCG
SWFS002-06*	Door-Type Dishwasher, Commercial	2028	SCG
SWAP003-06*	Clothes Dryer, Residential	2028	SCG
SWFS013-05*	Low-Flow Pre-Rinse Spray Valve	2028	SCG
SWWH026-07*	Water Heater Pipe Wrap, Residential	2028	SCG
SWHC018-06	VSD for HVAC Fan Controls, Commercial	2028	PG&E

Measure Package ID	Measure Name	Program Year	Lead IOU
SWHC050-09	Ductless Heat Pump, Residential	2028	SDGE
SWHC013-09	Unitary Air-Cooled Air Conditioner, Over 65 kBtu/hr, Commercial	2028	SDGE
SWHC058-03*	Patio Heater, Gas, Commercial and Residential	2028	SCG
SWWH019-07*	Faucet Aerator, Commercial	2028	SCG
SWHC001-08*	Wall Furnace, Residential	2028	SCG
SWWH020-07*	Low-Flow Showerhead, Commercial	2028	SCG
SWAP004-05	Clothes Washer, Residential	2028	SCG
SWRE003-05*	Heater for Pool or Spa, Commercial and Multifamily	2028	SCG
SWCR003-05	Fan Motor Retrofit for a Refrigerated Display Case	2028	SCE
SWSV005-05*	Economizer Repair, Commercial	2028	SDGE
SWHC012-06	HVAC Occupancy Sensor, Classroom	2028	SCE
SWRE004-05*	Pool Heater, Residential	2028	SCG
SWHC027-09*	Package Terminal Air Conditioner or Heat Pump, Under 24kBtu/hr	2028	SDGE
SWCR008-06	Floating Suction Controls, Multiplex	2028	SCE
SWFS030-03	Pressure Fryer, Commercial	2028	SCG
SWWH012-07*	Storage Water Heater, Residential	2028	SCG
SWSV010-05	Economizer Controls, Commercial	2028	SDGE
SWCA001-06	VFD Retrofit for Air Compressor	2028	SCE
SWFS018-07	Undercounter Dishwasher, Commercial	2028	SCG
SWCR002-06	Low-Temperature Display Case Doors With No Anti-Sweat Heaters	2028	SCE
SWBE011-02	High Efficiency Window, Residential	2028	SCE
SWFS024-04*	Hot Food Holding Bins, Commercial	2028	SCG
SWFS026-04	Cooktop, Commercial	2028	SCG
SWAP005-05	Ozone Laundry, Commercial	2028	SCG
SWAP006-06*	Dishwasher, Residential	2028	SCG
SWWH003-06*	TSV with and without an Integrated Low-Flow Showerhead, Residential	2028	SCG
SWFS025-04	Radiant Conveyor Toaster, Commercial	2028	SCG
SWHC047-08*	Gas Fireplace, Residential	2028	SCG
SWAP017-05	Oven, Gas, Residential	2028	SCG
SWAP007-06*	Room Air Conditioner, Residential	2028	SDGE
SWWH023-05*	Diverting Tub Spout with TSV, Residential	2028	SCG
SWFS028-03	Steam Table, Electric, Commercial	2028	SCG
SWHC006-07	Demand Control Ventilation for Single Zone HVAC	2028	PG&E
SWFS027-03	Soup Well, Electric, Commercial	2028	SCG
SWAP008-06*	Room Air Cleaner, Residential	2028	SDGE

Measure Package ID	Measure Name	Program Year	Lead IOU
SWBE012-02	High Efficiency Window, Commercial	2028	SCE
SWBE013-02*	Efficient Doors, Residential	2028	PG&E
SWBE014-02*	Door Sweeps and Door Sealing, Residential	2028	PG&E
SWFS032-02	Refrigerated Prep Table, Commercial	2028	SCG
SWFS034-02	Cooktop, Commercial, Fuel Substitution	2028	SCE
SWHC002-07*	Intermittent Pilot Light, Residential	2028	SCG
SWHC011-04*	Furnace, Commercial	2028	SCG
SWHC024-07	Drive Belt for HVAC Fan, Commercial	2028	SCE
SWHC048-05*	Packaged Air Conditioner Heat Recovery, Commercial	2028	SCG
SWHC057-03*	Space Heating Gas Absorption Heat Pump, Multifamily	2028	SCG
SWMI002-04*	No Savings	2028	SDGE
SWWB002-03*	Universal Audit Tool	2028	PG&E
SWWH033-04*	Gas Heat Pump Water Heater, Multifamily	2028	SCG
SWBE015-02*	Door Weatherproofing, Small Business	2028	PG&E
SWBE016-02*	Efficient Sliding Glass Doors, Storefront	2028	PG&E
SWFS031-02*	Range Oven, Gas, Commercial	2028	SCG
SWFS033-02*	Pasta Cooker, Gas, Commercial	2028	SCG
SWSV015-02*	Weather Sealing, Residential	2028	SCG
SWSV017-02*	Duct Seal, Commercial	2028	SDGE
SWHC049-09	Ducted AC and HP HVAC Equipment, Residential	2028	SDGE

*Measure package IDs, version numbers, submission status, approval status, and effective dates may change as measure packages proceed through development and Ex Ante Review. Measure packages marked with an asterisk had not been submitted to CPUC staff for Ex Ante Review as of the date of this resolution. Refer to the eTRM for the current submitted and approved versions.

A3. Measure Package Guidance

Any guidance in this resolution supersedes previously issued guidance on the same subject in *Guidance for Deemed Measures - CEDARS*.