Decision 17-12-010 December 14, 2017

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking into Policies to Promote a Partnership Framework between Energy Investor Owned Utilities and the Water Sector to Promote Water-Energy Nexus Programs.	Rulemaking 13-12-011

DECISION RESOLVING PETITION FOR MODIFICATION OF DECISION 16-12-047, ADOPTING THE PLAN OF ACTION, AND CLOSING RULEMAKING

Summary

This decision approves the unopposed Plan of Action filed by Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Edison Company, and Southern California Gas Company (Joint Utilities) in response to Decision 16-12-047. The Plan of Action describes how the utilities will implement Ordering Paragraph 2 and 4 of Decision 16-12-047.

This decision modifies Decision 16-12-047 to eliminate the compliance obligations established in Ordering Paragraphs 6, 7, and 8, following a staff recommendation and subsequent unopposed petition for modification by Joint Utilities.

This proceeding is closed.

1. Background

"The use of water and the use of energy are intricately intertwined. The extraction, treatment, distribution, and use of water followed by the collection and treatment of wastewater require a lot of energy; likewise, the production of energy—particularly hydroelectric and thermometric power generation—requires a lot of water."[1] For the past decade, the California Public Utilities Commission (CPUC or Commission) and other state and federal agencies have been exploring how to ensure that both the direct and indirect impacts of this interdependency are taken into consideration when making investment decisions in both energy and water resources.

In 2013, the CPUC opened Rulemaking 13-12-011 to explore the relationship between water use and energy use and how policies in one sector impact the other sector. In Decision (D.) 15-09-023 we took an incremental step to adopt a water-energy calculator that quantified how much electric energy it takes to move and treat water, and calculates the associated indirect energy savings. We also adopted an avoided water capacity cost model that calculates an avoided water system capacity cost associated with water savings, which is a required input into the Water-Energy Calculator.

D.16-06-010 approved pilots to test the impact of joint delivery of energy and water data to customers and explored technical issues associated with shared use of the energy utility advanced metering communication network. D.16-11-021 approved a Matinee Pricing Pilot that was intended to encourage a shift in energy use by commercial, industrial, and agricultural users to

[1] https://www3.epa.gov/region9/waterinfrastructure/waterenergy.html.

alternative times of the day when abundant renewable and low water-using energy are produced at high and growing quantities.[2]

D.16-12-047 required that the utilities develop a Plan of Action to address how to: (a) create a greenhouse gas (GHG) emissions reductions value for water-energy nexus energy efficiency measures, and incorporate that value into the Water-Energy Calculator; (b) connect the Water-Energy Calculator with the commonly-used E3 energy efficiency cost-effectiveness calculator and the Database for Energy Efficient Resources (DEER); and, (c) within 6 months of the completion of Southern California Gas Company's (SoCalGas) natural gas study, incorporate into the Water-Energy Calculator a value representing the natural gas embedded in the water system.

In addition, D.16-12-047 required (a) a workshop to develop a communications services outages template to report service outages that impact energy service, energy facilities, and/or grid management and that the electric utilities begin reporting under that template, (b) a workshop to investigate how best to use communications technology to, in a cost-effective manner: protect the safety of the customers they serve, their workers, and utility infrastructure; improve the watershed upon which they rely; mitigate fire danger resulting from dead trees, drought, and other conditions that negatively impact water, energy, and telecommunications infrastructure, workers, and the customers they serve, now and into the future, and (c) a report on the second workshop.

[2] D.16-11-021 at 5.

2. Procedural Background

Since D.16-11-021 and D.16-12-047 issued, several requests to extend or remove a number of compliance obligations have been filed. Because of progress towards modifying the time-of-use periods in utility rate design proceedings, the obligation to enter into pilots to test response to Matinee Pricing has since been eliminated for Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas Electric Company (SDG&E), in D.17-06-004, D.17-06-007, and D.17-11-009 respectively.

The deadline for filing the Plan of Action required by Ordering Paragraph (OP) 3 was extended from February 3, 2017 to "45 days following completion of SoCal Gas' natural gas study, or August 15, 2017, whichever is earlier" by letter of the Executive Director of the CPUC dated January 30, 2017. On August 14, 2017, PG&E, SDG&E, SCE, and SoCalGas (collectively Joint Utilities) requested the CPUC approve their Plan of Action to update the Water-Energy Cost Calculator. No party commented on the Plan of Action.

On July 24, 2017, the Administrative Law Judge (ALJ) issued a ruling seeking comment on a staff analysis and recommendation that proposed eliminating the compliance obligations established in OPs 6, 7, and 8 of D.16-12-047 based on their assessment that a "workshop on the issue at this time would be unjustified and of questionable benefit." Joint Utilities filed comments in support of the recommendation and subsequently filed a petition to eliminate the compliance obligations established in D.16-12-047, OPs 6, 7, and 8. Joint Utilities also recommended that the rulemaking be closed. No party commented on the petition for modification.

3. Issues Before the CPUC

The CPUC must decide whether to approve the proposed Plan of Action, eliminate other compliance obligations as recommended in the petition for modification, and whether any additional issues need to be considered in this proceeding. Each question is addressed in turn below.

4. Should the Plan of Action Be Approved?

Pursuant to D.16-12-047, on August 14, 2017, Joint Utilities filed a motion seeking approval of their Plan of Action. The Plan of Action discussed the three specified tasks in the Ordering Paragraph and recommended a specific course of action for each. Representatives of the utilities and the CPUC's Energy Division met to discuss improvements in addition to the Water-Energy Calculator upgrades required by the Decision. At the request of Energy Division, its "Recommendations for Water Energy Calculator Update," as well as responses to each recommendation from the utilities, are incorporated as part of the Plan of Action.

4.1. Incorporating GHG Value into the Water-Energy Calculator

Joint Utilities recommend using existing tools to calculate GHG emissions reductions that result from water energy savings, rather than incorporating GHG emissions reductions into the Water-Energy Calculator. After discussion with CPUC staff, all parties agreed that GHG emission values should not be incorporated into the calculator at this time.[3]

The Cost-Effectiveness Tool (CET, formerly known as the E3 Calculator) that energy utilities use to evaluate the cost-effectiveness of energy efficiency

[3] Plan of Action at 2.

measures and programs already calculates GHG emissions, and adding the same functionality to the Water-Energy Calculator would be redundant. Furthermore, the methodologies would likely be different, leading to inconsistent results and confusion. Joint Utilities recommend that we reach a better understanding of the needs of water agencies and other stakeholders for whom additions of GHG emissions would be useful before adding GHG emissions to the Water-Energy Calculator. For example, any attempt to quantify emissions within the Water-Energy Calculator will not address all water agency activities, such as emissions related to fleet vehicles, direct emissions from wastewater and sludge digestion processes, etc. without significant effort. Therefore, Joint Utilities recommend that water agencies or other Water-Energy Calculator users seek alternative GHG emissions calculators such as those developed by the American Water Works Association, the Water Environment Research Foundation, ICLEI-Local Governments for Sustainability (ClearPath tool), various universities (such as Clemson) and various water agencies. This would also allow water agencies to select the appropriate calculation methodology to meet their individual needs. In light of the difficulty of quantifying all agency emissions in the Water-Energy Calculator, the use of multiple tools seems unavoidable at this time.

We agree that at this time it does not appear appropriate to add GHG emissions values into the Water-Energy Calculator as it would duplicate the GHG values already included in the CET while simultaneously it would be very difficult to integrate other emission activity associated with water agency operations. Therefore, we adopt the Plan of Action recommendation that we not integrate GHG values into the Water-Energy Calculator at this time.

4.2. Connecting the Water-Energy Calculator to the CET and DEER Database

The purpose of this connection is to include the benefits of water energy savings in the cost-benefit analysis of energy efficiency interventions. Joint Utilities developed three possible approaches to integrating the Water-Energy Calculator and CET. Of these three options, Joint Utilities suggest that Option 3 is the simplest to implement and leads to the most accurate calculation.

Option 3 takes the utility Embedded Energy in kilowatt-hour (kWh) output from the Water-Energy Calculator and inputs it into the CET to calculate a total resource cost (TRC). Option 3 ensures that the TRC calculation for embedded energy is consistent with that for direct energy savings since CET calculations will be performed with the combined total (direct plus embedded) energy savings.[4] The CET has different inputs than the Water-Energy Calculator, therefore, attributes for the direct energy saving measure will be used for the embedded energy savings even if they do not directly apply to the water efficiency portion of the measure (for example, end use load shape, Climate Zone, building type, etc.). While these results are not as accurate as full integration because of the assumptions that must be made for the inputs, from a usability perspective Joint Utilities recommend that this is the best path forward. Because the embedded energy savings are combined with the direct energy savings for purposes of the CET, the CPUC will also need to integrate the

[4] Direct energy savings refers to savings related to reduction of the use of energy for end-use purposes, such as water heating. Embedded energy savings refers to the amount of energy that is used to collect, convey, treat, and distribute water to end users, and the amount of energy that is used to collect and transport wastewater for treatment prior to safe discharge of the effluent. Embedded energy is not associated with a particular facility but with the water itself.

embedded energy with the direct energy savings of a measure when performing TRC calculations in order for utility and CPUC calculations to be the same.[5]

While Option 3 does not directly use the cost-effectiveness functionality within the Water-Energy Calculator, this functionality still serves an important purpose in program planning under Option 3. The cost-effectiveness functionality allows utilities to determine costs, benefits, and rebate amounts which are essential in program planning in conjunction with water agencies. Therefore, we approve the Plan of Action recommendation to use Option 3 to ensure that the CET reflects the Water-Energy Calculator results in program planning.

In addition to the CET, OP 2 of D.16-12-047 directed that the Water-Energy Calculator be integrated with the DEER. The next revision of DEER is scheduled for 2018. Prior to DEER revisions, utilities plan to use a Workpaper process (which reflects Metropolitan Water District (MWD) values) to include water measures as non-DEER measures. We approve the recommendation in the Plan of Action to use a Workpaper process that reflects MWD values until the DEER revisions are completed. DEER should reflect MWD water savings and CET calculators as applicable.

4.3. Incorporating a Value for Natural Gas Intensity in Water into the Water-Energy Calculator

SoCalGas completed its Natural Gas Intensity in Water study which identified recommendations for SoCalGas to consider in incorporating a natural

[5] Plan of Action at 2-3.

gas intensity value into the Water-Energy Calculator.[6] It was expected that if the results showed significant embedded gas, energy intensity values would be added as defaults to the existing fields in the Water-Energy Calculator, but if it were determined that embedded natural gas in the water system was not significant, values would not be added as defaults. The study's analysis identifies the amount of embedded natural gas in water within SoCalGas' service area, range of natural gas intensities observed, and wide variability in natural gas intensities.[7] The study also confirms that while there is much less natural gas used (and available for embedded savings) for water sector purposes, the number is not "zero."[8] Noting the wide variability of energy intensity and lack of a statistically valid sampling technique, there is no basis for extrapolating the average energy intensity observed among participating Water/Waste Water utilities throughout a hydrologic region, multiple hydrologic regions, SoCalGas' service area, or statewide.[9] Further, the study conducted a review of the Water-Energy Calculator to understand the extent of updates needed to the Water-Energy Calculator.[10] Based on the key findings and conclusions in the study[11] and given the existence of the CET calculator (or successor) for computing cost-effectiveness, SoCalGas recommends that default natural gas

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[6] *Natural Gas Intensity of Water*, WaterEnergy Innovations (July 5, 2017), was attached to the motion filed on August 14, 2017.

[7] *Natural Gas Intensity of Water* at 18-23.

[8] *Natural Gas Intensity of Water* at 9. The amount of natural gas embedded in water is provided in Chapter 2. Determinations of energy intensity values are provided in Chapter 3.

[9] *Natural Gas Intensity of Water* at 22.

[10] *Natural Gas Intensity of Water* at 8-9.

[11] *Natural Gas Intensity of Water* at 30.

values not be incorporated into the Water-Energy Calculator. However, SoCalGas does recommend capturing natural gas savings outside of the Water-Energy Calculator within its service territory.

In light of the results of the study, we approve the Plan of Action's recommendation to not integrate default natural gas energy intensity values into the Water-Energy Calculator at this time and direct SoCalGas to continue to identify natural gas energy intensity outside of the Water-Energy Calculator at this time.

5. Should the Joint Utilities Be Relieved of the Compliance Obligations Set Forth in D.16-12-047, OPs 6, 7, and 8?

The August 18, 2017 petition for modification proposes to eliminate the compliance obligations set forth in OPs 6, 7, and 8 of D.16-12-047. In support of their petition, Joint Utilities cited the Staff Recommendation attached to the ALJ Ruling which stated that "there are serious doubts about the value of a workshop to develop a telecommunications reporting template as required by OP 6, a workshop to determine how best to use communication's technology to promote safety as required by OP 7, and workshop reports as required by OP 8."[12]

As set forth in the Staff Recommendation, after studying the energy utility responses to data requests, the Staff concluded that:

- the vast majority of communications facilities and services used by energy utilities are not provided by regulated communications service providers and regulated communications services have not caused power outages;

[12] Petition for Modification of D.16-12-047 at 1-2.

- regulated communications service providers are only used when private networks are not available or as a redundancy;
- all respondents assert that communications service outages do not or have not caused power outages; and
- although a lack of communications service may cause delay in remote restoration efforts, procedures are in place to mitigate the lack of communications in remote locations.

The ALJ's Ruling directed the parties subject to the compliance obligations set forth in OPs 6, 7, and 8 to take appropriate steps to seek to extend or eliminate the compliance obligations consistent with Rules 16.4 and 16.6 of the Commission's Rules of Practice and Procedure (Rules) if they agreed with the Staff Recommendation. Joint Utilities agree with the Staff Recommendation and in their petition requested to eliminate their compliance obligations under Ops 6, 7, and 8. In light of the Staff Recommendation, Joint Utilities argument, and the fact that there is no opposition, the compliance obligations set forth in OPs 6, 7, and 8 of D.16-12-047 should be eliminated.

6. Should Rulemaking 13-12-011 be Closed?

The April 27, 2015 Amended Scoping Memo identified the following scope for this rulemaking: a water-energy cost-effectiveness tool; a mechanism for continued funding for future additions or updates to the water-energy cost-effectiveness tool and user support; actions related to the Water-Energy Nexus to address Governor Brown's Executive Order B-29-15 mandating water use reductions, any future executive orders relating to the drought emergency or water use reductions, as well as any future legislation related to the drought emergency or water use reductions; actions to address the water-energy nexus in multiple contexts; *inter*-agency coordination; *intra*-agency coordination; Water-Energy-Communications nexus; funding and cost sharing; program

evaluation; and identifying safety concerns raised by the issues identified above and propose steps to address those concerns, including reliability, water quality, and fire-fighting resources, and communications interconnection for public safety.

In the prior decisions in this rulemaking as well as the instant decision, the CPUC has addressed a number of matters in the original scope of the rulemaking. In addition, D.16-12-047 acknowledges that the CPUC is addressing infrastructure improvement issues in its ongoing Distribution Resource Planning Proceeding, R.14-08-013, and its Integrated Distribution Energy Resources Proceeding R.14-10-003. The effect of natural disasters on energy utility service is also considered in general rate case proceedings, see for example, D.17-05-013. Petitioners argue that leaving this rulemaking open would result in duplication which "would waste public and ratepayer resources."[13] No party commented on the recommendation to close this proceeding.

This rulemaking has raised and addressed a number of important issues, among others: the energy intensity of water use, the interrelationship of the energy and water industries, establishment of a way to reflect these interrelationships in planning, and the need to establish a spring midday off-peak pricing period. It was also an important forum for raising cross industry issues. It is now time for this proceeding to be closed and for the work to be carried on in other identified forums, and we therefore agree that this proceeding should be closed.

[13] Petition for Modification of D.16-12-047 at 5.

7. Waiver of Comment Period

This is an uncontested matter in which the decision grants the relief requested. Accordingly, pursuant to Section 311(g)(2) of the Public Utilities Code and Rule 14.6(c)(2), the otherwise applicable 30-day period for public review and comment is waived.

8. Assignment of Proceeding

Martha Guzman Aceves is the assigned Commissioner and Michelle Cooke is the assigned ALJ in this proceeding.

Findings of Fact

1. The CET, formerly known as the E3 Calculator, used to evaluate the cost-effectiveness of energy efficiency measures and programs, already calculates GHG emissions.

2. Adding GHG functionality to the Water-Energy Calculator would be redundant.

3. The proposed approach for connecting the Water-Energy Calculator to the CET (Option 3) utilizes direct plus embedded energy savings for the TRC calculation.

4. Energy Division has previously recommended that the DEER include approved water savings from MWD as applicable.

5. The Natural Gas Intensity in Water study identified the amount of embedded natural gas in water within SoCalGas' service area, range of natural gas intensities observed, and wide variability in natural gas intensities.

6. The value of a workshop to develop a telecommunications reporting template as required by OP 6, a workshop to determine how best to use communications technology to promote safety as required by OP 7, and workshop reports as required by OP 8 is not clear in light of the staff's conclusion

that most communications systems utilized by the regulated energy utilities are not provided by regulated communications service providers.

7. There are no remaining issues to decide in this proceeding.

Conclusions of Law

1. GHG emission values should not be incorporated into the Water-Energy Calculator at this time.

2. To ensure that the CET reflects the Water-Energy Calculator results in program planning, the utility Embedded Energy in kWh output from the Water-Energy Calculator should be input into the CET to calculate a TRC.

3. The DEER should be updated to include approved water savings from MWD as applicable.

4. Default natural gas energy intensity values should not be incorporated into the Water-Energy Calculator at this time.

5. The compliance obligations established in OPs 6, 7, and 8 of D.16-12-047 should be eliminated.

6. R.13-12-011 should be closed.

O R D E R

IT IS ORDERED that:

1. The Joint Utilities Plan of Action is adopted in its entirety.

2. When calculating Total Resource Cost in the Cost-Effectiveness Tool, the utility Embedded Energy (kilowatt-hour) output from the Water-Energy Calculator is to be used by utilities for program planning in conjunction with water agencies.

3. The next update of the Database for Energy Efficient Resources, Energy Division must reflect Metropolitan Water District water savings calculation

methodologies, as applicable. Until the update is complete, a Workpaper process must be used to include water measures.

4. Energy Division must implement the updates and enhancements to the Water-Energy Calculator, consistent with the Plan of Action.

5. The compliance obligation, established in Ordering Paragraph 2, of Decision 16-12-047, to integrate default values representing the natural gas embedded in the water system into the Water-Energy Calculator is eliminated.

6. The compliance obligations established in Ordering Paragraphs 6, 7, and 8 of Decision 16-12-047 are eliminated.

7. Rulemaking 13-12-011 is closed.

This order is effective today.

Dated December 14, 2017, at San Francisco, California.

MICHAEL PICKER
President
CARLA J. PETERMAN
LIANE M. RANDOLPH
MARTHA GUZMAN ACEVES
CLIFFORD RECHTSCHAFFEN
Commissioners