

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

ENERGY DIVISION

RESOLUTION E-4788

July 14, 2016

R E S O L U T I O N

Resolution E-4788. Approving, with changes, Southern California Edison's, Pacific Gas and Electric's, and San Diego Gas & Electric's proposed changes to the Demand Response Cost-Effectiveness Protocols.

PROPOSED OUTCOME:

- Approve a final methodology for the F Factor in the Demand Response Cost-Effectiveness Protocols.
- Adopt final Demand Response Cost-Effectiveness Protocols.

SAFETY CONSIDERATIONS:

- Demand Response generally can have health and safety implications in that it helps support local and system reliability and grid needs.

ESTIMATED COST:

- No incremental cost. Funds necessary to update the Demand Response Cost-Effectiveness Reporting Tool were authorized in previous Commission decisions.

By SCE Advice Letter 3386-E, PG&E Advice Letter 4806-E, and San Diego Gas & Electric Advice Letter 2872-E, Filed on March 29, 2016.

SUMMARY

This Resolution approves Southern California Edison's (SCE's) Advice Letter 3386-E, Pacific Gas and Electric Company's (PG&E's) Advice Letter 4806-E, and San Diego Gas & Electric's (SDG&E's) Advice Letter 2872-E (heretofore referred to as "SCE AL 3386-E et al") with modifications.

BACKGROUND

Pursuant to Decision (D.)15-11-042, *Decision Addressing the Valuation of Load Modifying Demand Response and Demand Response Cost-Effectiveness Protocols* ("Decision"), adopted on November 30, 2015, the Investor-Owned Utilities ("IOUs"), Southern California Edison Company ("SCE"), Pacific Gas and Electric Company ("PG&E"), and San Diego Gas & Electric Company ("SDG&E") submitted an Advice Letter ("AL") in compliance with D.15-11-042 Ordering Paragraphs 8 & 18. These Ordering Paragraphs ("OPs") ordered the IOUs to file proposed changes to the Demand Response ("DR") Cost-Effectiveness Protocols ("Protocols") regarding the Flexibility Factor ("F Factor") and other proposed changes.

In accordance with OP 7 of the Decision, Energy Division Staff convened a working group to develop a methodology for capturing the value of flexibility in DR programs, termed the F Factor¹. This working group held its first meeting on December 14, 2015, held a follow-up conference call on January 15, 2016, and presented its findings at a workshop on February 19, 2016, at the Pacific Energy Center. Those findings are included in the IOUs' joint AL filing.

In compliance with OP 17 of the Decision, the IOUs formed a working group to address the DR Cost-Effectiveness ("C-E") Protocols. The working group was facilitated by PG&E, SDG&E and SCE to create a final DR C-E Protocol that completes the work as described in the Decision. The kick-off meeting was noticed to the service lists of the Demand Response Rulemaking (R.)13-09-011 and Integrated Distributed Energy Resources Rulemaking (R.)14-10-003. The kick-off meeting was held via conference call on January 21, 2016. Subsequent working group meetings were held on January 28, 2016, to discuss the A Factor and Renewable Energy Capacity Planning ("RECAP") model and February 4, 2016, to discuss qualitative analysis, D Factor work papers and revisions to the cost-effectiveness reporting tool. Presentations at the workshop on February 19, 2016 were discussed and some modifications were made to the

¹ The DR cost-effectiveness Protocols contain various adjustment factors. These factors are intended to adjust the value of various inputs during C-E analysis to reflect the extent to which the DR program in question actually avoids various costs (i.e., generation capacity costs, transmission and distribution costs, energy costs).

final proposals as described in the Draft Workshop Report, filed March 4, 2016. On March 29, 2016, the IOUs jointly filed SCE AL 3386-E et al in compliance with D.15-11-042 OPs 8 and 18.

NOTICE

Notice of SCE AL 3386-E et al was made by publication in the Commission's Daily Calendar. Southern California Edison states that a copy of the Advice Letter was mailed and distributed in accordance with Section 4 of General Order 96-B.

PROTESTS

SCE AL 3386-E et al was timely protested on April 18, 2016, by the Sierra Club.

SCE, PG&E, and SDG&E responded to the protest of the Sierra Club on April 25, 2016.

Specific protested issues and the IOUs' replies are discussed below.

DISCUSSION

The Commission has reviewed Joint Advice Letter SCE AL 3386-E et al, Sierra Club's protest, and the IOUs' response. We have determined that it is reasonable to adopt the changes proposed to the DR C-E Protocols, with modifications. These changes are included in a red-lined version of the DR C-E Protocols, attached as Appendix A². A final, clean copy of the 2016 Demand Response Cost-Effectiveness Protocols, including all of the changes highlighted in Appendix A, is attached as Appendix B.

² The base text for Appendix A is the clean version of the proposed final DR CE Protocols, which were attached to SCE AL 3386-E, et al, as Attachment B. Red-lined changes to the DR C-E Protocols in Appendix A reflect the changes made to the version in Attachment B, pursuant to this Resolution.

This section is divided into five parts:

- 1) A review of the proposed F Factor methodology.
- 2) A review of the proposed changes to the qualitative analysis portion of the Protocols.
- 3) A review of the proposed changes to the D Factor portion of the Protocols.
- 4) A review of the modifications required in the DR Reporting Tool due to other changes adopted in this Resolution.
- 5) Sierra Club's Protest to SCE 3386-E et al.

SCE AL 3386-E, et al, also contains a proposal for the DR C-E Protocols "A Factor."³ D.15-11-042 ordered that an interim methodology for the A Factor be developed via a workshop. In compliance with this Decision, SCE AL 3386-E et al proposes amendments to the interim A Factor. However, D.15-11-042 also states that "a final interim [A Factor] methodology will be adopted in a future decision."⁴ Thus, the amendments proposed by the IOUs for the A Factor section of the Protocols will be addressed in a future decision, and not in this Resolution.

1. Review of the proposed F Factor methodology.

The Commission has stated its desire to address intermittent generation (i.e., wind and solar resources) and the challenges that integrating such resources onto the grid present. D.15-11-042 finds value in creating additional value for DR resources that are flexible and can respond to the challenges presented by the integration of intermittent resources. According to the Decision, this flexible value should be captured by a new "F Factor" in the DR C-E Protocols. The F Factor is to provide additional value to flexible DR resources for the purposes of C-E analysis.⁵

³ SCE AL 3386-E et al, pp. 3-6.

⁴ D.15-11-042, OP 3.

⁵ D.15-11-042, pp.41-42.

OP 7 of D.15-11-042 orders Energy Division Staff to convene a working group in order to develop a methodology for capturing the proper value of flexible DR for the F Factor. This working group held its first meeting on December 14, 2015, held a follow-up conference call on January 15, 2016, circulated its findings to the service list on February 18, 2016, and presented its proposal at a workshop on February 19, 2016. That same proposal is contained in SCE AL 3386-E et al in accordance with OP 8 of D.15-11-042.

The proposed F Factor methodology would be an “add”⁶, meaning that it can only increase – not decrease – the cost-effectiveness value of a DR program. Therefore, the minimum value for the F Factor would be 100%. This adder would be applied to the avoided generation capacity value of a DR program. In order to be eligible for an F Factor adder, a DR program must satisfy the California Independent System Operator (CAISO) rules for flexible resource adequacy capacity must-offer obligation (“FRAC-MOO”). This involves meeting CAISO’s maximum 3-hour net load ramping need for each month of program availability.⁶ Thus, the proposed F Factor methodology captures the value of ramping, but does not currently capture the value of other flexible program attributes, such as abatement of renewables oversupply conditions. A placeholder will be left in the DR C-E Protocols for the development of a future methodology that can capture flexible attributes beyond ramping. If and when these methods are developed, the IOUs may submit them by Tier 3 advice letter for approval.

In the December 14, 2015, F Factor working group meeting PG&E proposed an F Factor adder of up to 110% (or 1.10). That is, the avoided capacity value of a DR program could be adjusted upwards by as much as 10% during cost-effectiveness analysis if that DR program met both FRAC-MOO and the CPUC’s flexible Resource Adequacy (“RA”) requirements. This “up to 10%” premium is based off of the ratio of RA contract prices with flexible capacity to RA contracts prices without flexible capacity. Based on PG&E’s analysis of its internal, confidential RA procurement costs, PG&E estimates the flexible premium to be up to 10%. Energy Division Staff conducted a more thorough analysis on RA contract price data from PG&E, SCE, and SDG&E and found that the data suggest a similar premium.

⁶ CAISO tariff, Section 40.10.3.3

Broad agreement was found in the F Factor working group for this proposal. Thus, SCE AL 3386-E et al proposes an F Factor adder of 110% (or 1.10). Load Serving Entities (LSEs) would be given the chance to provide justification for the F Factor value used per program in the cost effectiveness workpapers submitted with their CE filing. As stated in SCE AL 3386-E et al:

To qualify for the F Factor, a DR program must satisfy CAISO rules for FRACMOO. Other components of flexibility such as abatement of oversupply are not captured in the F factor at this time. Any DR program meeting the FRAC-MOO obligation qualifies for an F Factor of up to 110% applied to the full avoided generation capacity benefit.

A multiplier up to 1.10 has been agreed to by the parties after consultation with ED. Parties identifying the applicability of the multiplier should provide workpapers to explain the reason for the requested value in the range between 1.00 and 1.10. The parties expect that as more experience is gained analyzing workpaper support for the requested F factor value, the range of the multiplier will be revisited and changes may be proposed by parties or Commission staff.⁷

We have already determined that the value of flexibility of a DR program should be captured in the DR cost-effectiveness Protocols, and find that an adder of up to 1.10 for an F Factor as proposed in SCE AL 3386-E et al is reasonable. Therefore, the proposed F Factor language in the DR C-E Protocols is approved.

2. Review of the proposed changes to the qualitative analysis portion of the Protocols.

The bulk of current DR C-E analysis filed by the IOUs is quantitative in nature and is submitted by the IOUs via spreadsheet (termed the “DR Cost-Effectiveness Reporting Tool”). However, there are other, less easily-quantified inputs that can be included in C-E analysis. The DR C-E Protocols define these inputs as “qualitative.” These qualitative factors include: social non-energy benefits or costs, utility non-energy benefits or costs, program participant non-energy benefits or costs, and market benefits or costs.

⁷ SCE AL 3386-E, p.3.

D.15-11-042 affirms that a qualitative analysis is required as part of a cost-effectiveness analysis.⁸ The Decision asks the IOUs to propose changes to the protocols that will:

“Improve language in the Protocols to address the expectations of the qualitative analysis and make clear that the qualitative analysis is required.”⁹

SCE AL 3386-E, et al, proposes language changes to the Protocols that clarify the expectations of the qualitative analysis, including making clear that the quantitative analysis is required. Those changes are reasonable and can be found in Sections 1.B, 3.I, and 3.J of Appendix A.

We reject, however, some of the changes to the qualitative analysis section proposed in SCE AL 3386-E et al, because they are out of scope of what D.15-11-042 directed. These proposed edits in Sections 1.G, 3.I, and 3.J of Appendix A, are therefore rejected. Many of these edits contain text deleted from the 2015 Demand Response Cost-Effectiveness Protocols by the IOUs in SCE AL 3386-E et al. That text has since been re-inserted into the Protocols.

3. Review of proposed changes to the D Factor portion of the Protocols.

Part of the value of a DR program is its ability to avoid transmission and distribution (“T&D”) investment and upgrades to California’s electricity system. These avoided T&D costs are an input to DR C-E analysis. The DR C-E Protocols allow the value of these avoided T&D costs to be adjusted to reflect the extent to which a DR program actually avoids T&D costs.

The default value of the D Factor is currently 0%. Thus, it is assumed that a given DR program does not avoid or defer any T&D costs unless LSEs can show otherwise in its workpapers. Should an LSE seek to claim a D Factor above 0% for a certain DR program, the current Protocols instruct the LSE to base their analysis around whether that resource can provide value at the right time, right place, right certainty, and right availability.

⁸ D.15-11-042, pp.51-51.

⁹ D.15-11-042, p.59

It is anticipated that the Distribution Resource Plan proceeding (R.14-08-013) will eventually adopt a locational net benefits methodology that can be used by the DR C-E Protocols to capture the value of avoided T&D costs for cost-effectiveness analysis. However, this methodology is yet to be developed, and D.15-11-042 recognized the need to provide an interim D Factor methodology in the meantime.¹⁰ The Decision orders the IOUs to include workpapers justifying their estimates for the D Factor in the C-E analysis filing¹¹ The Decision also ordered the IOUs to provide guidance and expectations for these workpapers¹².

In accordance with D.15-11-042, SCE AL 3386-E et al provides proposed guidance and expectations for the D Factor workpapers. The proposed workpaper guidance contains a more detailed list of example information needed to verify D Factor calculations:

1. D Factor formula used.
2. Narrative description of the D Factor calculation logic.
3. Right Time: Active DR programs are assumed to defer at least a portion of distribution system upgrades costs.
4. Right Place:
 - a. A list of constrained T&D locations for which the IOU is claiming T&D avoided costs for DR programs (circuits in high growth areas or circuits expected to meet or exceed their transformer or substation capacity ratings).
 - b. In-service dates of proposed projects to be deferred all or in part by DR resources if non-proportionality is assumed.
5. Right Availability: Percent of DR program MW that is coincident with the constrained circuit(s) peak.
6. Right Certainty: Attrition/turnover rates, or other evidence, that shows customers are able to meet deferral needs through DR load reductions.

¹⁰ D.15-11-042, pp.38-40.

¹¹ D.15-11-042, OP 5.

¹² D.15-11-042, p.59.

The proposal also contains implicit requests for confidentiality regarding information filed as part of the “Right Place” and “Right Availability” portions of the D Factor analysis. The Commission has previously signaled that the filing of information as confidential should only be done when needed¹³. LSEs are expected to limit the confidential portions of their filing in accordance with the guidelines set out in D.06-06-066 and Public Utilities Code 583.

We find that the remainder of the proposed updates to D Factor workpaper guidance and expectations are reasonable and should help produce a more robust cost-effectiveness analysis. They are therefore adopted.

4. Review of the modifications required in the DR Reporting Tool due to other changes adopted in this Resolution.

The changes to the Demand Response Cost-Effectiveness Protocols approved in this Resolution will require minor changes to the spreadsheet filed by the IOUs that demonstrates their DR C-E analysis, the DR C-E Reporting Tool.

SCE AL 3386-E et al recognizes that modifications to the DR C-E Reporting Tool will be necessary. The modifications to the Reporting Tool should be made in time for 2018 DR program applications, currently scheduled for November 2016. The IOUs request authorization to co-fund a consulting contract – to be paid from the DR Evaluation, Measurement, and Verification (“EM&V”) budget – if it is necessary to hire a consultant to make the Reporting Tool modifications. The scope of work and budget for this project would be discussed and approved by the DR Measurement and Evaluation Committee (“DRMEC”).¹⁴

If a consultant is needed to perform updates to the DR C-E Reporting Tool (and other DR C-E Reporting tools), the IOUs may use existing EM&V funds (up to \$20,000) for this purpose.

¹³ D.06-06-066, p.2.

¹⁴ The DRMEC is composed of members from the CPUC, the California Energy Commission, and a representative from each of the three IOUs. Previous CPUC decisions created the DRMEC and authorized it to oversee the evaluation of statewide demand response activities. This authority was confirmed in CPUC decisions D.06-11-049, D.08-05-027, and D.12-04-045.

5. Sierra Club's Protest:

In its protest, Sierra Club seeks several specific language changes in the Qualitative Analysis section (Section 1.G) of the IOUs' proposed Protocols. Sierra Club seeks these changes principally to make clear that the qualitative analysis is required. D.15-11-042 makes clear that the qualitative analysis is required, and Sierra Club states in its protest that the IOUs' proposed language "fail[s] to make this clarification."¹⁵ Specifically, Sierra Club asks for two changes to the IOUs proposed language in Section 1.G.

First, Sierra Club asks that language pertaining to qualitative benefits in the 2015 DR C-E Protocols be kept in place. Specifically, language in Section 1.G, page 18, of the existing Protocols states that:

"LSEs may argue that they believe these benefits do not exist, but no matter what belief an LSE, or other party, advocates, we expect this analysis to be backed up with research, data, and thoughtful analysis."¹⁶

The IOUs' propose in SCE AL 3386-E et al to amend this language in a manner that seems to make qualitative analysis of a given benefit optional, if an LSE believes that such a benefit doesn't exist.¹⁷ Sierra Club proposes that these edits not be accepted, and that the original language above be kept in the Protocols.

Second, Sierra club seeks to amend a language change proposed in SCE AL 3386-E et al, which reads:

"If an LSE believes a qualitative benefit or cost does not exist, it must explain the reasoning or analysis supporting that conclusion."¹⁸ (*emphasis added*)

¹⁵ Sierra Club protest, p.1.

¹⁶ 2015 Demand Response Cost-Effectiveness Protocols, p. 18.

¹⁷ Sierra Club protest, p.2.

¹⁸ SCE AL 3386-E, et al, Proposed Changes to Section 1.G, p. 8.

Sierra Club believes this language is inappropriate because it suggests that “reasoning” and “analysis” are the same things, and thus that an LSE may supply reasoning in place of analysis when an LSE believes a benefit does not exist. Sierra Club asks the Commission to reject the text “reasoning or”, so that an LSE would still need to provide its analysis demonstrating why it does not believe a certain qualitative benefit exists. Sierra Club notes two more instances of this “reasoning or analysis” discrepancy in the IOUs’ proposed language should also be changed,¹⁹ for consistency.

a. SCE, PG&E, and SDG&E’s Response to Sierra Club’s Protest:

The IOUs respond to Sierra Club’s protest of specific qualitative analysis language by asserting that the revised C-E Protocols were agreed to by all members of the Commission-established working groups present at the February 18, 2016, DR Cost-Effectiveness Workshop.

b. Discussion of Sierra Club’s Protest and the IOUs’ Response

Decision 15-11-042 clearly states a desire to clarify that a quantitative analysis is required:

“Improve language in the Protocols to address the expectations of the qualitative analysis and make clear that the qualitative analysis is required; and...”²⁰
(*emphasis added*)

The IOUs’ proposed language would allow for “reasoning” to be provided in place of “analysis.” This would not be consistent with D.15-11-042. Therefore, we agree with Sierra Club’s clarification on these points and accept Sierra Club’s proposed amendments. The corresponding changes can be found in Sections 1.G, 3.I, and 3.J in Appendix A.

¹⁹ SCE AL 3386-E, et al, Proposed Changes to Sections 3.I and 3.J, p. 9.

²⁰ D.15-11-042, p .59.

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 public review and comment prior to a vote of the Commission. Section 311(g)(2) provides that this 30-day period may be reduced or waived upon the stipulation of all parties in the proceeding.

The 30-day comment period for the draft of this resolution was neither waived nor reduced. Accordingly, this draft resolution was mailed to parties for comments, and will be placed on the Commission's agenda no earlier than 30 days from that day.

Draft Resolution E-4788 was issued on June 7, 2016. No comments were filed.

FINDINGS

1. The F Factor methodology developed by the F Factor Working Group and proposed in SCE AL 3386-E, et al, is reasonable.
2. It is reasonable to clarify the Demand Response Cost-Effectiveness Protocols to reflect that a qualitative analysis is mandatory.
3. It is reasonable to adopt language that provides general clarity to the DR C-E Protocols.
4. Some changes to the qualitative analysis section of the DR C-E Protocols proposed in SCE AL 3386-E et al are out of scope.
5. The IOUs' proposed language in SCE AL 3386-E et al clarifying the expectations for D Factor analysis is reasonable.
6. It is reasonable to allow the IOUs to use up to \$20,000 of existing EM&V budget for updates to the DR C-E Reporting Tool.
7. The Sierra Club's protest is reasonable.

THEREFORE IT IS ORDERED THAT:

1. Joint Advice Letter SCE AL 3386-E, PG&E AL 4806-E, and SDG&E AL 2872-E, is approved with modifications as ordered in this resolution.

July 14, 2016

2. The IOUs may submit improved F factor methodologies by Tier 3 advice letter for Commission consideration.
3. The attached 2016 Demand Response Cost-Effectiveness Protocols are adopted.

This Resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed and adopted at a conference of the Public Utilities Commission of the State of California held on July 14, 2016, the following Commissioners voting favorably thereon:

/s/TIMOTHY J. SULLIVAN
TIMOTHY J. SULLIVAN
Executive Director

MICHAEL PICKER
President
MICHEL PETER FLORIO
CATHERINE J.K. SANDOVAL
CARLA J. PETERMAN
LIANE M. RANDOLPH
Commissioners

Appendix A
2016 Demand Response Cost-Effectiveness Protocols

(red-lined version)

Available online:
<http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=11574>

Appendix B
2016 Demand Response Cost-Effectiveness Protocols

(clean version)

Available online:

<http://www.cpuc.ca.gov/WorkArea/DownloadAsset.aspx?id=11573>