

Decision 16-06-007 June 9, 2016

**BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking to Create a Consistent Regulatory Framework for the Guidance, Planning, and Evaluation of Integrated Distributed Energy Resources.

Rulemaking 14-10-003  
(Filed October 2, 2014)

**DECISION TO UPDATE PORTIONS OF THE COMMISSION'S  
CURRENT COST-EFFECTIVENESS FRAMEWORK**

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## **DECISION TO UPDATE PORTIONS OF THE COMMISSION'S CURRENT COST-EFFECTIVENESS FRAMEWORK**

### **Summary**

This decision adopts, with refinement, immediately-required actions recommended by a working group established to address the Commission's current cost-effectiveness framework. The immediate actions address the issues of avoided cost calculator version control, avoided cost calculator data updates, avoided cost estimation, defining the resource balance year, and defining costs and benefits. These actions are necessary in order to ensure an accurate cost-effectiveness analysis in energy efficiency portfolio applications due in September 2016, while the working group continues to complete final work on its objectives.

### **1. Procedural Background**

An October 9, 2015 Administrative Law Judge (ALJ) Ruling described a Commission staff's proposal for updating the Commission's cost-effectiveness framework (Staff Proposal) and established a working group to address three objectives for updating the Commission's current cost-effectiveness framework (Working Group). The three objectives are: 1) establishing a system for avoided cost calculator<sup>1</sup> version control; 2) developing a process for avoided cost calculator data updates; and 3) developing recommendations related to four elements: a) resource balance year; b) avoided cost estimation; c) costs and benefits definitions; and d) whether to develop a social cost test.

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<sup>1</sup> The avoided cost calculator estimates the costs of the traditional resource, normally a new combustion turbine, that will be avoided when a distributed energy resource is instead procured.

In compliance with the October 9, 2015 Ruling, the Working Group filed a status report “describing the activities of the working group and the progress of the working group in attaining each of the three objectives” (Status Report). While the Working Group continues to meet to reach further consensus on issues,<sup>2</sup> it recommended three groups of actions the Commission should address within the next three months: 1) updating the avoided cost calculator; 2) providing guidance in applicable proceedings; and 3) providing guidance regarding the consensus proposals identified in the report. (See Attachment 1 for details on these “near-term” recommendations.)

Upon review of the Status Report, the ALJ issued a Ruling directing comments to be filed on the Status Report and asking parties to respond to specific questions regarding the recommendations (February Ruling).<sup>3</sup> Parties filed comments and reply comments to the Ruling on March 14, 2016 and March 21, 2016.<sup>4</sup>

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<sup>2</sup> The February 29, 2016 Ruling authorized the Working Group to continue to meet in order to complete its tasks. The Ruling directed that the Working Group should cooperatively develop a final consensus report to be filed no later than May 31, 2016.

<sup>3</sup> *Administrative Law Judge’s Ruling Directing Comments to Be Filed on the February 2, 2016 Status Report of the Integrated Distributed Energy Resources Working Group*, February 29, 2016.

<sup>4</sup> Parties filing comments include: California Energy Storage Alliance (CESA), California Large Energy Consumers Association (CLECA), Karey Christ-Janer, Independent Energy Producers (IEP), Marin Clean Energy (MCE), Office of Ratepayer Advocates (ORA), Pacific Gas and Electric Company (PG&E), San Diego Gas & Electric Company/ Southern California Gas Company (SDG&E/SoCalGas), Sierra Club/Natural Resources Defense Council (NRDC), SolarCity Corporation (SolarCity), Southern California Edison Company (SCE), and The Utility Reform Network (TURN). Parties providing reply comments include Calpine Corporation (CalPine), CLECA, Coalition of California Utility Employees (CUE), ORA, PG&E, SDG&E/SoCalGas, Sierra Club/NRDC, and SCE.

The sole issue in this decision is whether the near-term recommendations provided to the Commission in the *February 2, 2016 Status Report of the Integrated Distributed Resources Working Group* are reasonable and should be adopted.

## 2. Discussion and Analysis

We adopt the near-term recommendations filed in the February 2, 2016 Status Report of the Integrated Distributed Energy Resources Working Group, with refinements as described below.

### 2.1. Non-Controversial Recommendations

We adopt the recommendations as listed in Table A below.

<b>Table A</b>	
<b>Non-Controversial Working Group Recommendations</b>	
1.	The avoided cost model numbering/naming should include dates that change when updated to signify vintage. Dates will dictate versions.
2.	The avoided cost model numbering/naming will no longer be associated with individual distributed energy resource proceedings.
3.	The avoided cost model should be accompanied by a description of changes, all data sources, and a User Guide.
4.	Existing versions of the avoided cost model should not be rationalized with the new numbering/naming convention.
5.	The entity performing the update will implement the numbering/naming convention and supply the required documentation.
6.	The current avoided cost model and supporting documentation should be made public and posted to the Commission website.
7.	Annual process for updating the avoided cost calculator data should be via Commission Resolution, similar to the Market Price Referent.
8.	A single avoided cost model should apply to all proceedings.

Parties were invited to file general comments on the February 2, 2016 *Status Report of the Integrated Distributed Energy Resources Working Group*. The February Ruling also invited comment on the recommendations listed in Table 6 of the ruling, which is reflected in Table A above. The February Ruling specifically requested parties to confirm either agreement with or opposition to these recommendations. No party expressed any objection to the recommendations in Table A.<sup>5</sup> We find these recommendations reasonable and adopt them.

We highlight the eighth recommendation in Table 1 above – that all Commission proceedings focused on the approval, evaluation, or other purpose of a distributed energy resource shall use the adopted avoided cost calculator, as specified in this decision. We clarify that this applies to all Commission proceedings that currently, or will likely in the future, estimate the avoided costs of a distributed energy resource. This does not imply that those proceedings are required to re-visit a previous cost-effectiveness analysis that was done for an existing program or completed study. We require only the latest version of the avoided cost calculator will be used at the next opportunity when cost-effectiveness analysis is required. Relevant stakeholders have been noticed that this issue is in the scope of R.14-10-003. Therefore, relevant stakeholders should be active in this proceeding and aware of the discussion on this issue. However,

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<sup>5</sup> The following parties expressed support for the recommendations in Table 1: Bloom Energy (*see* Bloom Comments at 2.), MCE (*See* MCE Comments at 2.), PG&E (*see* PG&E Comments at 1), SDG&E/SoCalGas (*See* SDG&E/SoCalGas Comments at 2-3) SolarCity (*see* SolarCity Comments at 2-4), and SCE (*see* SCE Comments at 2-3). SCE notes that for the Avoided Cost Calculator to be applied to other proceedings, parties in those proceedings should have an opportunity to discuss the Calculator’s applicability within the relevant proceeding.

in order to ensure transparency with stakeholders, notice of this decision has been provided to the service lists in relevant Commission proceedings.<sup>6</sup>

## **2.2. Avoided Cost Calculator Updates**

We approve the recommendation to update the data for the avoided cost calculator on an annual basis; updates shall be conducted through the Commission Resolution process. The annual data update shall also include updates to the inputs contained in Appendix B of the Status Report and attached to this Decision as Attachment 2. However, the annual update shall not add to or delete from the list of avoided costs in the calculator, or modify (except for correcting errors) the methods or models used to estimate the various avoided costs. As further described below, the Resolution process will provide parties a transparent process and an opportunity to comment on proposed updates and ensure that updates do not exceed authorization described herein.

The avoided cost calculator is used to determine the benefits of resources across many Commission proceedings. The purpose of a routine update is to ensure that the most current information is in the calculator so that the calculator is ready when it is needed to be used for approval of resources. The Status Report recommends that the avoided cost calculator data update process be prescriptive and conducted through a Commission Resolution process on an annual basis. The Status Report explained that this is similar to the Market Price

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<sup>6</sup> Similar to the Order Instituting Rulemaking 14-10-003, this decision is noticed in the following proceedings: Alternative Fueled Vehicles (R.13-11-007), Demand Response (R.13-09-011), Distributed Generation (R.12-11-005), Energy Efficiency (R.13-11-005), Energy Storage (R.10-12-007), Smart Grid (R.08-12-009), Water-Energy Nexus (R.13-12-011), Residential Rate Reform (R.12-06-013), Energy Savings Assistance Program (A.14-11-002), Net Energy Metering (R.14-07-002), and Distributed Resource Planning (R.14-08-013).

Referent update process.<sup>7</sup> In the February Ruling, parties were asked to respond to questions in regards to the avoided cost calculator. The questions addressed the frequency of the avoided cost calculator update, whether any inputs needed to be added to or omitted from the list, whether the inputs should be updated when the avoided cost calculator is updated, and whether inputs should only be updated if a change meets a certain threshold.

Most parties recommend that the avoided cost calculator be updated on an annual basis; only CLECA and MCE argue that updates should occur less often to ensure that program administrators and participants are not affected by changes.<sup>8</sup> Because the process to update the calculator will occur outside any proceeding using the calculator, there should be no direct effect on program administrators or participants. SDG&E recommended that the update be completed by June 1 of each year, in order to ensure the calculator is updated for use in the annual energy efficiency cost justification analysis and report.<sup>9</sup> Parties also support an open and transparent stakeholder process for the annual update<sup>10</sup> and recommend flexibility be built in to allow certain inputs to be in autopilot.<sup>11</sup> While most parties agree with the list of inputs, parties are divided regarding how often the inputs should be updated. Some parties suggested updating the inputs annually and others suggested that the frequency of the

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<sup>7</sup> Status Report at 6.

<sup>8</sup> CLECA Comments at 2 and MCE Comments at 3.

<sup>9</sup> Status Report at 21.

<sup>10</sup> Bloom Energy Comments at 3.

<sup>11</sup> CESA Comments at 2.



input data updates depends upon the frequency of the source data update.<sup>12</sup>

IEPA also suggests that there be more description of the inputs.<sup>13</sup>

Previously in this decision, we approved the Working Group recommendation to adopt an annual process similar to the Market Price Referent. We specify further that the Energy Division, no later than May 1<sup>st</sup> each year, shall draft, for public comment, a Resolution that presents the latest version of the avoided cost calculator, which will include both data updates and minor corrections. Because of the timing of this Decision, the 2016 Avoided Cost Calculator update was not completed by May 1. Energy Division may issue a draft Resolution updating the Avoided Cost Calculator for 2016 after this Decision is adopted. The Resolution may also propose minor modifications to the data inputs which would be used for subsequent updates. This efficient routine timing will allow the updated avoided cost calculator to be used for the annual energy efficiency cost justification report, as well as other proceedings that require the calculator. We adopt the list of inputs recommended by the Working Group in Appendix B of the Status Report (*see* Attachment 2 of this Decision). The inputs shall be considered to be part of the avoided cost calculator.

In regards to the call for transparency, we underscore that the Commission's Resolution process provides for the opportunity to comment on all proposed recommendations for updating the calculator. A proposed Resolution for updating the calculator shall not include any major changes to the *list* of data inputs, addition or deletion of categories or types of avoided costs, or

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<sup>12</sup> SCE Comments at 4 and CESA at 2-3.

modifications of the methods or models used in the calculator. Major changes such as these shall require a petition for rulemaking. Parties who consider a recommended change to be major or not in compliance with this decision shall indicate so in comment to a calculator update in a proposed Resolution.

### **2.3. Avoided Cost Calculator Estimations**

We approve the Working Group recommendation that a single method for hourly time-allocation of avoided generation capacity shall be used in all Commission proceedings across all resources.<sup>14</sup> We direct that the Renewable Electricity Capacity Planning (RECAP) methodology shall be used but, as explained below, permit the use of an additional methodology for enhancement purposes.

The Status Report recommends that a single method for hourly time-allocation of avoided generation capacity costs be used across all Commission proceedings. While the Working Group agreed on one method for hourly time-allocation, there was no consensus on the actual methodology.<sup>15</sup> Hence in the February Ruling, which underscored that many methodologies exist, parties were asked to comment on a preferred methodology, including any that are not in existence.

The Commission has acknowledged the expanding role of distributed energy resources throughout this proceeding.<sup>16</sup> Hence, the Commission adopted

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<sup>13</sup> IEPA Comments at 2.

<sup>14</sup> Status Report at 7.

<sup>15</sup> *Ibid.*

<sup>16</sup> In D.15-09-022, the Commission confirmed that the intention in this proceeding is to focus on the integration of distributed energy resources versus integrated demand side management. Furthermore, the Commission stated that the purpose of this proceeding

*Footnote continued on next page*

a goal that distributed energy resources provide optimal customer and grid benefits, while enabling California to reach its climate objectives.<sup>17</sup> TURN reiterates a similar message in its opening comments to the Ruling, stating that in the future, distributed energy resources will serve many roles including the traditional role of meeting load during peak demand hours but also other roles equating to meeting load during the spring and winter months. We find this logic comports with the stated goal of this proceeding.

TURN recommends that the Commission adopt a consistent methodology for distributed energy resources that allocates avoided generation capacity to a large number of hours of the year.<sup>18</sup> However, TURN did not recommend a specific methodology.<sup>19</sup> Similar to TURN, SCE expresses support of consistency in time-allocation of avoided generation capacity costs across proceedings.<sup>20</sup> SCE contends consistency will provide a fair comparison across different resources and resource types.<sup>21</sup>

SCE offers, as an example of such consistency, its current methodology based on the Loss of Load Probability modeling.<sup>22</sup> SCE states that its model is conceptually similar to the RECAP model, which is recommended by PG&E and

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is to develop a framework to enable a wide portfolio of distributed energy resources. (See D.15-09-022 at 1 and 11.)

<sup>17</sup> D.15-09-022, Ordering Paragraph 4.

<sup>18</sup> TURN Opening Comments at 3.

<sup>19</sup> *Ibid.*

<sup>20</sup> SCE Opening Comments at 6.

<sup>21</sup> *Ibid.*

<sup>22</sup> SCE's LOLP model uses a stochastic methodology for determining the Loss of Load Expectation across 8760 hours in a year.

SDG&E/SoCalGas.<sup>23,24</sup> The RECAP is a third-party Electric Load Carry Capacity (ELCC) model similar to those used in the resource adequacy and renewable portfolio standards proceedings and recently addressed in the demand response proceeding. As noted by SDG&E/SoCalGas, the RECAP model is already embedded in the latest version of the Avoided Cost Calculator.<sup>25</sup>

We find that the RECAP model provides for a consistent methodology for distributed energy resources that allocates avoided generation capacity to a large number of hours of the year. Furthermore, because the Commission has addressed the RECAP model in other proceedings, the model is familiar to the Commission and to a majority of stakeholders. Given that the recommendations presented and adopted here are focused on improving the current cost-effectiveness methodologies on an interim basis, it is reasonable to adopt the RECAP model as the method for hourly time-allocation of avoided generation capacity costs to be used across all Commission proceedings. Furthermore, the RECAP model will be incorporated into the Avoided Cost Calculator as a formal part of the calculator. In keeping with our streamlining efforts, henceforth, any changes to the RECAP model will be made in the same proceeding as the Avoided Cost Calculator.

SCE requests that if the Commission adopts the use of a prescribed methodology, the Utilities should be permitted to use their own model as an alternative methodology. SCE argues that the use of an alternative metric would provide additional information, which could lead to the identification of a need

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<sup>23</sup> PG&E Opening Comments at 3.

<sup>24</sup> SDG&E/SoCalGas Opening Comments at 4.

<sup>25</sup> *Ibid.*

to update the adopted model.<sup>26</sup> Similarly, SDG&E/SoCalGas requests that if local area capacity is a more pressing need than system capacity, the LOLE model used in General Rate Cases should be allowed to be used.<sup>27</sup> SolarCity states its preference for a single methodology, but agrees that the Commission should allow deviation for certain resources and or proceedings.<sup>28</sup> We find it reasonable to allow the use of alternate methodologies *in addition to* the RECAP model.

#### **2.4. Resource Balance Year**

We adopt a change in our method of measuring avoided generation capacity costs. We adopt the practice of estimating avoided generation capacity costs by using long-term costs only (of building generation) rather than both short-term costs (based on resource adequacy prices) and long-term costs. We find that the current system omits Commission clean energy policies, such as the loading order and ignores grid planning processes. As discussed in detail below, this omission places distributed energy resources at a disadvantage to fossil-fueled generation. Hence, we eliminate the use of the resource balance year and, instead, estimate avoided generation capacity based on long-term costs.

The Working Group was tasked with addressing specific questions regarding the use of the resource balance year. The resource balance year is the future year when there is a forecasted need for new generation. While the Working Group does not label this subject as a near-term issue, a delay on these

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<sup>26</sup> SCE Opening Comments at 6.

<sup>27</sup> SDG&E/SoCal Gas Opening Comments at 4.

<sup>28</sup> SolarCity Comments at 8.

questions will delay the implementation of the avoided cost calculator update, which is a near-term issue. As shown in Attachment 1 of this Decision, the Status Report provides three recommendations regarding the resource balance year. First, the Status Report recommends that the source of a resource balance year update should be the most recent long-term procurement plan proceeding decision. The Status Report recommends that uncommitted resources should be removed from any resource balance year analysis so resources can compete against each other. Lastly, the Status Reports requests that other proceedings be guided to use the same resource balance year.

In addition to the three recommendations, the Status Report also explains that the Working Group has not reached consensus on whether to eliminate or maintain the use of a resource balance year. Two options have been discussed by the group: 1) keep the status-quo implementation of resource balance year because the short-term values for avoided generation capacity are based on actual resource adequacy prices, which are the most appropriate comparator for demand-side resources; and 2) eliminate the resource balance year concept and use only the long-term value for avoided generation capacity because the long-term planning process develops a long-term procurement plan that includes demand-side resources.

As we noted previously, the adoption of an avoided cost calculator is a near-term issue. Hence, a determination on whether to keep or eliminate the resource balance year concept is necessary in this decision. In the February Ruling, parties were asked whether avoided generation capacity costs of distributed energy resources should be based only on long-term avoided generation capacity costs or on both short-term and long-term avoided costs, where the dividing line between the two is defined by the resource balance year.

Parties were also asked, if the Commission chooses to adopt the policy that avoided generation capacity costs should be based on both short- and long-term avoided costs, should the Commission adopt the same resource balance year and how could the Commission remedy the impact on demand response resources.<sup>29</sup>

Parties in support of the status quo maintain that the current methodology best reflects the true value of avoided generation capacity costs<sup>30</sup> and that avoided generation capacity costs should be based on the best estimate of the capacity prices in the future and should consider the full value of a resource over the resource's life-cycle.<sup>31</sup> SCE states that the current methodology is necessary to accurately capture the ratepayer costs avoided through distributed energy resources investments.<sup>32</sup> Furthermore, SCE contends that basing the avoided generation capacity costs solely on long-term avoided costs can incorrectly inflate capacity value and lead to biased comparisons between retail and wholesale options.<sup>33</sup> ORA, PG&E and Calpine agree with SCE's assessment, concluding that the avoided generation capacity costs should be based on the best estimate of capacity prices in the future and should ensure that distributed energy resources are only procured if cost-effective compared to other sources of

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<sup>29</sup> The February Ruling noted that demand response resources use only long-term avoided capacity costs in determining avoided costs. Accordingly, for demand response resources, the resource balance year is set to the current year, while other resources use future years.

<sup>30</sup> SCE Opening Comments at 9.

<sup>31</sup> SDG&E at 7.

<sup>32</sup> SCE at 9.

<sup>33</sup> SCE at 11.

resource adequacy capacity.<sup>34</sup> ORA cautions that relying solely on long-term avoided costs would drive over procurement of unneeded resources resulting in excessive ratepayer costs.<sup>35</sup>

Parties supporting the elimination of the resource balance year maintain it reflects the utility's forecast for capacity needed to meet increasing demand in large and lumpy increments. Sierra Club/NRDC argue that the resource balance year is a product of traditional utility planning model that cannot properly account for the capacity benefits of distributed energy resources. Furthermore, Sierra Club/NRDC contend the resource balance year is no longer applicable in the current world of distributed energy resources, whereas distributed energy resources have the potential to offset or delay forecasted capacity additions.

Sierra Club/NRDC state that the resource balance year is based on a theory that the Commission could ascertain that long-term resources will not be needed until a year certain, but contend that the Commission now authorizes resources as needed.<sup>36</sup> The current approach of estimating avoided generation capacity, as illustrated by SCE in its comments,<sup>37</sup> is also the estimation of the economic value of a distributed energy resource, and represents the payments that a resource could expect to receive in future market transactions. During the initial long-term procurement plan (LTPP) proceedings, using the short- and long-term costs was appropriate because LTPP proceedings identified and

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<sup>34</sup> ORA at 4, PG&E at 8, and Calpine at 1.

<sup>35</sup> ORA at 4.

<sup>36</sup> Sierra Club/NRDC Opening Comments at 6.

<sup>37</sup> SCE at 10, Figure 1.



authorized new capacity on a long-term basis.<sup>38</sup> At that time, existing and forecasted distributed energy resources included in the LTPP's load and resource tables could only displace short-term, supply-side capacity within the planning cycle. In current LTPP proceedings, distributed energy resources are displacing new capacity rather than short-term capacity. This change is related directly to distributed energy resources: the need for traditional generation is determined by subtracting existing and future distributed energy resources from the demand forecast. The amount of new generation authorized through the LTPP has been reduced as a result of these resources.

As noted by Christ-Janer, "the resource balance year seems like an artifact of a time when distributed energy resources were not a core focus of the system but a value added that could go away at any time."<sup>39</sup> Most distributed energy resources are first or second in the loading order. Continuing the current system ignores the value of the role distributed energy resources played in past planning decisions and it ignores the Commission clean energy focus, i.e., the Loading Order.

By eliminating the resource balance year, distributed energy resources – almost all of which are first or second in the Commission's Loading Order – receive the appropriate value of avoided supply side capacity. CLECA states that the resource balance year concept disadvantages distributed energy resources because they can be procured on a relatively short-term basis whereas

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<sup>38</sup> Far enough in the future so that the utilities had sufficient time to conduct the complete the entire solicitation-to-build process (approximately 4 to 6 years). CLECA contends that in the LTPP proceedings, needs and resource commitments are determined ten years in advance. (See CLECA at 6.)

<sup>39</sup> Christ-Janer Opening Comments at 7.

procurement commitments for traditional generation resources, and even renewable generation resources are made many years in advance.<sup>40</sup> SolarCity agrees stating that “even in a situation where the large centralized plant turns out not to be needed because of lower than expected load growth, the long-lead time capacity is locked in, undercutting the value of targeted solutions that could have provided a smaller amount of incremental capacity at lower costs.”<sup>41</sup> The use of the resource balance year ignores the fact that the short lead times of distributed energy resources add value to the system. Sierra Club/NRDC underscore that the Federal Energy Regulatory Commission has acknowledged that smaller capacity increments and shorter lead times may affect future capacity needs.<sup>42</sup>

Because the value of capacity equates to its potential availability and not the generation of energy, and because a distributed energy resource is planned for and anticipated in the LTPP process, the determination of value distributed energy resources should equate the capacity value to the costs forecast during the LTPP process. We, therefore, eliminate the use of the resource balance year and adopt the practice of solely relying on the long-term avoided generation capacity costs.

## **2.5. Funding the Calculator Update Process and Technical Assistance**

We approve up to \$100,000 annually in reimbursable funds for the Avoided Cost calculator update process. In addition, we approve \$400,000

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<sup>40</sup> CLECA at 4-5.

<sup>41</sup> SolarCity Comments at 11-12.

<sup>42</sup> Sierra Club/NRDC at 6.

annually, for three years beginning in Fiscal Year 2016-17, in reimbursable funds for ongoing technical assistance to support future phases of cost-effectiveness work in this proceeding.

The February Ruling asked what method the Commission should use to authorize funding for future updates and what amount or ceiling the Commission should authorize. Few parties commented on this issue. PG&E stated that either the Integrated Demand Side Management or the Evaluation, Measurement & Validation budgets could fund the 2016 update with a ceiling of \$500,000. SCE also suggested the IDSM budget. SDG&E recommended continuing the use of the EMV budget or sharing the review across DER proceedings.

In addition, the February Ruling asked whether funds should be authorized to support research for future phases of this proceeding. Few parties commented on these issues. SDG&E/SoCalGas, PG&E, and SCE were opposed to authorizing additional research funding, saying that since research needs for later phases have not yet been determined it is premature to authorize this funding at this time. ORA, Marin Clean Energy, Sierra Club and NRDC, and SolarCity support this funding. No other parties addressed it.

We find that \$100,000 annually is sufficient to complete the calculator update, and we authorize the Executive Director to expend up to this amount in reimbursable funds per the allocations in the table below. We address the special case of the 2016 calculator update, which must commence immediately to support the forthcoming EE filings. Avoided Cost updates have historically been funded through the energy efficiency Evaluation, Measurement & Verification budget authorization, and we assume that the existing scope and authorization within the energy efficiency proceeding can accommodate this update. Going

forward, however, the calculator update should be funded out of new funds authorized in this proceeding in order to ensure that costs are appropriately allocated across all DERs.

Further, we find that future phases of cost-effectiveness work (specifically, Phases 2, 3 and 4 as described in the Staff Proposal<sup>43</sup>) are high priority for the Commission in order to continue to enhance our DER cost-effectiveness approaches and to prepare for integrated resource planning envisioned in R.16-02-007 (and required by SB 350). Given the lengthy state contracting process, it is necessary to begin this process now, even if the precise research or technical assistance objectives are not yet fully defined. We find that \$400,000 annually, for three years, is sufficient to fund necessary technical assistance on future cost-effectiveness methods refinement, and we authorize the Executive Director to expend up to this amount in reimbursable funds per the allocations in the table below.

In summary, commencing in Fiscal Year 2016-17, we authorize reimbursable funds to support the Avoided Cost Calculator update of up to \$100,000 per year, and we authorized an additional \$400,000 annually, for three years beginning Fiscal Year 2016-17, for technical assistance to support future cost-effectiveness methods refinement. Unspent funds from the calculator update may be used to supplement technical assistance funds, and vice versa,

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<sup>43</sup> As noted in the October 9, 2016 ruling (at 1): “Phase 2: Coordinate with [R.14-08-013] to improve the relationship between cost-effectiveness and actual system conditions; Phase 3: Develop Improved cost-effectiveness models and methods to more accurately reflect California policies and goals; and Phase 4: Expand the demand-side cost-effectiveness framework, in coordination with supply-side models, to create an all-source, all-technology valuation framework.”

within an overall cap of \$500,000 for the first three years. Beginning in Fiscal Year 2019-20, the authorization will be \$100,000 per year on a going forward basis until or unless this (or a successor) proceeding determines that we no longer need to update the Avoided Cost calculator. We observe that, in total, these authorizations do not exceed the \$500,000 cap recommended by PG&E for the 2016 calculator update alone.

We authorize the utilities to establish a new memorandum account to track these costs. These funds shall be reimbursed by the utilities based on the current energy efficiency allocation, as determined in R.13-11-005, and shown in the table below for the present day. This allocation may be updated in the future, if needed.

<b>TABLE 3</b>	
<b>Utility</b>	<b>Allocation</b>
Pacific Gas and Electric Company	0.4325
San Diego Gas and Electric Company	0.1088
Southern California Edison	0.3656
Southern California Gas Company	0.0931

### **3. Next Step for the Working Group**

The February Ruling authorized the continuation of the Working Group but required a Final Report with all recommendations be filed no later than May 31, 2016. Additionally, the February Ruling established a comment schedule with opening comments due no later than June 21, 2016 and replies due on June 28, 2016. Following the filing of those comments, this proceeding will address the final Working Group recommendations.

### **4. Comments on Proposed Decision**

The proposed decision of Commissioner Florio in this matter was mailed to the parties in accordance with Section 311 of the Public Utilities Code and

comments were allowed under Rule 14.3 of the Commission's Rules of Practice and Procedure. Comments were filed on May 25, 2016 by California Energy Efficiency Industry Council (CEEIC); Comverge, Inc., EnerNOC, Inc., CPower, and Energyhub (together, the Joint Demand Response Parties), California Large Energy Consumers Association (CLECA), Office of Ratepayer Advocates (ORA), Southern California Edison Company, Pacific Gas & Electric Company and San Diego Gas & Electric Company (together the Joint Utilities); Solarcity; The Utility Reform Network (TURN), and Vote Solar, and reply comments were filed on May 31, 2016 by Sierra Club, Natural Resources Defense Council (NRDC), Clean Coalition, Karey Christ-Janer, Robert Bosch LLC, Joint Parties, CLECA, SEIA, and the Joint Utilities.

## **5. Assignment of Proceeding**

Michel Peter Florio is the assigned Commissioner and Kelly A. Hymes is the assigned ALJ in this proceeding.

## **Findings of Fact**

1. The recommendations in Table A are uncontested.
2. Relevant stakeholders have been noticed that the issue of creating a cost-effectiveness methodology across all distributed energy resources is in the scope of R.14-10-003.
3. Relevant stakeholders should be active in this proceeding and aware of the discussion on the issue of cost-effectiveness methodologies.
4. It is reasonable to require that all Commission proceedings focused on the approval, evaluation, or other purpose of a distributed energy resource should use the adopted avoided cost calculator, as specified in this decision.
5. The avoided cost calculator is used in determining the cost-effectiveness of resources across many Commission proceedings.

6. The purpose of a routine update is to ensure that the most current information is in the calculator so that when the calculator is needed to be used for approval of resources, it is ready.

7. The recommended process for updating the avoided cost calculator is similar to the Market Price Referent update process adopted by the Commission.

8. While most parties agree with the list of inputs, parties are divided regarding how often the inputs should be updated.

9. It is efficient to update the input data at the same time as the avoided cost calculator.

10. It is efficient to only revise the input data when the input's data source has made a revision.

11. The Commission has acknowledged the expanding role of distributed energy resources throughout this proceeding.

12. The Commission adopted a goal that distributed energy resources provide optimal customer and grid benefits and enable California to reach its climate objectives.

13. TURN's statement that distributed energy resources will serve many roles comports with the Commission's goal for distributed energy resources.

14. The RECAP model is a consistent methodology for distributed energy resources that allocates avoided generation capacity to a large number of hours of the year.

15. The RECAP model is familiar to the Commission and to a majority of stakeholders.

16. It is reasonable to adopt the RECAP model as the method for hourly time-allocation of avoided generation capacity costs to be used across all Commission proceedings.

17. The RECAP model is currently incorporated into the avoided cost calculator.

18. It is reasonable to allow the use of alternate methodologies in addition to the RECAP model.

19. The adoption of an avoided cost calculator is a near-term issue.

20. A determination on whether to keep or eliminate the resource balance year concept is necessary in this Decision.

21. The use of the resource balance year ignores the fact that the short lead times of distributed energy resources add value to the system.

22. Continuing the current approach of using short- and long-term costs to determine avoided capacity costs ignores the value of the role distributed energy resources played in past planning decisions and it ignores the Commission clean energy focus.

23. In the past, existing and forecasted distributed energy resources included in the LTPP's load and resource tables could only displace short-term, supply-side capacity within the planning cycle.

24. Now, distributed energy resources are displacing new capacity rather than short-term capacity.

25. The need for traditional generation is equal to the demand minus existing and future distributed energy resources.

26. New generation authorized through the LTPP has been reduced by distributed energy resources.

27. Eliminating the resource balance year provides distributed energy resources with the appropriate value of avoided supply side capacity.

28. The value of capacity equates to its potential availability and not the generation of energy.



29. It is reasonable to eliminate the use of the resource balance year and adopt the practice of solely relying on the long-term avoided generation costs.

30. Funding an update to the 2016 avoided cost calculator is an uncontroversial issue.

31. It is reasonable to approve the funding of an update to the 2016 avoided cost calculator.

32. \$100,000 annually is sufficient to complete the Avoided Cost calculator update.

33. \$400,000 annually, for three years, is sufficient to fund necessary technical assistance on future cost-effectiveness methods refinement in this proceeding.

### **Conclusions of Law**

1. The Commission should adopt the recommendations in Table A of this decision.

2. The Commission should require all distributed energy resource proceedings (including but not limited to the proceedings listed in footnote 6 of this decision, and their successors) to use the avoided cost calculator adopted in this proceeding. The avoided cost calculator does not necessarily apply to evaluations of utility solicitations or the pricing of energy or capacity sold by qualifying facilities.

3. The Commission should adopt the RECAP model as the method for hourly time-allocation of avoided generation capacity costs and incorporate it formally into the avoided cost calculator.

4. The Commission should allow the use of alternate methodologies in addition to the RECAP model.

5. The Commission should eliminate the use of the resource balance year in determining the avoided generation capacity costs and rely solely on long-term costs.

6. The Avoided Cost calculator update should be funded out of new funds authorized in this proceeding in order to ensure that costs are appropriately allocated across all DERs.

## **O R D E R**

**IT IS ORDERED** that:

1. The recommendations from the Integrated Distributed Energy Resources Cost-Effectiveness Working Group regarding the avoided cost model, as identified below, are adopted:

- a. The avoided cost model numbering/naming should include dates that change when updated to signify vintage. Dates will dictate versions.
- b. The avoided cost model numbering/naming will no longer be associated with individual distributed energy resource proceedings.
- c. The avoided cost model should be accompanied by a description of changes, all data sources, and a User Guide.
- d. Existing versions of the avoided cost model should not be rationalized with the new numbering/naming convention.
- e. The entity performing the update will implement the numbering/naming convention and supply the required documentation.
- f. The current avoided cost model and supporting documentation should be made public and posted to the Commission website.
- g. The annual process for updating the avoided cost calculator data should be through the Commission Resolution, similar to the Market Price Referent.

h. A single avoided cost model should apply to all distributed energy resource proceedings (including but not limited to the proceedings listed in footnote 6 of this decision, and their successors).

2. The Commission's Energy Division, no later than May 1<sup>st</sup> each year, shall draft a Resolution recommending data updates and minor corrections to the avoided cost calculator and, when appropriate, the inputs, as described in this decision. Energy Division may issue a draft Resolution updating the Avoided Cost Calculator for 2016 after this Decision is adopted.

3. The list of inputs recommended by the Integrated Distributed Energy Resources Cost-Effectiveness Working Group in Appendix B of the Status Report, and attached to this Decision as Attachment 2, is adopted. The inputs shall only be revised when the input's data source has made a revision, eliminating the need to adopt thresholds to prompt input changes.

4. The Renewable Electricity Capacity Planning (RECAP) model is adopted as the method for hourly time-allocation of avoided generation capacity costs to be used across all Commission proceedings.

5. The RECAP model will continue to be incorporated into the Avoided Cost Calculator, as a formal part of the calculator. Any changes to the RECAP model will be made in the same proceeding as the Avoided Cost Calculator.

6. All entities using the Renewable Electricity Capacity Planning (RECAP) model are permitted to use alternate methodologies *in addition to* the RECAP model.

7. The use of the resource balance year in determining the avoided generation capacity costs of distributed energy resources is prohibited. Avoided generation capacity costs of distributed energy resources shall be based only on long-term avoided capacity costs.

8. The Executive Director may hire and manage one or more contractors to perform an annual Avoided Cost calculator update and to provide technical assistance or research for the purpose of advancing future refinement of cost-effective methods in this proceeding. Such costs, if any, shall not exceed a total annual amount of \$500,000 annually for three years beginning in Fiscal Year 2016-17, and \$100,000 annually thereafter. Any unspent money may be carried over to subsequent fiscal years. The total shall be paid by Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and Southern California Gas Company (SoCalGas) in proportion to the current allocation as determined in the energy efficiency proceeding, R.13-11-005 (or its successor), or as shown in the table above for present-day allocations. This allocation may be updated in the future, if needed. SCE, PG&E, SDG&E and SoCalGas are authorized to establish a new memorandum account for the purpose of recording such payments, and they may record these costs into the account. The memorandum account shall be effective as of the date of the issuance of this decision. The utility is authorized to seek recovery of costs booked to this memorandum account in a general rate case proceeding and should demonstrate that the costs are reasonable and incremental to current revenue requirements.

9. Rulemaking 14-10-003 remains open.

This order is effective today.

Dated June 9, 2016, at San Francisco, California.

MICHAEL PICKER

President

MICHEL PETER FLORIO

CATHERINE J.K. SANDOVAL

CARLA J. PETERMAN

LIANE M. RANDOLPH

Commissioners

**ATTACHMENT 1**

## Working Group Near-Term Recommendations

<b>Table A</b> <b>Recommendations for Avoided Cost Calculator Version Control</b>	
1.	The avoided cost model numbering/naming should include dates that change when updated to signify vintage. Dates will dictate versions.
2.	The avoided cost model numbering/naming will no longer be associated with individual distributed energy resource proceedings.
3.	The avoided cost model should be accompanied by a description of changes, all data sources, and a User Guide.
4.	Existing versions of the avoided cost model should not be rationalized with the new numbering/naming convention.
5.	The entity performing the update will implement the numbering/naming convention and supply the required documentation.
6.	The current avoided cost model and supporting documentation should be made public and posted to the Commission website.

<b>Table B</b> <b>Recommendations for a Process for Avoided Cost Calculator Data Updates</b>	
1.	A process should be prescriptive. Most parties believe it should be annual.
2.	Funding for Updating the Calculator should be approved within the Energy Efficiency budget at least for this year.
3.	Annual process should be via Commission Resolution, similar to the Market Price Referent.

<b>Table C</b> <b>Recommendations for an Avoided Cost Estimation and Proposed Solutions</b>
1. A single avoided cost model should apply to all proceedings.
2. A single method for hourly time-allocation of avoided generation capacity costs should be used across all proceedings and resources.
3. Guidelines for load shapes or adjustment factors to determine the avoided costs of individual programs and measures should be developed.

<b>Table D</b> <b>Recommendations Regarding the Resource Balance Year</b>
1. The sources of a resource balance year update should be the most recent Long Term Procurement Plan decision.
2. Uncommitted resources should be removed from any resource balance year analysis to enable resources to compete against one another.
3. The recommendations adopted here should be adopted in all resources/proceedings.

<b>Table E</b> <b>Recommendations Regarding Defining Costs and Benefits</b>
1. There should be methodological and formulaic consistency across all resources.



## ATTACHMENT 2

### **Working Group Recommendations for Inputs to the Avoided Cost Calculator**