

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



**FILED**

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Order Instituting Rulemaking to Continue  
Implementation and Administration, and  
Consider Further Development, of California  
Renewables Portfolio Standard Program.

R.18-07-003  
(Filed July 12, 2018)

**PETITION FOR MODIFICATION OF THE JOINT UTILITIES TO  
DECISION 19-09-043 TO UTILIZE THE RESULTS OF THE EFFECTIVE LOAD  
CARRYING CAPACITY METHODOLOGY IN THE COMMISSION'S  
INTEGRATED RESOURCE PLANNING PROCEEDING**

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October 14, 2022

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

Order Instituting Rulemaking to Continue Implementation and Administration, and Consider Further Development, of California Renewables Portfolio Standard Program.

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**I. INTRODUCTION**

In accordance with Rule 16.4 of the Rules of Practice and Procedure of the California Public Utilities Commission (“Commission”), Pacific Gas and Electric Company (“PG&E”), Southern California Edison Company (“SCE”), and San Diego Gas & Electric Company (“SDG&E”) – together, the (“Joint IOUs”) – hereby submit this Petition for Modification of Decision (“D.”) 19-09-043 (“Decision”) to Utilize the Results of the Methodology in the Commission’s Integrated Resource Planning (“IRP”) Proceeding (“PFM”).<sup>1</sup> As explained more fully below and supported by the Declaration of Joseph H. Yan, the Joint IOUs urge the Commission to authorize the Joint IOUs to discontinue the annual determination of Effective Load Carrying Capacity (“ELCC”) values in the above-captioned Renewables Portfolio Standard (“RPS”) rulemaking proceeding. Instead, the Joint IOUs request that the determination of ELCC values, which is already undertaken in the Commission’s ongoing IRP proceeding,<sup>2</sup> be adopted

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<sup>1</sup> Pursuant to Rule 1.8(d) of the Commission’s Rules of Practice and Procedure, SDG&E has been authorized to submit this Joint PFM on behalf of SCE and PG&E.

<sup>2</sup> Rulemaking (“R.”) 20-05-003, *Administrative Law Judge’s Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings*, issued June 15, 2022.

for the ELCC of RPS resources. This change will eliminate the potential for inconsistent results, remove analytical redundancies, and increase efficiency in the RPS proceeding. As also explained in the Declaration of Joseph H. Yan, the Joint IOUs could not have filed this PFM within one year of the issuance of the Decision. This is because the Joint IOUs were not aware of the scope of the inconsistency between the ELCC values adopted through the methodology adopted in and the ELCC values adopted through the methodology in use for the IRP until this year.<sup>3</sup>

In support of this PFM, the Joint IOUs attach hereto the Declaration of Joseph H. Yan as Attachment A, that provides the factual substantiation and necessity of the relief requested, as well as the explanation of why this PFM could not be filed within one year of the issuance of the Decision. This PFM explains, in Section II below, why the current ELCC directives in the Decision in the RPS proceeding no longer serve the intended purposes of the ELCC methodology. Instead, using ELCC values developed in the IRP proceeding in the RPS proceeding avoids duplication of effort and provides consistent market signals. Section II in large part reiterates the facts developed in the Declaration of Joseph H. Yan. In Section III below, this PFM requests expedited treatment to avoid unnecessary expenditures in 2023 on a new ELCC study in the RPS proceeding that is duplicative and provides inconsistent signals to the market. In Section IV below, this PFM summarizes the reasons why the Joint IOUs could not have filed this PFM within one year of the issuance of the Decision.

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<sup>3</sup> Rule 16.4(d) of the Commission's Rules of Practice and Procedure states, in pertinent part, "If more than one year has elapsed, the petition must also explain why the petition could not have been presented within one year of the effective date of the decision." As discussed in the attached Declaration of Joseph H. Yan, the Joint IOUs file the PFM now because they were not aware of the scope of the inconsistency between the ELCC values adopted through the methodology adopted in and the ELCC values adopted through the methodology in use for the IRP until this year.

**II. ELCC VALUES ARE ALREADY CALCULATED IN THE IRP PROCEEDING THROUGH A ROBUST AND TRANSPARENT PROCESS TO CONSIDER AND ANALYZE INPUTS AND ASSUMPTIONS AND SHOULD NOT OCCUR IN THE RPS PROCEEDING**

**A. The Commission’s IRP Proceeding Provides an Updated, Centralized Study with Resource Reliability Metrics that Can and Should Be Used in the RPS Proceeding**

In the Decision, the Commission noted, “[c]urrently, the Commission staff has limited resources to conduct additional modeling studies. Moreover, the timing of modeling efforts in the IRP proceeding may not match the timing of RPS procurement. In addition, the ELCC modeling requirements for the RPS proceeding are ... different than those adopted in the IRP proceeding.”<sup>4</sup> In addition to these acknowledged concerns, circumstances have since changed after the Decision was issued; in recent years, Commission staff has conducted reliability studies to estimate marginal ELCC values for renewable resources. On July 19, 2022, the Commission’s Energy Division (“ED”) hosted a Modeling Advisory Group (“MAG”) webinar on “Reliability Filing Requirements for Load Serving Entities’ 2022 Integrated Resource Plans – Results of [Planning Reserve Margin (“PRM”)] and ELCC Studies.”<sup>5</sup> During the MAG webinar, the ED released marginal ELCC results, requiring Load Serving Entities (“LSEs”) to use the marginal ELCC results in their IRP filings. Further, the ED’s “Reliable and Clean Power Procurement Program Staff Options Paper” indicates reliability metrics for renewable resources will continue as a part of the IRP process, stating:

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<sup>4</sup> See D.19-09-043 at 11 (establishing marginal ELCCs as the ELCC methodology primarily used in the RPS).

<sup>5</sup> See, CPUC, Reliability Filing Requirements for Load Serving Entities’ 2022 Integrated Resource Plans – Results of PRM and ELCC Studies (July 19, 2022 Updated July 29, 2022) (“2022 IRP Study Update”) at 38, available at <https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/2022-irp-cycle-events-and-materials/20220729-updated-fr-and-reliability-mag-slides.pdf>.

For addressing reliability, the simplest approach would be to define the total system reliability need, allocate that need to LSEs, define how each resource counts towards that need, establish enforcement actions for noncompliance, and let LSEs and generators minimize procurement costs to meet the need through competitive procurement processes.<sup>6</sup>

The statement referenced above indicates, at minimum, that the ED will continue to develop resource reliability metrics for counting towards total system reliability need – including RPS-eligible resources – which can be used in place of Joint IOUs ELCC study results as one component to inform IOU least-cost best fit RPS procurement evaluations. The IOUs do not request the ED conduct any resource reliability studies in addition to what will be completed in the IRP, nor do the Joint IOUs envision any impact to the IRP schedule and staffing levels. The IRP envisions at minimum, a bi-annual planning portfolio update with resource reliability metrics. The Joint IOUs will use the IRP resource reliability metrics as available on the minimum bi-annual basis to inform least-cost best fit RPS procurement evaluations.

Additionally, the RPS ELCC modeling requirements state, “installed capacities from the Integrated Resource Planning proceeding’s most recently updated base portfolio (Reference System Plan or Preferred System Plan) must be used.”<sup>7</sup> For the current IRP cycle, ED decided not to create a Reference System Plan. Therefore, if the IOUs are required to use the Preferred System Plan (“PSP”) from 2022 for the 2023 RPS Joint IOUs ELCC analysis, there will be no new input assumptions and thus the results will be dated. However, using the results of IRP’s ELCC analysis in the RPS proceeding would allow the IOUs to use ELCC values based on the most recent vetted assumptions without being bound to outdated assumptions.

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<sup>6</sup> CPUC, Reliable and Clean Power Procurement Program Staff Options Paper (September 2022) at 10, available at [https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/procurement-program-staff-options-paper\\_09122022.pdf](https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/energy-division/documents/integrated-resource-plan-and-long-term-procurement-plan-irp-ltpp/procurement-program-staff-options-paper_09122022.pdf).

<sup>7</sup> D.19-09-043, Ordering Paragraph (“OP”) 1 at 32.

**B. The Decision is Overly Prescriptive on Modeling Inputs and Assumptions, resulting in a Calibration Process that Does Not Reflect System Conditions**

The Decision directs the IOUs to calibrate the studied resource portfolio to reach a 0.1 loss of load expectation (“LOLE”) for marginal ELCC calculations and calculate marginal ELCC values using the most recently updated IRP portfolio as the resource baseline.<sup>8</sup> When calibrating a modeled system below a 0.1 LOLE, load can be added or resource generation capacity can be removed from the studied portfolio. However, because the Decision dictates that the IOUs use the installed capacity from the most recently updated IRP portfolio, resource generation capacity for the purposes of calibration in the Joint IOUs ELCC study cannot be removed. Therefore, in order to meet both the LOLE requirement and installed capacities requirement, artificial load<sup>9</sup> must be added. To do so, the IOUs used a load scaling approach<sup>10</sup> in the 2022 Joint IOUs ELCC study.

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<sup>8</sup> The Decision states: “we determine that the RPS proceeding should use the LOLE metric of 0.1, which is the widely adopted reliability standard used in planning studies” and further orders “installed capacities from the Integrated Resource Planning proceeding’s most recently updated base portfolio (Reference System Plan or Preferred System Plan) must be used.” D.19-09-043 at 23 and OP 1 at 32.

<sup>9</sup> As used herein, “Artificial Load” means the addition of customer load that is not forecast under forecasting assumptions to the base 2021 Integrated Resource Planning Policy Report (“IEPR”) load forecast with high electric vehicle penetration adopted by the California Energy Commission. For the purpose of preparing ELCCs adhering to the directives set forth in D.19-09-043, the Joint IOUs’ consultant added the following amounts of “artificial load” to the IEPR peak load forecast in order to achieve the 0.1 LOLE mandated by D.19-09-043: 3,600 megawatts (“MW”) for 2026, 6,100 MW for 2030, and 5,900 MW for 2032. *See* 2022 ELCC Study Report (Final) (“2022 Joint IOUs ELCC Study”) at 16, appended to the July 1, 2022 PG&E, SDG&E, and SCE Effective Load Carrying Capability Study Submission filed jointly as PG&E Advice 6636-E, SCE Advice 4825-E, and SDG&E Advice Letter 4016-E (“July 1, 2022 Advice Letter”).

<sup>10</sup> As used herein, “Load Scaling” means the process by which a load forecast is increased through the use of a multiplier. For the purpose of preparing ELCCs adhering to the directives set forth in D.19-09-043, the Joint IOUs’ consultant applied a multiplier to the base 2021 IEPR load forecast to achieve 0.1 LOLE by scaling the median peak of the 1998-2017 load seed shapes so that it is equal to the load forecast. The resulting multiplier to scale each weather year’s peak was then applied to the rest of the hours of every year. *See* 2022 Joint IOUs ELCC Study at 15.

However, in key respects, the ED’s studies to date have not used the calibration process as required by the Decision. First, the ED’s “Loss of Load Expectation and Effective Load Carrying Capability Study Results for 2024” in the Resource Adequacy proceeding did not add load but iteratively removed and added generation capacity from the studied portfolio.<sup>11</sup> Second, the ED’s IRP PRM and ELCC study mentioned in Section 1, above, calibrated to a 0.1 LOLE but did so by removing resource capacity instead of adding load.<sup>12</sup> Yet, the Decision’s required calibration process is not used in other resource reliability studies and is not consistent with and reflective of system conditions and current best practices. These issues lead to the conclusion that the Commission’s specified calibration process can result in different outcomes that, in turn, would then send conflicting signals to the market and yield different policy outcomes.

**C. ED’s IRP Marginal ELCC Results of July 19, 2022 Updated July 29, 2022 Are Not Consistent With the 2022 Joint IOUs Marginal ELCC Results Primarily Due to Load Scaling Calibration Process Prescribed in the Decision**

As illustrated in Table 1 below, the 2022 Joint IOUs ELCC Study results and the 2022 IRP Study Update results are inconsistent.

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<sup>11</sup> CPUC, Energy Division Study for Proceeding R.21-10-002, Loss of Load Expectation and Effective Load Carrying Capability Study Results for 2024 (February 18, 2022) at 11, <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M452/K750/452750851.PDF>

<sup>12</sup> See, See, 2022 IRP Study Update at 22.

**Table 1: Comparison of 2022 Joint IOUs ELCC Study and the 2022 IRP Study Update Results for 38 Million Metric Tonne (“MMT”) by 2030 Scenario<sup>13</sup>**

Technology	2030	
	2022 Joint IOUs ELCC Study (used in RPS)	ED PRM and ELCC Study(used in IRP)
In-State Wind (SoCal)	13%	8%
In-State Wind (NorCal)	14%	16%
Out-of-State Wind (NM)/ Wind (NM/AZ)	25%	21%
4-hr Battery Storage	58%	75%
Utility PV*	15%	6%
BTM PV	11%	5%

\*Utility PV subcategories are averaged to provide a comparable marginal ELCC

While the inconsistency is partly due to studied portfolio differences, the Decision’s required calibration process to reach the 0.1 LOLE reliability target, discussed above, combined with the requirement to calculate marginal ELCC values using the PSP as the resource baseline, result in marginal ELCC values that are likely distorted by the significant amount of artificial load added in the calibration process. As long as the methodologies are inconsistent, the disparate results from the two different ELCC methodologies cannot be reconciled to each other.

**III. APPROVAL OF THIS PFM IS NEEDED BY THE COMMISSION’S DECEMBER 15, 2022, BUSINESS MEETING SO THE NEW ELCC VALUES CAN BE IMPLEMENTED IN THE RPS PROCEEDING IN MID-2023**

The Joint IOUs respectfully request approval of this PFM by the Commission’s December 15, 2022 business meeting to ensure that prospective RPS procurement cycles incorporate accurate ELCCs informed by the Commission’s IRP process. Resolution of this matter before the end of 2022 will further preserve the Commission’s and IOUs’ resources associated with the production, submission, and review of the annual Joint IOUs ELCC Study

<sup>13</sup> The data for the “2022 IOUs Study” columns can be found at 5-6 of the 2022 Joint IOUs ELCC Study. The data for the “ED PRM and ELCC Study” columns can be found at 42 of the 2022 IRP Study Update.



ordered by the Decision, a process that typically commences in the first quarter of each year.

As described herein, the Joint IOUs do not support the use of ELCC values produced in the 2022 Joint IOUs ELCC Study ordered by the Decision to inform RPS procurement decisions, and instead, support the use of ELCC values adopted in the IRP proceeding to inform RPS procurement decisions. The Joint IOUs find that good cause exists to discontinue the annual preparation of the ELCC study in the RPS proceeding that produces inaccurate results, which in turn would send inaccurate price signals to the renewables market at large. Resolution of this issue by the December 15, 2022, Commission Business Meeting will discontinue the flawed methodology and promote the use of accurate reliability metrics and enable those metrics to be used in the next RPS Plan procurement cycles.

#### **IV. THIS PFM COULD NOT HAVE BEEN FILED WITHIN ONE YEAR OF THE ISSUANCE OF THE DECISION**

The Joint IOUs could not file this PFM by September 2020 within twelve months of the issuance of the Decision, because the methodology problems had not yet been identified. As discussed in the Declaration of Joseph H. Yan, the first two ELCC studies in June 2020 and 2021 did not uncover the fundamental flaws with the methodology adopted in the Decision. However, the 2022 study found fundamental problems with the prescriptive direction provided by the Decision. In their July 1, 2022 Advice providing the 2022 Joint IOUs ELCC Study, the Joint IOUs noted significant methodology concerns<sup>14</sup> which led to the filing of this PFM.

#### **V. CONCLUSION**

In sum, the Joint IOUs urge the Commission to set aside the Decision and instead adopt the proposal set forth in this PFM and its supporting Declaration of Joseph H. Yan, to evaluate

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<sup>14</sup> July 1, 2022 Advice Letter at 2-5.

ELCCs related to RPS as a whole in the IRP proceeding. The Joint IOUs also attach Attachment B containing proposed modifications to the Finding of Fact, Conclusions of Law, and Ordering Paragraphs of the Decision and urge the Commission to make these changes consistent with these modifications to the Decision. Granting this PFM will achieve better supported results, promote judicial economy, and avoid duplicative ELCC analysis in multiple proceedings, which could lead to inconsistent and invalid results.

Respectfully Submitted,

*/s/ Paul A. Szymanski*

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SAN DIEGO GAS & ELECTRIC COMPANY

October 14, 2022

## VERIFICATION

I am an officer of San Diego Gas & Electric Company and am authorized to make this verification. I have read the foregoing **PETITION FOR MODIFICATION OF THE JOINT UTILITIES TO DECISION 19-09-043 TO UTILIZE THE RESULTS OF THE EFFECTIVE LOAD CARRYING CAPACITY METHODOLOGY IN THE COMMISSION'S INTEGRATED RESOURCE PLANNING PROCEEDING**. The statements in the foregoing document are true of my own knowledge, except as to matters which are therein stated on information or belief, and as to those matters, I believe them to be true. I declare under penalty of perjury that the foregoing is true and correct.

Executed on the 14<sup>th</sup> of October 2022 at San Diego, CA.

*/s/ Estela de Llanos* \_\_\_\_\_

Estela de Llanos  
Vice President – Energy Procurement & Sustainability  
San Diego Gas & Electric Company  
[edellanos@sdge.com](mailto:edellanos@sdge.com)

## **Attachment A**

### **Declaration of Joseph H. Yan**

## **DECLARATION OF JOSEPH H. YAN**

I, Dr. Joseph H. Yan, declare and state:

I am a Principal Manager for Price Forecasting and Modeling in the Resource and Environment Planning and Strategy Department at Southern California Edison Company (“SCE”). I prepared this Declaration in coordination with subject-matter experts from Pacific Gas and Electric Company (“PG&E”), San Diego Gas & Electric Company (“SDG&E”), and SCE together, the (“Joint IOUs”). This Declaration supports the accompanying Petition for Modification of SCE, PG&E, and SDG&E to Set Aside the California Public Utilities Commission’s (“Commission” or “CPUC”) Effective Load Carrying Capacity (“ELCC”) Decision (“D.”) 19-09-043 and Order the Use of Reliability Metrics from the Commission’s Integrated Resource Planning (“IRP”) Proceeding<sup>1</sup> to Determine One Element of Their Respective Least-Cost Best-Fit Methodologies to be Used for the Renewable Portfolio Standard (“RPS”) Program Bid Ranking and Selection (“PFM”).

I am familiar with the facts and policy arguments set forth in the PFM. The annual ELCC study required by D.19-09-043 (“Decision”) is not necessary and overly prescriptive in evaluating the cost-effectiveness of RPS resources. This Declaration demonstrates and recommends that an existing resource reliability metric from the IRP framework can and should be utilized for the RPS proceeding, ensuring that the Decision’s calibration process that does not reflect system conditions is not used, and resource reliability metrics studies are not unnecessarily duplicated. This Declaration discusses differences in the two currently used ELCC

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<sup>1</sup> Rulemaking (“R.”) 20-05-003, Administrative Law Judge’s Ruling Finalizing Load Forecasts and Greenhouse Gas Emissions Benchmarks for 2022 Integrated Resource Plan Filings, issued June 15, 2022.

methodologies and demonstrates how those differences impact reliability study results. Based on these facts and the associated problems they present; this Declaration recommends that the Decision inclusive of its ELCC methodology be set aside and replaced entirely by the IRP’s ELCC methodology for use in the RPS proceeding. This Declaration also explains why the Joint IOUs could not have filed this PRM within one year of the issuance of the Decision.

**1. The Commission’s IRP Proceeding Provides an Updated, Centralized Study with Resource Reliability Metrics that Can and Should Be Used in the RPS Proceeding**

In the Decision, the Commission noted, “[c]urrently, the Commission staff has limited resources to conduct additional modeling studies. Moreover, the timing of modeling efforts in the IRP proceeding may not match the timing of RPS procurement. In addition, the ELCC modeling requirements for the RPS proceeding are ... different than those adopted in the IRP proceeding.”<sup>2</sup> In addition to these acknowledged concerns, circumstances have since changed after the Decision was issued; in recent years, Commission staff has conducted reliability studies to estimate marginal ELCC values for renewable resources. On July 19, 2022, the Commission’s Energy Division (“ED”) hosted a Modeling Advisory Group (“MAG”) webinar on “Reliability Filing Requirements for Load Serving Entities’ 2022 Integrated Resource Plans – Results of [Planning Reserve Margin (“PRM”)] and ELCC Studies.”<sup>3</sup> During the MAG webinar, the ED released marginal ELCC results, requiring Load Serving Entities (“LSEs”) to use the marginal ELCC results in their IRP filings. Further, the ED’s “Reliable and Clean Power Procurement

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<sup>2</sup> See D. 19-09-043 at 11 (establishing marginal ELCCs as the ELCC methodology primarily used in the RPS).

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Program Staff Options Paper” indicates reliability metrics for renewable resources will continue as a part of the IRP process, stating:

For addressing reliability, the simplest approach would be to define the total system reliability need, allocate that need to LSEs, define how each resource counts towards that need, establish enforcement actions for noncompliance, and let LSEs and generators minimize procurement costs to meet the need through competitive procurement processes.<sup>4</sup>

The statement referenced above indicates, at minimum, that the ED will continue to develop resource reliability metrics for counting towards total system reliability need – including RPS-eligible resources – which can be used in place of the Joint IOUs ELCC study results as one component to inform IOU least-cost best fit RPS procurement evaluations. The Joint IOUs do not request the ED conduct any resource reliability studies in addition to what will be completed in the IRP, nor do the IOUs envision any impact to the IRP schedule and staffing levels. The IRP envisions, at a minimum, a bi-annual planning portfolio update with resource reliability metrics. The Joint IOUs will use the IRP resource reliability metrics as available on the minimum bi-annual basis to inform least-cost best fit RPS procurement evaluations.

Additionally, the RPS ELCC modeling requirements state, “installed capacities from the Integrated Resource Planning proceeding’s most recently updated base portfolio (Reference System Plan or Preferred System Plan) must be used.”<sup>5</sup> For the current IRP cycle, ED decided not to create a Reference System Plan. Therefore, if the IOUs are required to use the Preferred System Plan (“PSP”) from 2022 for the 2023 RPS Joint IOUs ELCC analysis, there will be no new input assumptions and thus the results will be dated. However, using the results of IRP’s

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<sup>5</sup> D.19-09-043, Ordering Paragraph (“OP”) 1 at 32.

ELCC analysis in the RPS proceeding would allow the IOUs to use ELCC values based on the most recent vetted assumptions without being bound to outdated assumptions.

## **2. The Decision is Overly Prescriptive on Modeling Inputs and Assumptions, Resulting in a Calibration Process that Does Not Reflect System Conditions**

The Decision directs the IOUs to calibrate the studied resource portfolio to reach a 0.1 loss of load expectation (“LOLE”) for marginal ELCC calculations and calculate marginal ELCC values using the most recently updated IRP portfolio as the resource baseline.<sup>6</sup> When calibrating a modeled system below a 0.1 LOLE, load can be added or resource generation capacity can be removed from the studied portfolio. However, because the Decision dictates that the IOUs use the installed capacity from the most recently updated IRP portfolio, resource generation capacity for the purposes of calibration in the Joint IOUs ELCC study cannot be removed. Therefore, in order to meet both the LOLE requirement and installed capacities requirement, artificial load<sup>7</sup> must be added. To do so, the IOUs used a load scaling approach<sup>8</sup> in

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<sup>6</sup> The Decision states: “we determine that the RPS proceeding should use the LOLE metric of 0.1, which is the widely adopted reliability standard used in planning studies” and further orders “installed capacities from the Integrated Resource Planning proceeding’s most recently updated base portfolio (Reference System Plan or Preferred System Plan) must be used.” D.19-09-043 at 23 and OP 1 at 32.

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However, in key respects, the ED's studies to date have not used the calibration process as required by the Decision. First, the ED's "Loss of Load Expectation and Effective Load Carrying Capability Study Results for 2024" in the Resource Adequacy proceeding did not add load but iteratively removed and added generation capacity from the studied portfolio.<sup>2</sup> Second, the ED's IRP PRM and ELCC study mentioned in Section 1, above, calibrated to a 0.1 LOLE but did so by removing resource capacity instead of adding load.<sup>10</sup> Yet, the Decision's required calibration process is not used in other resource reliability studies and is not consistent with and reflective of system conditions and current best practices. These issues lead to the conclusion that the Commission's specified calibration process can result in different outcomes that, in turn, would then send conflicting signals to the market and yield different policy outcomes.

**3. ED's IRP Marginal ELCC Results of July 19, 2022 Updated July 29, 2022 Are Not Consistent With the 2022 Joint IOUs Marginal ELCC Results Primarily Due to Load Scaling Calibration Process Prescribed in the Decision**

As illustrated in Table 1 below, the 2022 Joint IOUs ELCC Study results and the 2022 IRP Study Update results are inconsistent.

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<sup>2</sup> CPUC, Energy Division Study for Proceeding R.21-10-002, Loss of Load Expectation and Effective Load Carrying Capability Study Results for 2024 (February 18, 2022) at 11, available at <https://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M452/K750/452750851.PDF>.

<sup>10</sup> See, 2022 IRP Study Update at 22.

**Table 1: Comparison of 2022 Joint IOUs ELCC Study and the 2022 IRP Study Update Results for 38 Million Metric Tonne (“MMT”) by 2030 Scenario<sup>11</sup>**

Technology	2030	
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Utility PV*	15%	6%
BTM PV	11%	5%

\*Utility PV subcategories are averaged to provide a comparable marginal ELCC

While the inconsistency is partly due to studied portfolio differences, the Decision’s required calibration process to reach the 0.1 LOLE reliability target, discussed above, combined with the requirement to calculate marginal ELCC values using the PSP as the resource baseline, result in marginal ELCC values that are likely distorted by the significant amount of artificial load added in the calibration process. As long as the methodologies are inconsistent, the disparate results from the two different ELCC methodologies cannot be reconciled to each other.

**4. The Joint IOUs Could Not Have Submitted this PFM Within One Year of the Decision’s Issuance Because the Scope of the Inconsistency of the Results between the IRP Marginal ELCC Results and the Joint IOUs Marginal ELCC Results was Unknown at that Time**

This Petition could not be filed by September 2020, that is, within twelve months of the issuance of the Decision, because the methodology problems had not yet been identified. The Joint IOUs filed the first two ELCC studies by June 1 of 2020 and 2021 without finding fundamental flaws with the process. While the two studies identified constructive lessons

<sup>11</sup> The data for the “2022 IOU Study” columns can be found at 5-6 of the 2022 Joint IOUs ELCC Study. The data for the “ED PRM and ELCC Study” columns can be found at 42 of the 2022 IRP Study Update.

learned, no problems were identified that would make use of their results dubious. However, by the time the 2022 study was started, it became evident to the Joint IOUs that there were now fundamental problems with the prescriptive direction provided by D.19-09-043. In the July 1, 2022 Advice Letter providing the 2022 Joint IOUs ELCC Study, the Joint IOUs noted significant methodology concerns<sup>12</sup> which led to the need for this PFM.

Therefore, to resolve the inconsistency in the two methodologies, which cannot be reconciled, and its associated problems, the Commission should discontinue the development of ELCC values in the RPS proceeding, as directed by the Decision, and instead order the IOUs to use in the RPS proceeding the most recent resource reliability metrics developed by the ED in the IRP proceeding. Using the resource reliability metrics developed by the ED in the IRP would ensure uniformity, cross-proceeding efficiency, and eliminate the need for the development of resource reliability metrics based on outdated inputs and assumptions.

I declare that to the extent that this information is factual in nature, it is true and correct to the best of my knowledge and to the extent that this information is in the nature of judgment, it is my best judgment.

Executed on October 14, 2022 at San Diego, California.

/s/ Dr. Joseph H. Yan

Dr. Joseph Yan

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<sup>12</sup> See July 1, 2022 Advice Letter at 2-5.

## **Attachment B**

### **Proposed Modifications to the Finding of Fact, Conclusions of Law, and Ordering Paragraphs of the Decision**

## ATTACHMENT B

Proposed text deletions are in bold and strikethrough (**~~deletion~~**)  
Proposed text additions are in bold and underlined (**addition**)

### Findings of fact

1. The staff proposal defines ELCC as an indicator that shows how well a facility can meet reliability conditions and reduce expected reliability problems or outage events caused by capacity shortfalls.
2. **ELCC** **The Commission** establishes capacity value of new renewable resources in relation to the whole electric system **in the IRP**.
3. Due to increasing penetration of renewable resources, it is prudent and essential to align procurement under the RPS program with future system reliability conditions for effective planning and procurement of renewables.
4. ~~Staff has made reasonable progress to date in determining necessary modeling requirements and clearly identified the benefits of switching to an ELCC method.~~
5. Adopting a standardized approach **for RPS and IRP** will help the Commission maintain consistency between the modeling conventions used in this proceeding and the IRP proceeding.
6. Adopting a standardized **ELCC** methodology for all IOUs will facilitate planning and analysis by the IOUs, industry, and the Commission.
7. ~~The proposed ELCC method considers the impact of an additional RPS eligible resource in relation to the whole electric system.~~
8. ~~The proposed ELCC method conforms with statutory requirements to consider grid reliability in RPS bid selection.~~
9. Running **models analyses** periodically, e.g., **annually**, **in the IRP** will capture the dynamic nature of the market and power grid and keep up with market conditions.
10. ~~Average ELCC studies are used to characterize the capacity value of a whole class or group of resources whereas marginal ELCC studies are used to characterize the capacity value of adding an increment of a given resource type.~~
11. ~~Calculating a marginal ELCC value is the most accurate way to assess incremental capacity value for new RPS resources with respect to the entire electric system.~~

- ~~12. Using average ELCC values would inaccurately inflate capacity contribution from incremental resources.~~
- ~~13. Developing ELCC values for behind-the-meter solar is necessary to compare the ability of these resources to improve system reliability with other supply-side resources.~~
- ~~14. Modeling shorter duration storage may result in higher ELCC values for solar and wind, thus sending a signal of economic viability of co-located storage to market.~~
- ~~15. Given the relatively small amount of storage installed to date, the additional work to model shorter, e.g. 1-hour, storage is likely to outweigh the potential benefits that short duration storage could have on ELCC values. However, the Commission needs to maintain consistency with the IRP modeling requirements.~~
- ~~16. Modeling paired storage facilities with 4-hour durations is necessary due to the amount of 4-hour storage that has been procured to date pursuant to AB 2514 (Skinner), Stats. 2010, Ch. 469.~~
17. Establishing the capacity value of new renewable resources in relation to the whole electric system is The ELCC modeling efforts are resource- and time- intensive.
- ~~18. When conducting a marginal ELCC study, technology types and locations must be differentiated and relatively compared at the generator level.~~
19. There is need for granular location and resource type modeling due to wide variation in production profiles for the same technology type in different locations.
- ~~20. The PSP used in Integrated Resource Planning modeling efforts is currently more refined than the RSP.~~
- ~~21. The Loss of Load Expectation metric of 0.1 is a widely adopted reliability standard used in planning studies.~~
- ~~22. The IRP modeling efforts require a Loss of Load Expectation metric of 0.1.~~
- ~~23. A study year of 2022 is close to the online dates of marginal resources that have already been procured or are being procured now by the IOUs.~~
- ~~24. Additional study years of 2026 and 2030 will be useful in analyzing potential impacts of distributed energy resources and electrification and will serve as a longer-term assessment of system characteristics based on the inputs and assumptions used in Integrated Resource Planning modeling.~~

## Conclusions of Law

1. The staff proposal on ELCC method is fundamentally flawed~~supported by the record~~ and should not be adopted~~as modified~~.
2. We should adopt the methodology adopted in the IRP to determine capacity value of new renewable resources in relation to the whole electric system ~~staff proposal to use marginal ELCC values~~ in RPS bid ranking and selection.
3. The IOUs Petition for Modification of D.19-09-043 is granted.
4. ~~The IOUs should conduct the ELCC study annually to capture dynamic nature of the market and power grid and keep up with the market conditions. Changes necessary to revise the ELCC method should be brought before the Commission for review and approval in draft RPS plans.~~
5. ~~We should adopt the staff proposal to treat behind-the-meter solar as a supply-side resource and develop ELCC values for behind-the-meter solar.~~
6. ~~Given how resource- and time-intensive ELCC modeling efforts are, the ELCC modeling needs should be prioritized.~~
7. ~~Given the relatively small amount of storage procurement that has occurred to date, the additional work to model 1-hour storage is likely to outweigh the potential benefits that short-duration storage could have on ELCC values. Therefore, the IOUs should prioritize modeling only 4-hour duration storage.~~
8. ~~In order to maintain consistency with the IRP modeling requirements and be prepared to evaluate shorter-duration storage resources if need be, the IOUs should next jointly model 1-hour and 2-hour duration storage paired resources.~~
9. ~~The four regions located in the CAISO and three regions located outside CAISO should be studied to capture the differences in generation profiles for the same technology types.~~
10. ~~In order to ensure consistency with IRP without overburdening the modeling entities, IOUs should use a subset of the planning regions used in the IRP production cost modeling.~~
11. ~~The Preferred System Plan should be used for ELCC modeling in the RPS proceeding for 2020 procurement planning.~~
12. ~~The IOUs should use the 0.1 annual LOLE metric in their joint ELCC study.~~

13. ~~Study years of 2022, 2026 and 2030 should be used for the joint ELCC study.~~
14. ~~Using annual ELCC values rather than monthly ELCC values will ensure alignment between the ELCC studies used in the IRP and RPS proceedings.~~

#### ORDER

IT IS ORDERED that:

1. Modeling requirements are adopted for Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) to determine one element of their respective least cost best-fit methodologies, the capacity value of new renewable resources in relation to the whole electric system ~~the Effective Load Carrying Capability (ELCC) values~~, to be used for the Renewables Portfolio Standard (RPS) program bid ranking and selection. These modeling requirements are the use of the capacity value of new renewable resources in relation to the whole electric system adopted in the IRP: ~~(1) The Strategic Energy Risk Valuation Model must be used to determine marginal ELCC values; (2) Behind the meter Photovoltaic (PV) must be treated as a supply side resource; (3) An annual loss of load expectation study must be conducted; (4) Three resource classes (wind, solar PV, and storage) and six resource class subtypes (fixed axis PV, tracking PV, tracking PV paired with storage, distributed PV, wind, and wind paired with storage) must be modeled; four geographic locations located in the California Independent System Operator (CAISO) area and three regions located outside of the CAISO area must be modeled; and installed capacities from the Integrated Resource Planning proceeding's most recently updated base portfolio (Reference System Plan or Preferred System Plan) must be used; (5) The resource portfolio from the 2017-2018 IRP's Preferred System Plan with a study year of 2022, 2026, and 2030 must be modeled for the 2020 procurement cycle. For future procurement cycles, the most recently updated base portfolio from the IRP proceeding must be used with study years of subsequent four year increments.~~
2. As requested in the IOUs' Petition for Modification of D. 19-09-043, the capacity value of new renewable resources in relation to the whole electric system will be determined for the RPS proceeding through the methodology adopted in the IRP.
3. ~~Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), and San Diego Gas & Electric Company (SDG&E) must conduct a joint~~



~~study to determine Effective Load Carrying Capability (ELCC) values for incremental resources eligible for the Renewables Portfolio Standard (RPS) procurement, as described in this decision, in 2020. PG&E, SCE and SDG&E must jointly file their ELCC study results in a Tier 2 Advice Letter by June 1, 2020. PG&E, SCE and SDG&E must jointly file their ELCC study results for 1-hour and 2-hour duration storage paired resources in a Tier 2 Advice Letter by December 31, 2020. PG&E, SCE, and SDG&E must jointly update the modeling annually and file a Tier 2 Advice Letter by June 1 of each year with updated ELCC values, until directed otherwise.~~

4. Rulemaking 18-07-003 remains open.