

Decision **PROPOSED DECISION OF COMMISSIONER GUZMAN ACEVES**
(Mailed 6/12/2020)

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Develop a Successor to Existing Net Energy Metering Tariffs Pursuant to Public Utilities Code Section 2827.1, and to Address Other Issues Related to Net Energy Metering.

Rulemaking 14-07-002

And Related Matter.

Application 16-07-015

DECISION ADOPTING STANDARDIZED INPUTS AND ASSUMPTIONS FOR CALCULATING ESTIMATED ELECTRIC UTILITY BILL SAVINGS FROM RESIDENTIAL PHOTOVOLTAIC SOLAR ENERGY SYSTEMS

Summary

This decision adopts standardized inputs and assumptions to be used by solar providers in the calculation and presentation of expected electric utility bill savings to residential consumers of photovoltaic solar energy systems.

This proceeding remains open.

1. Background

California Public Utilities Code¹ Section 2854.6(a), enacted by Assembly Bill (AB) 1070 (Stats. 2015, 2017, Ch. 662), directs the California Public Utilities Commission (Commission or CPUC) to “develop standardized inputs and assumptions to be used in the calculation and presentation of electric utility bill savings to a consumer that can be expected by using a solar energy system by vendors, installers, or financing entities.”

On July 18, 2019, the assigned administrative law judge issued a ruling inviting comments on a staff proposal for standardized inputs and assumptions, in accordance with Public Utilities Code Section 2854.6(a), and a process for developing an online calculator to estimate electric bill savings (initial staff proposal). The initial staff proposal also includes recommendations for the applicability and enforcement of standardized inputs and assumptions. In summary, the initial staff proposal recommends:

1. Standardization of the following inputs or assumptions:
 - a. Annual electricity consumption
 - b. Solar electricity generation
 - c. Rate schedules (before and after installing solar)
 - d. Average escalation of electricity provider residential retail rates
 - e. Annual degradation rate of the solar energy system (panels and inverter)
2. Estimated electric bill savings should be calculated for the first 20 years following interconnection of a system.

¹ Unless otherwise stated, all subsequent references are to California statute.

3. Upon request by a customer, solar providers² must make all steps and figures in the calculation process available to the customer prior to the point of sale. Solar providers must also make this information available to Commission staff, upon request.
4. Every solar provider who intends to enter into a transaction with a customer should be required to calculate and present estimated electric bill savings, using the standardized inputs and assumptions adopted by the Commission.
5. The requirement to calculate and present estimated bill savings, using the standardized inputs and assumptions, should become effective within 120 days after the Commission adopts standardized inputs and assumptions.
6. Estimated electric bill savings calculations should be within scope of an administrative penalty mechanism, as contemplated in Decision (D.) 18-09-044, and should be expanded to all investor owned utility (IOU, including applicable small and multi-jurisdictional utility³) service territories
7. The CPUC may modify the standardized inputs and assumptions in the future based on new information or other factors.

The initial staff proposal also includes a number of questions for which the July 18, 2019 ruling invited stakeholder input.

On August 13, 2019, Commission staff held a workshop to present the details of the initial staff proposal and to address questions and receive comments from stakeholders.

² As defined in Decision 18-09-044: “We define solar providers as vendors, installers, financing entities, and contractors involved in the sale, lease, or power purchase agreement (PPA) of a rooftop solar energy system and applying to interconnect customers to the utility’s distribution system. This definition is consistent with AB 1070’s use of solar energy systems companies and solar contractors.”

³ Pacific Gas and Electric Company, Liberty Utilities (CalPeco Electric) LLC, PacifiCorp, ¶ San Diego Gas & Electric Company, and Southern California Edison Company.

On August 27, 2019, Aurora Solar, California Solar and Storage Association (CALSSA) and Solar Energy Industries Association (SEIA) (jointly, CALSSA/SEIA), California Energy Storage Alliance (CESA), Coalition of California Utility Employees (CUE), Pacific Gas and Electric Company (PG&E), Solar Consumer Advisor (SCA), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E), and The Utility Reform Network (TURN) filed comments in response to the ruling. On September 6, 2019, Aurora Solar, CALSSA and SEIA, PG&E, SCA, SDG&E, and TURN filed reply comments.

Commission staff modified the staff proposal in response to party comments (modified staff proposal); a copy of the modified staff proposal is included in this decision as Attachment A (redlined from initial staff proposal) and Attachment B (final, without redlines).⁴ We address parties' comments to the extent they pertain materially to the determinations we reach in this decision.

2. Adoption of staff proposal

This decision adopts the modified staff proposal, ~~as modified~~[which includes changes to the initial staff proposal](#) in response to party comments. In this section we discuss the key aspects of the modified staff proposal, focusing on the major policy determinations, which inform our consideration of the specific recommendations for standardized inputs and assumptions.

2.1. Applicability of standardized inputs and assumptions; duration of savings estimates

The modified staff proposal recommends requiring that every solar provider who intends to enter into a photovoltaic solar transaction with a residential customer⁵ in the state of California (except for new housing construction where a solar system is installed prior to sale) calculate and present

⁴ The final version of the modified staff proposal (i.e., without redlines) is also posted to the Commission's website at the following url: www.cpuc.ca.gov/ab1070revisedstaffproposal.

⁵ As defined by the customer's current customer class with their electric utility.

estimated electric bill savings to the customer, and this calculation must use the staff proposal's standardized inputs and assumptions. Related to this requirement, the modified staff proposal recommends that estimated electric bill savings be calculated for the first 20 years following interconnection of a system. We adopt this requirement, with the following modifications: the required bill savings estimate shall consist of (1) average electric utility bill savings for the first year following interconnection, and (2) net electric bill savings for the first 20 years following interconnection (i.e., incorporating degradation rates, utility escalation rates, etc.) to enable comparison of multiple quotes. As explained further in Section 7 of the staff proposal, this requirement would be effected via inclusion of the bill savings estimate (based on the standardized calculation inputs and assumptions) in the supporting information pages of the Solar Energy System Disclosure Document (together, disclosure document), which state law requires be presented to all prospective solar consumers.⁶ If a solar provider presents a bill savings ~~estimates~~estimate to a customer prior to the point of sale, this bill savings estimate (based on the standardized calculation inputs and assumptions) must be presented to the customer at that time as well.

This requirement will not preclude providers from ~~developing their own methodologies for savings calculations and also~~ presenting ~~those~~ estimates ~~as well; parties~~based on alternative inputs or methodologies. Parties raised that developers' proprietary calculations often reflect factors that are tailored to the individual consumer. The modified staff proposal provides that solar providers

⁶ Business and Professions Code Section 7169(a): "The board, in collaboration with the Public Utilities Commission, shall develop and make available a "solar energy system disclosure document" or documents that provide a consumer, at a minimum, accurate, clear, and concise information regarding the installation of a solar energy system, total costs of installation, anticipated savings, the assumptions and inputs used to estimate the savings, and the implications of various financing options."

may also present an alternative calculation, i.e., an estimate of bill savings using different inputs and assumptions, except for the assumed annual escalation of electricity provider rates, which must follow the modified staff proposal in all cases. Any bill savings estimate based on an alternative calculation must be presented side-by-side with the required bill savings estimate (using CPUC-approved standardized calculation inputs and assumptions). Further, the modified staff proposal recommends permitting solar providers to also present bill savings estimates that use alternative scenarios of the customer's future energy consumption, but such estimates must clearly explain they are not based solely on the customer's historic consumption.

CALSSA/SEIA assert the Commission should not require solar providers to present a bill savings estimate to customers, primarily because CALSSA/SEIA assert the Commission lacks authority to adopt such a requirement, but also because "[a]n increasing number of businesses are moving away from savings estimates and relying on those non-savings factors when speaking with customers."⁷ This latter assertion appears highly dubious, and CALSSA/SEIA offer no evidence to substantiate this claim. One of the primary advantages of distributed solar to a customer is bill savings; we are skeptical of claims that solar providers would not make claims or estimates about potential savings to customers. But even if it is true, solar advertisements that tout such savings are and have been so prevalent in the past several years that it is reasonable to assume find, non-financial motivations notwithstanding, that customers expect to save *some* amount on their electric bills by installing solar.

Therefore, it is reasonable to require that all prospective solar customers be provided an estimate of the electric bill savings they can anticipate from installing a solar energy system. With respect to CALSSA/SEIA's assertion that

⁷ CALSSA/SEIA opening, at 4.

the Commission lacks authority to adopt such a requirement, we disagree as such a requirement is necessary and convenient in the exercise of our jurisdiction over the utilities' interconnection processes. Requiring some measure of transparency into anticipated bill savings is clearly "cognate and germane" to our exclusive authority over public utility matters, which includes but is not limited to the power to "protect the people of the state from the consequences of destructive competition and monopoly in the public service industries," as well as excessive charges.⁸

Although we find good reason to require that solar providers calculate and present electric bill savings estimates, based on the modified staff proposal's inputs and assumptions, we recognize the need to balance the potentially competing values articulated in AB 1070, *i.e.*, for consumers to receive "accurate, clear and concise" information on solar energy systems, given Aurora Solar and CALSSA/SEIA's assertions that PVWatts is too simplistic to be sufficiently accurate for solar providers' purposes, and similar concerns raised during the August 13, 2019 workshop about tradeoffs between accuracy and conciseness. The modified staff proposal strikes a balance among accuracy, clarity and

⁸ Public Utilities Code Section 701. See also *Sale v. Railroad Com.* (1940) 15 Cal.2d 612, 617. See also *Order Instituting Rulemaking to Implement Senate Bill No. 1488 Relating to Confidentiality of Information – Order Granting Limited Rehearing of Decision 06-12-030 and Denying Rehearing of Decision in All Other Respects* [D.09-03-046] (2009), at 19 ("We also underscore our duty and commitment to protecting the interests of ratepayers and ensuring that Californians are not subject to experiencing abuses similar to those visited upon the State during the 2000-01 Energy Crisis."); *Order Instituting Rulemaking to Consider Refinements to and Further Development of the Commission's Resource Adequacy Requirements Program – Decision of Phase 2 – Track 2 Issues: Adoption of a Preferred Policy for Resources Adequacy* [D.10-06-018] (2010), at 13 ("[W]e cannot neglect our other primary public duty: protection of ratepayers from excessive charges...."). Separately, the plain language as well as the legislative analysis of AB 1070 make clear the legislature's intent that solar providers must present anticipated savings to customers as part of the standard disclosures for which CSLB is required to develop a solar energy disclosure document. In particular, see the June 22, 2017 bill analysis of the Senate Committee on Business, Professions and Economic Development (for May 2, 2017 version of AB 1070), accessible at the following url: http://leginfo.legislature.ca.gov/faces/billAnalysisClient.xhtml?bill_id=201720180AB1070#

conciseness by selecting a limited number of inputs and assumptions to standardize, while providing that solar providers may present alternative calculations (using alternative inputs) and alternative scenarios of future energy consumption. For all alternative calculations and scenarios, solar providers must provide a side-by-side comparison between the standardized inputs and assumptions and the inputs and assumptions used in their alternative calculations and scenarios, and a plain language statement of the factors that lead to the different outcomes; solar providers must retain copies of these disclosures for at least 12 months after the permission to operate date for auditing purposes, as discussed further in Sections 2.2 and 2.4.

~~PG&E~~, SCA, SCE, and TURN assert solar providers should not be permitted to present alternative calculations and/or alternative scenarios; TURN argues that doing so would defeat the purpose of the standardized approach and, further, “sales representatives will orally represent to customers that the ‘state-mandated approach’ is deeply flawed and suggest that the vendor’s own analysis is far superior.”⁹ We do not agree that allowing alternative calculations defeats the purpose of a standardized approach. In cases where a customer seeks offers from multiple providers – a practice endorsed by both government and industry¹⁰ – customers should receive standardized bill savings estimates (from different solar providers) that are comparable to each other. Only alternative calculations and alternative scenarios, if offered, should differ substantially from one provider to the next. However, TURN’s latter concern regarding a solar provider’s presentation of its own estimate as superior is valid, particularly in

⁹ TURN opening, at 2.

¹⁰ See SEIA’s *Residential Consumer Guide to Solar Power*, Version 4 (June 2018), at 4 (accessible at <https://www.seia.org/research-resources/residential-consumer-guide-solar-power>); CSLB’s Solar Smart webpage (<http://www.cslb.ca.gov/solar>); and the CPUC’s *California Solar Consumer Protection Guide*, Version 2 (September 2019), at 4 (accessible at <https://www.cpuc.ca.gov/solarguide/>).

situations where a customer does not seek multiple bids but may instead be solicited by a door-to-door salesperson or otherwise targeted directly. We address this concern through the one major modification to the initial staff proposal specifics, annual escalation of electricity provider rates, which we discuss further in Section 2.5.

With respect to accuracy, estimates using long-term forecasts of any kind are inherently uncertain, and may thus prove radically inaccurate. Therefore, as suggested by SDG&E and SCE, any bill savings estimate should be accompanied with language regarding the inherent uncertainty of such estimates, especially those spanning any timeframe longer than one year. The public interest is served by providing a transparent explanation that bill savings estimates are just estimates, not guaranteed amounts, and that numerous factors will impact the actual bill savings that customers ultimately realize from installing a solar energy system. This decision directs Commission staff to work with the CSLB to incorporate standardized language that identifies uncertainties in bill savings estimates into the solar disclosure ~~form~~ document.

2.2. Transparency of bill savings calculations

The initial staff proposal recommends that all steps and figures in the calculation process be made available to a customer, if requested by the customer, prior to the point of sale. The initial staff proposal also provides that solar providers must make this information available to Commission staff, also upon request.

CALSSA/SEIA request clarification of the specific information solar providers should provide to consumers, and suggest consumers will have little use for the highly detailed and lengthy dataset used to calculate their bill savings estimate. CALSSA/SEIA instead suggest that solar providers disclose the

standardized inputs and assumptions and “other reasonable inputs” such as tilt and azimuth. We generally agree that most consumers will not endeavor to reproduce savings calculations, therefore it is not crucial for solar providers to provide such information to consumers. Thus, the modified staff proposal omits this requirement.

To the extent customers do wish to calculate savings estimates, the online calculator to be developed in the second phase discussed in the modified staff proposal should enable such calculations, and should be open source.

On July 1, 2020, Energy Division staff notified the service list of this proceeding that the solicitation request for offers to develop the online calculator had been cancelled, due to budget constraints as a result of the COVID-19 pandemic. It is uncertain whether and when the Commission would release a new solicitation for development of the online calculator. In comments to the proposed decision, TURN and the large electric IOUs emphasize the need for an online calculator, while Energy Toolbase and SEIA oppose development of an online calculator. Given the current uncertainty and opposing positions about whether the Commission should develop an online calculator, as an interim approach, we will authorize Commission staff to identify existing, publicly available calculators that customers (as well as providers without their own such tools) could use to estimate electric bill savings.

Regardless of whether the Commission contracts with a third party to develop an online calculator in the future, solar providers will be required to provide key inputs and assumptions to customers ~~as part of the supplemental disclosure forms under development by the CSLB.~~ These key inputs and assumptions should include, at minimum:

- Panel capacity (kW);

- inverter capacity (kW);
- tilt (degrees);
- azimuth (degrees);
- assumed inflation rate ~~(if presenting estimates in real dollars);~~
- assumed discount rate ~~(if presenting estimates in present value);~~ and
- other inputs deemed necessary by Commission staff.

~~We will direct Commission staff to work with the CSLB to ensure the disclosure document requires solar providers to identify key inputs and assumptions used in any electric bill savings calculations presented to a customer.~~ Solar providers must retain copies of all inputs and assumptions (i.e., both the standardized inputs and assumptions and any alternative inputs and assumptions used to develop alternative calculations or scenarios) used to calculate and present bill savings estimates to customers for at least 12 months following the permission to operate date.

~~There~~Further, there remains, ~~however,~~ a need for transparency of all steps and figures in the calculation process. The Commission must retain the ability to review documentation (1) to determine whether solar providers are using the standardized inputs and assumptions, and (2) to reproduce savings estimates in cases where solar providers present alternative calculations or scenarios. The modified staff proposal recommends directing the electric utilities to collect all steps, figures and backup documentation in the calculation process for at least 100 interconnection applications, as part of the semi-annual audit process ordered in D.18-09-044. In comments to the proposed decision, SEIA recommends further clarifying the intended scope of “steps, figures and documentation” specifically to exclude source code used to estimate savings, asserting such code is confidential and proprietary. We clarify that the electric

utilities need not collect source code, but they must collect all inputs and assumptions used (including, for instance, shading reports), along with the programs used and a spreadsheet of the hourly data for at least 100 interconnection applications. Recognizing that this requirement may benefit from further refinement, we will delegate authority to modify this requirement via a letter from the Commission's Energy Division director or his/her/their appointee.

2.3. Effective date of standardized inputs and assumptions

The modified staff proposal recommends the requirement for solar providers to calculate and present bill savings estimates, using the modified staff proposal's standardized inputs and assumptions, take effect 120 days after the effective date of this decision. CALSSA/SEIA and Aurora Solar caution against this recommendation, noting a connection between the proposed effective date and proposed enforcement of this decision. CALSSA/SEIA also express concern that the CSLB may not have finalized the supplemental ~~disclosure forms,~~ through information pages, in which the bill savings estimate must be presented, in time for the IOUs to make the necessary modifications to their interconnection portals for these documents to be uploaded. Aurora Solar asks for a one-year grace period for enforcement of this decision to take effect, arguing that solar providers need more than 120 days to adjust and train, and to make changes to third-party software tools.

As the modified staff proposal states, Commission staff is collaborating with the CSLB on inclusion of the bill savings estimate in the supplemental ~~disclosure forms~~information pages. It is our expectation that the CSLB will finalize the supplemental ~~disclosure forms~~information pages in time for the IOUs to modify their interconnection portals, and we are not at this time persuaded

that solar providers will need more than 120 days to adjust their practices or processes. For flexibility, however, and as we have afforded in past decisions, we will authorize the Energy Division director or his/her/their designee to modify the effective date of the electric bill savings calculation and presentation requirement we adopt in this decision.

2.4. Enforcement

As previously mentioned, the modified staff proposal recommends requiring that the bill savings calculation that uses the modified staff proposal's standardized inputs and assumptions be included in the disclosure ~~documents developed by CSLB. This decision directs the IOUs to include this requirement in the scope~~ document developed by CSLB. As of the issue date of the proposed decision, the CSLB had not yet finalized the supporting information pages of the disclosure document. Although AB 1070 specifies that the CSLB collaborate with the CPUC in developing the disclosure document, the CSLB has primary responsibility for the final form and content of the disclosure document. We expect that the supporting information pages will require solar providers to include the bill savings estimate, but not necessarily the inputs or assumptions used to produce the estimate. Rather than require the uploading of a new document that includes solar providers' inputs and assumptions as part of the interconnection process, we will require solar providers to retain copies of all inputs and assumptions (i.e., both the standardized inputs and assumptions and any alternative inputs and assumptions used to develop alternative calculations or scenarios) used to calculate and present bill savings estimates to customers for at least 12 months following the permission to operate date. The electric IOUs shall collect these documents as part of the semi-annual spot audits required in D.18-09-044. The IOUs shall:

- confirm that CSLB disclosure documents ~~include~~ document includes a bill savings estimate ~~that uses the modified staff proposal's standardized inputs and assumptions~~;
- confirm that CSLB disclosure documents ~~include~~ document includes language that explains that the bill savings estimate is only an estimate (not a guarantee), as directed in Section 2.1 of this decision;
- collect copies of all inputs and assumptions (i.e., both the standardized inputs and assumptions and any alternative inputs and assumptions used to develop alternative calculations or scenarios) used to calculate and present bill savings estimates to customers, and any other documentation relating to solar providers' estimated bill savings calculations;
- confirm that solar providers' inputs and assumptions for any bill savings estimate (including alternative calculations) specify a utility escalation rate that complies with the modified staff proposal's standardized assumption regarding utility escalation rates;
- confirm, in cases where solar providers presented alternative calculations and/or alternative scenarios, that solar providers disclosed all material differences between the standardized inputs and assumptions and the inputs and assumptions used in their alternative calculations and scenarios.

Pursuant to D.18-09-044, Commission staff has authority to revise the Solar Consumer Protection Guide. To facilitate customers' understanding of their anticipated electric bill savings and related issues, we anticipate staff may update the guide to reflect the standardized inputs and assumptions adopted by this decision, and provide additional guidance as staff deems necessary.

D.20-02-011 authorizes the Commission's Consumer Protection and Enforcement Division (CPED) to propose a citation program for the consumer

protection requirements established in both D.18-09-044 and D.20-02-011. The scope of CPED's proposed citation program ~~shall~~may include fines or other penalties regarding the required electric bill savings estimate disclosures adopted in this decision. If the Commission develops a registration or other type of enforcement mechanism, it will include electric bill savings estimate disclosures adopted in this decision. The specifics of the enforcement details are deferred until the Commission resolves pending matters¹¹ relating to the type and scope of the enforcement mechanism. The Commission may consider refinements to the overall framework of enforcing the requirements of this decision in the future.

2.5. Annual escalation of electricity provider rates

The modified staff proposal reflects minimal changes to the standardized inputs and assumptions described in the initial staff proposal. The most significant revision is to the average escalation of electricity provider residential rates. This is an important input for any calculation of energy savings: the higher the estimate of future electricity rates, the greater the estimated bill savings (all else equal). As TURN notes, "every provider will choose the maximum allowable escalation rate in order to boost the forecasted savings."¹¹¹² The initial staff proposal provides that solar providers may select an escalation rate within 2.12 percent above or below the five-year average inflation rate for residential retail electricity prices (in the applicable electricity provider's service territory). The modified staff proposal removes the option to select an escalation rate above or below the average inflation rate, and limits the maximum assumed escalation rate to four (4) percent. The average escalation rate of ~~the large IOU~~electric utilities in California over the past five years of currently available data

¹¹ Draft Resolution UEB-004, authorized by Decision (D.) 20-02-011, is scheduled to be included in the agenda of the Commission's August 27, 2020 voting meeting. On May 18, 2020, SDG&E, PG&E and SCE jointly filed a petition to modify D.20-02-011.

¹² TURN opening, at 4.

(2014-2018), weighted by their proportion of customers, is ~~3.23.1~~ percent. To allow for fluctuations over time and for simplicity, the modified staff proposal rounds this figure upward to four percent.

Because we permit solar providers to present alternative calculations, it makes little sense for the standardized inputs and assumptions to include a range of possible values for the annual escalation rate of electricity provider rates. Thus, the modified staff proposal recommends a more simplified assumption.

We further adopt an upper limit to this standardized input, as described above. Exaggerating future utility rate increases is an easy and effective means to overstate long-term bill savings. As PG&E suggests, there is no financial risk to customers of underestimating future utility rate increases, while there is a potentially major financial risk associated with overestimating future utility rate increases. Therefore, while allowing flexibility for all other inputs and assumptions, we find it reasonable to limit the rate at which future electricity provider rates may be assumed to increase; all bill savings calculations, including alternative calculations, must follow the modified staff proposal's standardized assumption for annual electricity provider rate escalation.

In comments to the proposed decision, SEIA recommends the Commission annually update this upper limit to the assumed rate escalation ("rate escalation cap"), asserting this would ensure customers have more relevant and timely estimates of utility rate increases. We generally agree this assumption should maintain relevance over time, but we prefer to minimize the frequency with which staff updates this assumption. We authorize staff to update the rate escalation cap according to the following process: staff will review EIA data each

year¹³ and calculate the average escalation rate of electric utilities in California over the most recent five years, weighted by their proportion of customers. If this average escalation rate is greater than the then-current rate escalation cap by 2.0 percent or higher, then staff may update the rate escalation cap. As an example: if the average escalation rate calculated in 2021 is 6.1 percent (i.e., greater than the current rate escalation cap (4.0 percent) by more than 2.0 percent), then staff may update the rate escalation cap to 6.1 percent. If, instead, the average escalation rate calculated in 2021 is 5.9 percent (i.e., greater than the current rate escalation cap by 1.9 percent), then staff need not update the rate escalation cap.

2.6. Use of interval data

The modified staff proposal specifies that solar providers shall use one-hour interval electric consumption data from customers' past 12 months of data to estimate annual electricity consumption. In comments to the proposed decision, CALSSA asserts the Commission should not require the use of interval data until a new or modified process for accessing the data is in effect. CALSSA further suggests changing the assumption, regarding customers for whom 12 months of interval data is not available or is not reasonably accessible, to use estimated hourly consumption by applying average residential load curves. Similarly, Energy Toolbase suggests requiring the solar provider to "baseline a 365-day, 1-hour interval data file for the homeowner based off a reputable and

¹³ As of the issue date of the proposed decision, EIA publishes updated average price data for electric utilities annually in its *EIA Annual Electric Power Industry Report*, accessible at the following url: <https://www.eia.gov/electricity/data/eia861/>.

representative, typical residential load profile,”¹⁴ and SEIA suggests requiring the electric IOUs to develop “stock load profiles by climate zone.”¹⁵

We agree with CALSSA that requiring the use of estimated hourly consumption based on average residential load curves is a useful alternative to requiring solar providers to explain how the consumption estimate was derived. We adopt CALSSA’s recommendation as further specified by Energy Toolbase; further, such hourly consumption estimates must be based on the utility-defined climate zone in which the customer resides. Solar providers will be required to use these estimates for customers with less than 12 months of interval data.

CALSSA also requests the Commission to establish a new process for enabling solar providers to access customers’ interval data, and to update the electric IOUs’ Green Button portals with a “one-click” option that enables customers to “securely and instantaneously transfer 12 months of interval data to a solar provider on the list of authorized providers.”¹⁶ This proceeding is not the appropriate venue for considering new or modified processes for accessing customers’ interval data. Moreover, the IOUs’ online customer account portals, which include Green Button, serve important purposes beyond enabling third parties to access customers’ interval data. For this reason, customers with Internet access should be encouraged at every opportunity to utilize their utilities’ online accounts, and we do not favor development of a new system or process for accessing customers’ interval data. For customers whose interval

¹⁴ Comments of Energy Toolbase Software, Inc. on the Assigned Commissioner’s Proposed Decision Adopting Standardized Inputs and Assumptions for Calculating Estimated Electric Utility Bill Savings from Residential Photovoltaic Solar Energy Systems, filed July 2, 2020, at 2.

¹⁵ Comments of the Solar Energy Industries Association on Proposed Decision Adopting Standardized Inputs and Assumptions for Calculating Estimated Electric Utility Bill Savings from Residential Photovoltaic Solar Energy Systems, filed July 2, 2020 (SEIA comments), at 5 (referring to SEIA’s August 2019 comments on the staff proposal).

¹⁶ Comments of the California Solar & Storage Association on the Proposed Decision Adopting Standardized Inputs and Assumptions for Calculating Estimated Electric Utility Bill Savings from Residential Photovoltaic Solar Energy Systems, filed July 2, 2020, at 3.

data is not reasonably accessible, solar providers may use estimated hourly consumption (as specified for customers with less than 12 months of interval data), subject to the following condition: solar providers must obtain customer attestation that they (providers) made every reasonable effort to access the customer's interval data (e.g., providing step-by-step instructions to the customer for how to access the data and/or to authorize a contractor to access the data), and specify why they were unable to access the customer's interval data. The attestation document may be written by the solar provider, but must be signed by the customer.¹⁷ Solar providers must retain this attestation and explanation for at least 12 months, consistent with our discussion of enforcement in Section 2.4.

2.7. Assumed Annual Degradation Rate

In comments to the proposed decision, SEIA recommends clarifying that technical specifications include documents such as test reports commissioned by a manufacturer, asserting that specification sheets alone may not list a degradation rate. We agree with and adopt this clarification to the modified staff proposal.

3. Comments on Proposed Decision

The proposed decision of the assigned Commissioner 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 _____, and reply comments were filed on _____ by~~

~~_____~~ On July 2, 2020, Aurora Solar, CALSSA, Energy Toolbase, Inc. (Energy Toolbase), PG&E, SEIA, and SDG&E and SCE (jointly)

¹⁷ The form of signature should be consistent with customers' choice, but electronic signatures are permitted.

filed comments; on July 7, 2020, Aurora Solar, CALSSA, PG&E, SEIA, and SDG&E and SCE (jointly) filed reply comments. Changes responsive to party comments have been made throughout this decision. We address further party comments here.

SEIA repeats its assertion that the Commission's jurisdiction to, on its own, require solar providers to calculate and present estimated electric bill savings is "questionable," and recommends "discussion of Commission enforcement as well as the corresponding findings of fact, conclusions of law and ordering paragraph" be removed from the proposed decision.¹⁸ SEIA does not, however, specifically address or raise issue with the proposed decision's reasoning that, pursuant to Public Utilities Code Section 701, the Commission is authorized to protect utility customers from excessive charges. We maintain that the proposed decision is consistent with Commission authority to protect customers from excessive charges.

PG&E recommends the Commission confirm that cost recovery for the online solar calculator and bill savings enforcement be recoverable through the IOUs' respective interconnection fees. To the extent the Commission contracts for development of an online calculator, and/or the Commission adopts a mechanism to enforce the requirements of this decision, the electric IOUs may seek recovery of costs for activities attributable to the online calculator and/or the enforcement mechanism through interconnection fees.

TURN suggests further changes to the standardized inputs and assumptions, several of which TURN had previously recommended in comments on the initial staff proposal. First, TURN recommends that cumulative savings estimates be presented using a discount rate of eight percent, to reflect the time value of money over the 20-year forecast horizon. SEIA, Aurora Solar and

¹⁸ SEIA comments, at 7.

CALSSA oppose this recommendation; SEIA asserts most customers do not understand net present value, and Aurora Solar and CALSSA assert generally that both the concept and the specific value were not sufficiently deliberated for the Commission to now adopt a given rate as a standardized assumption. We prefer to allow for varying levels of customer understanding of net present value, and thus to require solar providers to disclose the discount rate they used (including zero) in their bill savings calculations. We encourage Commission staff to consider explaining and illustrating the significance of time value of money as a future refinement to the Solar Consumer Protection Guide.

TURN also recommends the bill savings calculator should account for differences in the application of escalation rates to CARE and non-CARE customers and tiered and TOU tariffs. Although we see value in applying different escalation rates according to the type of tariff, we are not at this time aware of a single publicly available data source to allow for this. We encourage parties to consider ways to implement this recommendation as a future refinement to the standardized inputs and assumptions we adopt in this decision.

TURN also reiterates that future escalation rates should include a variance band to reflect a high and low value for savings over time. CALSSA and SEIA again oppose this recommendation, arguing generally that presenting a range of savings may increase customer confusion. We generally agree with CALSSA and SEIA and further see a potential that presenting a range may give customers unwarranted confidence that their bill savings will at least fall somewhere within that range.

Finally, TURN recommends that the “no solar” scenario of estimated bills be based on a customer’s most advantageous tariff, which may or may not be the customer’s current tariff. CALSSA and SEIA oppose this recommendation,

asserting generally it is too complicated a task for solar developers to perform. We find that consideration of a more advantageous non-solar rate is a separate consideration from that of installing rooftop solar, and electric utilities have primary responsibility for providing customers with information or tools to help them compare available rate options.

4. Assignment of Proceeding

Martha Guzman Aceves is the assigned Commissioner and Patrick Doherty and Valerie U. Kao are the assigned Administrative Law Judges in this proceeding.

Findings of Fact

1. The Commission must retain the ability to review the documentation of solar providers who seek to interconnect to an investor owned utility to determine whether solar providers are using the standardized inputs and assumptions adopted in this decision, and to reproduce savings estimates in cases where solar providers present alternative calculations or scenarios.
2. Exaggerating future utility rate increases is an easy and effective means to overstate long-term bill savings.

Conclusions of Law

1. AB 1070 requires the CSLB, in collaboration with the CPUC, to develop a standardized disclosure document that provides accurate, clear and concise information regarding the installation of a solar energy system, total costs of installation, anticipated savings, the assumptions and inputs used to estimate the savings, and the implications of various financing options.
2. It is reasonable to require that all prospective solar customers be provided an estimate of the electric bill savings they can anticipate from installing a solar energy system, because customers expect to save some amount on their electric bills by installing a solar energy system.

3. The Commission is vested with exclusive authority to oversee implementation of net energy metering.

4. The bill savings calculation and disclosure requirements in this decision are necessary and convenient in the exercise of the Commission's jurisdiction over the utilities' interconnection processes.

5. It is reasonable to permit solar providers to present alternative calculations of electric bill savings estimates and alternative scenarios of future energy consumption.

~~6.~~ It is reasonable to direct Commission staff to work with the CSLB to incorporate language ~~into the disclosure document~~ that identifies uncertainties in bill savings estimates into the disclosure document.

~~6.~~ ~~7.~~ It is reasonable to require the electric utilities to collect all steps, figures and backup documentation in the calculation process for at least 100 interconnection applications, as part of the semi-annual audit process ordered in D.18-09-044.

~~7.~~ ~~8.~~ It is reasonable to require the electric utilities to include the requirements of this decision in scope of the semi-annual audits ordered in D.18-09-044.

~~8.~~ ~~9.~~ It is reasonable to limit the rate at which future electricity provider rates may be assumed to increase, for all electric bill savings estimates provided by solar providers.

O R D E R

IT IS ORDERED that:

1. Except as specified in this decision, the *Standardized Solar Energy System Electric Bill Savings Inputs and Assumptions: a Staff Proposal* (staff proposal) is adopted pursuant to California Public Utilities Code Section 2854.6. The adopted

staff proposal is included with this decision as Attachment A (redlined) and Attachment B (final).

2. (a) ~~Within 120 days after the issue date of this decision,~~ Bear Valley Electric Service, Pacific Gas and Electric Company, Liberty Utilities (CalPeco Electric) LLC, PacifiCorp, San Diego Gas & Electric Company, and Southern California Edison Company (together, the utilities) shall each modify their interconnection processes to enable and require uploading of ~~at~~ the Contractors State Licensing Board disclosure document ~~that includes, which shall include~~ (1) an electric bill savings estimate (both first year and first 20 years, as specified in Section 2.1) that uses the standardized inputs and assumptions adopted by this decision, and (2) language developed by the Contractors State License Board in consultation with the Commission regarding uncertainties in electric bill savings estimates. This requirement is effective with respect to items (1) and (2) within 30 days after Commission staff provides notice to the service list that the Contractors State Licensing Board disclosure document has been amended to include these items. The standardized inputs and assumptions adopted by this decision shall be posted to each utility's Internet website.

(b) If a solar provider executes a contract with a residential customer for solar on or after the date that a utility completes modification of its interconnection process in accordance with this order, the solar provider is required to upload a document that includes an electric bill savings estimate that uses the standardized inputs and assumptions adopted by this decision.

(c) The director of Energy Division, or his/her/their designee, is authorized to adjust this schedule if necessary to ensure efficient and cost-effective implementation.

3. Commission staff is authorized to work with the Contractors State License Board to incorporate standardized language that identifies uncertainties in bill

savings estimates into the solar energy system disclosure document required pursuant to California Business and Professions Code Section 7169.

4. Commission staff is authorized to ~~work with the Contractors State License Board to ensure the solar energy system disclosure document required pursuant to California Business and Professions Code Section 7169 requires solar providers to identify key inputs and assumptions used in any~~ identify existing, publicly available tools that enable users to estimate electric bill savings ~~calculations presented to a customer~~ from installing a rooftop solar energy system.

5. The requirement for electric utilities to collect all inputs and assumptions used, along with the programs used and a spreadsheet of the hourly data for at least 100 interconnection applications may be modified via a letter from the Commission's Energy Division director or his/her/their designee.

6. ~~5-~~ Bear Valley Electric Service, Liberty Utilities (CalPeco Electric) LLC, and PacifiCorp shall conduct spot audits as described in Section 2.2.7 of Decision 18-09-044. Bear Valley Electric Service, Liberty Utilities (CalPeco Electric) LLC, and PacifiCorp shall provide audit findings to the Contractors State License Board to substantiate grounds for disciplining contractors for violations of Contractors State License Board rules and regulations, and shall also cooperate with the Utility Enforcement Branch's audit activities.

7. ~~6-~~ After Bear Valley Electric Service, Pacific Gas and Electric Company, Liberty Utilities (CalPeco Electric) LLC, PacifiCorp, San Diego Gas & Electric Company, and Southern California Edison Company (together, the utilities) modify their interconnection processes in accordance with Ordering Paragraph 2, each of the utilities shall collect all steps, figures and backup documentation in the calculation process of electric bill savings estimates for at least

100 interconnection applications, as part of the semi-annual audit process ordered in Decision 18-09-044.

8. ~~7.~~ Bear Valley Electric Service, Pacific Gas and Electric Company, Liberty Utilities (CalPeco Electric) LLC, PacifiCorp, San Diego Gas & Electric Company and Southern California Edison Company shall include the requirements of this decision, as detailed in Section 2.4, in the scope of the semi-annual audits required by Decision 18-09-044.

9. ~~8.~~ The scope of the Commission's Consumer Protection and Enforcement Division ~~is authorized to include the's~~ proposed citation program may include fines or other penalties regarding the required electric bill savings estimate ~~requirements~~ disclosures adopted in this decision ~~within scope of the proposed citation program authorized by Decision 20-02-011.~~ If the Commission develops a registration or other type of enforcement mechanism, it shall include electric bill savings estimate disclosures adopted in this decision.

10. Commission staff is authorized to update the rate escalation cap according to the following process: staff will review Energy Information Administration (EIA) data each year, beginning with the release of the 2020 EIA Annual Electric Power Industry Report, and calculate the average escalation rate of all California investor owned utilities and publicly owned electric utilities over the most recent five years, weighted by their proportion of customers. If this average escalation rate is greater than the then-current rate escalation cap by two percent or higher, then staff is authorized to update the rate escalation cap to equal the most recent five-year average escalation rate. Future updates to the rate escalation cap, as authorized by this order, shall become effective within 30 days after Commission staff provides notice to the service list of such an update.

[11.](#) ~~9.~~ Rulemaking 14-07-002 and Application 16-07-015 (consolidated) remains open.

This order is effective today.

Dated _____, at San Francisco, California.

ATTACHMENT A & B

Document comparison by Workshare Compare on Monday, August 3, 2020
9:42:01 AM

Input:	
Document 1 ID	file://C:\Users\mph\Desktop\R1407002 A1607015 Guzman Aceves Comment Dec 8-6.docx
Description	R1407002 A1607015 Guzman Aceves Comment Dec 8-6
Document 2 ID	file://C:\Users\mph\Desktop\R1407002 A1607015 REV 1 Adopting Standardized Inputs.docx
Description	R1407002 A1607015 REV 1 Adopting Standardized Inputs
Rendering set	Standard

Legend:	
	<u>Insertion</u>
	Deletion
	Moved from
	<u>Moved to</u>
	Style change
	Format change
	Moved deletion
Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
	Count
Insertions	101
Deletions	54
Moved from	3
Moved to	3
Style change	0
Format changed	0
Total changes	161