BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (September 22, 2011)

COMMENTS OF THE CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION ON INTERCONNECTION COST CERTAINTY

Brad Heavner
Policy Director
California Solar Energy Industries Association
555 5th St. #300-S
Santa Rosa, California 95401
Telephone: (415) 328-2683
Email: brad@calseia.org

May 22, 2015

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to improve distribution level interconnection rules and regulations for certain classes of electric generators and electric storage resources.	Rulemaking 11-09-011 (September 22, 2011)

COMMENTS OF THE CALIFORNIA SOLAR ENERGY INDUSTRIES ASSOCIATION ON INTERCONNECTION COST CERTAINTY

Pursuant to "Administrative Law Judge's Ruling Setting Schedule for Supplement to Utility Cost Certainty Proposal and Comments" (Ruling), issued April 16, 2015, and the Administrative Law Judge's April 28, 2015 email ruling revising the schedule, the California Solar Energy Industries Association (CALSEIA) respectfully submits the following comments and proposal to enhance interconnection cost certainty.

1. Introduction

The cost certainty discussion in this proceeding was begun "to enhance cost certainty within the interconnection process …"[1] In response, the investor-owned utilities (IOUs) submitted a Motion with a proposal for a fixed engineering cost for very large projects. If project developers choose to pay $10,000 for an engineering report, it would include an accurate estimate of future costs. However, even though the engineering cost is guaranteed and the estimate may be more accurate than current estimates, the estimate is not available until well into the project development cycle and the engineering cost is beyond the reach of the vast majority of projects. A much more useful solution would be for the IOUs to provide information on the likely need for upgrades at the beginning of the project development cycle, and to make it

[1] "Motion of Southern California Edison Company (U 338-E), San Diego Gas & Electric Company (U

accessible to projects of a wide range of sizes. Supplying information can help developers design systems that make sense for the customer and the distribution circuit rather than the current iterative system that is incredibly inefficient for utilities, customers, and developers. The cost does not need to be guaranteed to *enhance* cost certainty. Rather, cost certainty can best be enhanced by the early availability of information.

The first sentence of the Statement of the Problem section of the Staff Report is, "Providing more certainty in the estimation of the costs associated with interconnecting a new facility to the distribution grid is critical."[2] We couldn't agree more. This includes not only the question of putting a price tag on new facilities once it has been determined that new facilities will be needed, but more importantly answering the question of whether new facilities will be needed before unnecessary time and money has been spent developing a project.

The Ruling stated that, "comments should include policy level comments and specific tariff text either as an alternative or an addition to the Utilities' proposal."[3] CALSEIA submits its alternative proposal in comments below and tariff text in Appendix A.

2. NEM Aggregation Systems Have Been Subject to Unreasonable Costs, Delays, and Uncertainty

Solar providers and customers have experienced tremendous disruption in the past year as utilities have begun charging net energy metering (NEM) customers for interconnection facilities. It has always been the case within Rule 21 that NEM-eligible customer-generators are not responsible for the costs of "distribution upgrades" that impact multiple customers but may be responsible for "interconnection facilities" that only serve that customer. However, until recently utilities in practice did not charge NEM customers for interconnection facilities. This seems to have changed upon implementation of NEM aggregation. Solar customers and project

[2] CPUC, "Cost Certainty for the Interconnection Process: Staff Proposal," July 18, 2014 at 2.
[3] Ruling at 2.

developers proposing aggregation systems have been taken by surprise by major charges assessed late in the project development process. Such costs have ranged as high as $320,000 for equipment that was previously the financial responsibility of the utility.

The process for determining the need for upgrades and installing them has been painfully slow. Proposed systems in the 50 kW to 400 kW range are often taking nine months to interconnect when previously they took one month. In some cases, utilities have not even acknowledged receipt of an application in a timely manner. In many cases, when utilities ask questions about an application and the customer responds immediately, the customer has to wait another two weeks for the utility to look at the information and consider whether to allow the project to advance to the next stage or to request yet more information. Acknowledgment of the receipt of fee payment often takes two weeks. A simple transformer upgrade can take 24 weeks for estimating and construction.

This is having severe impacts on customers. When customers who borrow money to install solar systems are subject to long delays and unexpected expenses, it harms them financially. When solar providers invest time and money to develop projects that may turn out much different than expected, they are taking major financial risks. Some of these impacts and risks can be avoided by providing information in a timely fashion.

3. The Joint Utility Motion Does Not Address Problems with NEM Aggregation Interconnection

During the April 9, 2015 presentation on their cost certainty proposal, the IOUs stated that the proposal in their Motion was intended for merchant generators and not for customer-generators. It is designed for generators that connect large systems directly to the distribution system and commonly face engineering charges on the order of $10,000. The "Fixed Price Option" may be a solution worth considering for one area that needs improvement, but it would leave unaddressed the larger quantity of customers that propose to connect generating systems that have more local potential impacts.

The IOUs propose establishing a "Phase 2" of cost certainty policy development, but it is clear that they intend for it to consider modifications for the benefit of systems larger than those covered in the initial proposal, not smaller projects that qualify for NEM aggregation and face excessive uncertainty. The Motion states, "While the IOUs do not support expanding a cost certainty option for projects that trigger significant upgrades at this time, the IOUs believe continued discussion and analysis regarding cost certainty is warranted."[4] Hence, the IOUs have indicated no intention to expand their fixed price option in ways that make sense for NEM aggregation.

4. The Rule 21 Pre-Application Report Should Be Expanded

Section E.1 of Rule 21 contains rules about an optional Pre-Application Report. Customers or their representatives can request a report at a cost of $300 that includes information about the distribution circuit on which the customer intends to request interconnection. It includes only pre-existing data that can be provided without additional analysis or a site visit.

The Pre-Application Report was designed for larger installations that have a fair likelihood of impacting the substation. It therefore includes information about the capacity of the substation bank and the circuit likely to serve the proposed system. It does not include information about the customer facility where the system will be installed. Presumably this is because it was designed for larger installations that are typically installed on a new service with new interconnection facilities. Hence, customer generation facilities that are larger than "cookie cutter" small systems but smaller than merchant generators are caught in the middle of the existing rules. For smaller systems, developers can assume that new interconnection facilities *will not* be needed. For larger systems, developers can assume that new interconnection facilities

[4] Motion at 8.

will be needed. For those in between, not having a clear picture whether new interconnection facilities will be needed creates tremendous cost uncertainty.

A simple solution to this problem is to add site-specific information to the Pre-Application Report. The report could still be limited to existing data that can be produced without a site visit. This would include the following information:

- Size of transformer serving the proposed interconnection location.
- Maximum allowable additional generating capacity on the customer side of the existing transformer without mitigation.
- Maximum allowable additional generating capacity on the customer side of the existing transformer with mitigation.
- Number and amperage of existing service conductors serving the existing customer switchgear.
- Distance to nearest installed recloser that can be activated or reprogrammed.

Currently, with the exception of the Pre-Application Report, utilities supply information only in response to applications. This means that solar providers have to design systems based on incomplete information and customers need to sign contracts before they can get the information they need to design the system optimally. Solar providers will often alter the system design after getting the results of the initial engineering review, but then they have to go back to the beginning of the process and the utility has to respond again to the amended application. This is incredibly inefficient for utilities, solar providers, and customers. Solar providers have to propose a system size, and the utility responds by saying yes or no to the interconnection of a system of that size at the existing service, rather than having the utility disclose the available capacity that can be interconnected. Utilities have existing information on as-built, in-service equipment capacity, but they do not share it because they are not required to do so under the existing Rule 21.

Although cost estimates associated with identified upgrades are important, an expanded report does not need to include a cost estimate in order to provide greater cost certainty. Simply knowing whether a solar installation is likely to be approved for interconnection at an existing service without modifying interconnection facilities would greatly increase certainty when a customer is considering whether to install a solar system. Knowing the size of wiring at the service will give the solar provider a good idea of the amount of wiring that will need to be added. The disclosures contained in the existing Pre-Application Report should be maintained, stating that it is not a guarantee that an interconnection can be completed without impacts. In some cases, further investigation or changing conditions would alter the determinations in the report. Even with this lack of a guarantee, however, a better snapshot view using existing data would increase certainty.

5. The Commission Should Add a New Optional Report Under Rule 21

In addition to an expanded Pre-Application Report, utilities should give customers the option to obtain a more detailed report that involves a site visit from a representative of the utility upon request. This Pre-Application Service Planning Review should include the following information.

- Verification of transformer size.
- Determination of whether a transformer pole or service pole needs to be replaced.
- Determination of whether service wiring is adequate (3-wire vs. 4-wire).
- Determination of whether the size and voltage of the service panel is adequate.
- Approval of the service point of entry if a line side tap is proposed.
- An initial cost estimate of a transformer upgrade, if one is requested, including the credit for existing equipment.

As with the Pre-Application Report, the Pre-Application Service Planning Review should include a disclaimer that the cost estimate is non-binding. Even if circumstances can change and the final cost of a transformer upgrade may be different, the initial cost estimate will provide increased certainty. The utility representative's assessment of whether the existing transformer has any retained value to be credited against the cost of a new transformer would be valuable information that a solar provider is unlikely to be able to perform on its own.

The utility should propose a flat fee for this report that is calculated to match the actual cost of sending a representative and completing the report.

The justification for this is the same as for the expanded Pre-Application Report. Companies installing generation facilities that are connected to the utility grid should be designing those facilities with the proper information. Customers should not be forced to consider multiple iterations of a proposal when an optimal system can be proposed from the start. Utilities should not be spending time reviewing multiple versions of interconnection applications.

6. Rule 21 Should Include Timelines for Construction Work

One of the biggest areas of cost uncertainty for customers installing self-generation facilities is the time that will be required to install interconnection facilities. Commercial customers typically must commit to borrowing money before a project commences and may begin paying interest on the loan before the financial benefits begin to materialize. Also, an investment in solar normally competes against other potential investments, and if the customer must continue purchasing all of its electricity from the utility after the point at which the customer expected to have been producing its own electricity, the investment could have tied up money that would have been spent more productively on other investments that would have stabilized business and employment. Time is money, and timeline uncertainty equals cost uncertainty.

It is understandable that timelines sometimes cannot be met due to changing conditions. However, the Commission should give utilities guidelines to plan around. Utilities need to establish their staffing according to expectations of how promptly they need to get work done.

Utilities may think 12-month construction delays are reasonable while customers think construction should be completed within a month. It is for the Commission to mediate and set reasonable expectations for both sides.

CALSEIA believes that one month should be the maximum timeline for activating or reprogramming an existing recloser, and two months should be the maximum for scheduling and completing work on a transformer upgrade, installing a new recloser, or increasing service conductors. If utilities cannot meet these timelines due to a surge in demand or an unplanned reduction in their capacity, they should notify the Commission that timelines will need to be exceeded and propose a date by which timelines can resume to normal.

7. Utilities Should Publish Cost Guidelines

Solar providers have found that charges for interconnection facilities have varied widely. Upgrading from a 50 kVA transformer to a 75 kVA transformer has recently cost as little as $50,000 and as much as $150,000, seemingly for the exact same work. Different local service offices arbitrarily charge different amounts. To reduce this uncertainty, utilities should publish cost guidelines and periodically update them. This would help solar providers predict likely costs for customers, would help utilities develop fair methodologies for assessing costs, and could avoid disputes over charges between customers and utilities.

8. Conclusion

A fixed engineering cost for very large systems, such as what the utilities propose in their Motion, is only one aspect of enhancing cost certainty. As concern about grid integration of distributed generation increases, the Commission must also address aspects of cost certainty that affect the larger number of customer interconnection applications for medium-sized systems at or associated with existing service connections. CALSEIA appreciates the opportunity to provide these comments and urges the Commission to adopt the recommendations herein.

DATED at Santa Rosa, California, this 22nd day of May, 2015,

By: __/s/ *Brad Heavner*__
Brad Heavner

Brad Heavner
Policy Director
California Solar Energy Industries Association
555 5th St. #300-S
Santa Rosa, California 95401
Telephone: (415) 328-2683
Email: brad@calseia.org

Appendix A. Rule 21 Text Modifications

E. INTERCONNECTION REQUEST SUBMISSION PROCESS

1. OPTIONAL PRE-APPLICATION REPORT

Upon receipt of a completed Pre-Application Report Request and a non-refundable processing fee of $300, Distribution Provider shall provide pre-application data described in this section within ten (10) Business Days of receipt. The Pre-Application Report Request shall include a proposed Point of Interconnection, generation technology and fuel source. The proposed Point of Interconnection shall be defined by latitude and longitude, site map, street address, utility equipment number (e.g. pole number), meter number, account number or some combination of the above sufficient to clearly identify the location of the point of interconnection.

The Pre-Application Report will include the following information if available:

a. Total Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.

b. Allocated Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.

c. Queued Capacity (MW) of substation/area bus or bank and circuit likely to serve proposed site.

d. Available Capacity (MW) of substation/area bus or bank and circuit most likely to serve proposed site.

e. Substation nominal distribution voltage or transmission nominal voltage if applicable.

f. Nominal distribution circuit voltage at the proposed site.

g. Approximate circuit distance between the proposed site and the substation.

h. Relevant Line Section(s) peak load estimate, and minimum load data, when available.

i. Number of protective devices and number of voltage regulating devices between the proposed site and the substation/area.

j. Whether or not three-phase power is available at the site.

k. Limiting conductor rating from proposed Point of Interconnection to distribution substation.

l. Based on proposed Point of Interconnection, existing or known constraints such as, but not limited to, electrical dependencies at that location, short circuit interrupting capacity issues, power quality or stability issues on the circuit, capacity constraints, or secondary networks.

m. Size of transformer serving the proposed interconnection location.

n. Maximum allowable additional generating capacity on the customer side of the existing transformer without mitigation.

o. Maximum allowable additional generating capacity on the customer side of the existing transformer with mitigation.

p. Number and amperage of existing service conductors serving the existing customer switchgear.

q. Distance to nearest installed recloser that can be activated or reprogrammed.

The Pre-Application Report need only include pre-existing data. A Pre-Application Report request does not obligate Distribution Provider to conduct a study or other analysis of the proposed project in the event that data is not available. If Distribution Provider cannot complete all or some of a Pre-Application Report due to lack of available data, Distribution Provider will provide Applicant with a Pre-Application Report that includes the information that is available.

In requesting a Pre-Application Report, Applicant understands that 1) the existence of "Available Capacity" in no way implies that an interconnection up to this level may be completed without impacts since there are many variables studied as part of the interconnection review process, 2) the distribution system is dynamic and subject to change and 3) data provided in the Pre-Application Report may become outdated and not useful at the time of submission of the complete Interconnection Request. Notwithstanding any of the provisions of this Section, Distribution Provider shall, in good faith, provide Pre-Application Report data that represents the best available information at the time of reporting.

2. OPTIONAL PRE-APPLICATION SERVICE PLANNING REVIEW

Upon receipt of a completed Pre-Application Service Planning Review Request and a non-refundable processing fee, Distribution Provider shall provide pre-application data described in this section within ten (10) Business Days of receipt. The Pre-Application Service Planning Review Request shall include a proposed

Point of Interconnection, generation technology and fuel source. The proposed Point of Interconnection shall be defined by latitude and longitude, site map, street address, utility equipment number (e.g. pole number), meter number, account number or some combination of the above sufficient to clearly identify the location of the point of interconnection.

The Pre-Application Service Planning Review will include the following information if available:

a) Verified transformer size at proposed interconnection location.
b) Determination of whether a transformer pole or service pole needs to be replaced.
c) Determination of whether service wiring is adequate (3-wire vs. 4-wire).
d) Determination of whether the size and voltage of the service panel is adequate.
e) Approval of the service point of entry if a line side tap is proposed.
f) An initial cost estimate of a transformer upgrade, if one is requested, including the credit for existing equipment.

E. INTERCONNECTION REQUEST SUBMISSION PROCESS (Cont'd.)

4. INTERCONNECTION COST RESPONSIBILITY (Cont'd.)

g. Cost Guidelines

Distribution Provider shall publish cost guidelines for interconnection facilities that may be the financial responsibility of the Producer. The guidelines shall be updated a minimum of once annually. The guidelines shall include the cost of equipment and the cost of installing equipment.

H. GENERATING FACILITY DESIGN AND OPERATING REQUIREMENTS (Cont'd.)

5. DESIGN AND CONSTRUCTION TIMELINES

1. Distribution Provider shall make reasonable efforts to design and construct interconnection facilities, special facilities, and distribution system upgrades as soon as possible after the determination that they are needed. Normal construction timelines shall be:

a. Less than two months for a transformer upgrade.

b. Less than one month for activating or reprogramming an existing reclose blocking device.

c. Less than two months for installing a new reclose blocking device.

d. Less than two months to install additional conductoring at an existing service.

2. If Distribution Provider is not able to meet these normal timelines, Distribution Provider shall notify Applicant and the Commission of the reason for the inability to complete construction within the normal timeline and the expected construction date.