

California Investor Owned Utility (IOU) Interconnection Net Energy Metering (NEM) Solar PV Data

The California Solar Initiative (CSI) Working Data Set provided valuable insight into the rooftop solar market in California since 2009. As the CSI program completion approached, the ability of the California Solar Statistics' (CSS) database to accurately represent CA's PV market declined due to the lack of new incentive applications. This is because the CSI Working Data Set and CSS were based off incentive applications, not interconnection applications.

In November of 2014, the California Public Utilities Commission (CPUC) issued Decision ([D.\) 14-11-001](#)) directing the CA IOUs (PG&E, SDG&E and SCE) to publish net energy metering (NEM) solar photovoltaic (PV) interconnection data sets on a monthly basis. The California DG Stats team (CA IOUs, CSI Program Administrators, CPUC Energy Division and contractor Energy Solutions) then began working to aggregate the three IOU NEM solar PV interconnection data sets, map common fields and perform data integrity tests to make comprehensive interconnection data sets available for public use. The first data sets were published in July 2015.

Interconnection Applications Data Set vs. Currently Interconnected Data Set

In addition to continuing to publish the CSI Working Data Set, California DG Stats provides two comprehensive solar PV interconnection data sets for public use. The first data set, the "Interconnection Applications Data Set", contains all interconnection *applications* whether they are interconnected or decommissioned. The second data set, the "Currently Interconnected Data Set", only includes interconnected solar PV NEM *projects*. This second data set presents the current "state of the world" in terms of how many interconnected solar PV projects and how many MW are installed in a given city or ZIP code, etc.

The key difference between the two interconnection data sets (aside from excluding decommissioned applications) concerns cases where PV systems have been built in more than one phase. In this case, this PV system will have two (or more) interconnection applications for what traditionally has been considered one project. While more than 95% of the current interconnection applications are for one "project", as more and more CA IOU customers modify their existing systems for various reasons (such as to meet new load), it is important to accurately account for the interconnection activity. In the Interconnection Applications Data Set, the presence of multiple applications at the same service location is denoted by the presence of a "Superceding ID" or "Preceding ID" field. In the Currently Interconnected Data Set multiple applications at the same service location are denoted by the presence of a "Yes" in the "Previous Application" field. The previous applications IDs are also listed. In these cases, the system capacity is summed for all applications, however for most other fields, the most recent application's information is listed and supercedes the first application's information.

Online Collection of New Data Fields

Per the CPUC Decision ([D.\) 14-11-001](#)), the CA IOUs were required to start collecting several new fields in their online interconnection applications in 2015. Please see Appendix A of the

CPUC decision for a list of fields to be collected. The IOUs began collecting these fields on different dates based in part on the implementation of their online interconnection application systems: SDG&E = 4/15/2015, SCE = 4/20/2015, PG&E = 07/06/2015. There are many fields which were never collected by the interconnection departments prior to this decision and thus will not be populated for applications which were received prior to the dates listed above.

Data Integrity/Excluded Applications

The California DG Stats team has worked to create high quality data sets by performing hundreds of data integrity tests on each CA IOU data set. If certain applications fail what the California DG Stats team has deemed to be a “Core” data integrity field (e.g. System Size AC = “0”), then these applications are “Excluded” from the Interconnection Applications Data Set and placed in the “Excluded Applications” data set. The California DG Stats team is continually working to enhance data quality and expects the number of excluded applications to significantly decrease over time.

Matching the CSI Working Data Set and the Interconnection Applications Data Set

The California DG Stats team has worked to match the CSI Working Data Set to the Interconnection Applications Data Set. To match these two separate databases, the California DG Stats team used a combination of matching algorithms based on the following fields:

- CSI application number (if/when collected on the IOU’s interconnection application)
- Host customer name and address
- Account number
- Meter number

If a given CSI application matches one of these fields and the CSI kW rating (AC) is within 5% of the Interconnection kW (AC), then they are deemed a match. In the Interconnection Applications Data Set and the Currently Interconnected Data Set, the corresponding “matched” CSI application number is indicated in the “Matched CSI Application Number” field.

At the time of the first issuance of the two interconnection data sets, the California DG Stats team has matched ~90% of the interconnected CSI applications to the IOU interconnection applications (where “interconnected” is defined as having a “First Pending Payment Date” in the CSI Working Data Set). This match rate is expected to increase as more advanced matching methods are implemented.

Frequency of Interconnection Data Publishing

Per the CPUC Decision [\(D.\) 14-11-001](#) the CA IOUs are submitting and thus publishing interconnection data on a monthly basis. The June 2015 data set was the first publicly available data set. Data is typically published 6 weeks after the end of the given month.

Technical Support

Please direct any technical questions to: csisupport@energy-solution.com.