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

The CSI Working Data Set has provided valuable insight into the rooftop solar market in California since 2009. As the CSI program has been nearing program completion, it has significantly limited the ability of the California Solar Statistics' (CSS) database to accurately represent CA's PV market due to the lack of new incentive applications. This is due to the fact that the Working Data Set and California Solar Statistics are based off incentive applications, not interconnection applications.

In November of 2014, the 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 (and eventually a weekly basis). Since then, the California Solar Statistics team (CA IOUs, CSI Program Administrators, CPUC Energy Division and contractor Energy Solutions) has been 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.

Interconnection Applications Data Set vs. Currently Interconnected Data Set

In addition to continuing to publish the CSI Working Data Set, California Solar Statistics provides two comprehensive interconnection data sets for public use. The first data set, the "Interconnection Applications Data Set", contains all interconnection *applications* whether they are in queue, complete 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 in-queue and decommissioned applications) concerns cases where PV systems have been built in more than one phase. In this case for PG&E and SDG&E, this PV system will have two interconnection applications for what traditionally has been considered one project, whereas SCE currently only has one row per application or project. While more than 99% 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.

Online Collection of New Data Fields

Per the CPUC Decision (D.) 14-11-001, the CA IOUs are required to start collecting a number of new fields in their online interconnection applications. Please see Appendix A of the CPUC decision for a list of fields to be collected. The IOUs are to begin 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 Solar Statistics 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 Solar Statistics 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 Solar Statistics 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 Solar Statistics team has worked to match the CSI Working Data Set to the Interconnection Applications Data Set. To match these two separate databases, the California Solar Statistics team used a combination of matching algorithms based on the following fields:

- CSI 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 Solar Statistics 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 will be the first publicly available data set. In the fall of 2015, interconnection data is planned to transition from monthly publishing to weekly publishing.

Technical Support

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