California Investor Owned Utility (IOU) Distributed Generation (incl. NEM PV) Interconnected Data Sets

Disclaimer: Beginning with data through June 2020, the Rule 21 (excl. NEM PV) Interconnected Data Set was combined with the solar (NEM PV) interconnected data sets to provide a complete representation of all Rule 21 interconnected systems within Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) territories. The integration and data integrity tests of the non-NEM PV data is ongoing between Energy Solutions, the IOUs and the California Public Utilities Commission (CPUC). Please use your best discretion when using and making representations from this data and direct questions about the data to dgstats@energy-solution.com.

Background

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 program to accurately represent CA's PV market declined due to the lack of new incentive applications. This is because the CSI Working Data Set was 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.

In August of 2018, the California Public Utilities Commission (CPUC) directed the IOUs to publish application-level data on all Rule 21 interconnections, regardless of technology type, size, tariff, incentive program, or other project characteristics. "Rule 21" generally refers to all net energy metering (NEM) facilities, "Non-Export" facilities, and storage technologies interconnected on the distribution grid under CPUC jurisdiction.[1] Rule 21 does not apply to the interconnection of generating or storage facilities intending to participate in wholesale markets. The tariff provides customers wishing to install generating or storage facilities on their premises with access to the electric grid.

The California DG Stats team began working to with the IOUs and the CPUC to collect this data and map the various data fields. The first Rule 21 (excl. NEM PV) data sets (one for each IOU) were published in May 2019. This effort included very preliminary manual data quality checks to address new data quality concerns.

---

[1] http://www.cpuc.ca.gov/Rule21/

Beginning with data through June 2020, the Rule 21 (excl. NEM PV) Interconnected Data Set was combined with the solar (NEM PV) interconnected data sets to provide a complete representation of all Rule 21 interconnected systems within Pacific Gas & Electric Company (PG&E), Southern California Edison (SCE) and San Diego Gas & Electric (SDG&E) territories.

Interconnected Applications Data Set vs. Interconnected Project Sites Data Set
In addition to continuing to publish the CSI Working Data Set, California DG Stats provides two comprehensive distributed generation interconnection data sets for public use. The first data set, the "Interconnected Project Sites Data Set" (formerly called the Currently Interconnected Data Set), only includes interconnected solar PV NEM projects. The Interconnected Project Sites 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 second data set, the "Interconnected Applications Data Set" (formerly called the Interconnection Applications Data Set), contains all Rule 21 interconnection applications whether they are interconnected or decommissioned.

The key difference between the two interconnection data sets (aside from excluding decommissioned applications) concerns cases where distributed generation and storage systems have been built in more than one phase. In this case, the system will have two (or more) interconnection applications for what traditionally has been considered one project. While the large majority 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 Interconnected 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 Interconnected Project Sites 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.

Collection of NEM PV versus non-NEM PV Data Fields
There are several data fields collected for NEM solar PV interconnection applications that are not required to be collected for non-NEM PV interconnection applications. Therefore, not all data fields in the data set will apply to each application and unpopulated fields are to be expected.

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 NEM solar PV 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. PV 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, particularly non-NEM PV data, which began the first phase of data integrity testing in June 2020.

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 NEM solar PV systems within the Interconnected 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 Interconnected Applications Data Set and the Interconnected Project Sites 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).

Frequency of Interconnection Data Publishing
The CA IOUs submit both NEM PV and non-NEM PV interconnection data on a monthly basis to Energy Solutions for data integrity testing and publishing preparation. Data is typically published 6 weeks after the end of the given month.

Technical Support
Please direct any technical questions to: dgstats@energy-solution.com.