

Site Analysis Report



Prepared for Northern Electric Power

October 26, 2021

Overview

A photovoltaic system was installed on a residential dwelling and NEP inverters were used for the DC to AC conversion process. Twelve months of continuous production data was collected and compared to the NREL PVWatts analysis of the site. NEP showed superior production compared to that predicted by the PVWatts analysis.

System: 2.8KW DC

Modules: 7 Q Cells Q.PEAK DUO L-G5.2 400 W

Inverters: NEP BDM-300

Location: Irvine, CA

Orientation: 200° from due north

Period of evaluation: Oct 2020 to Sept 2021



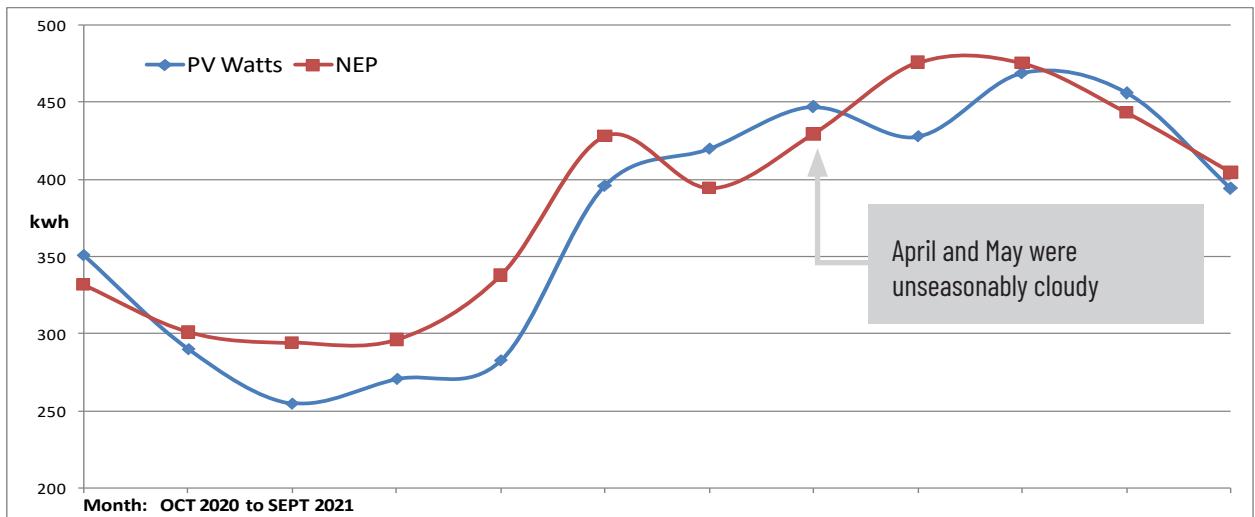
NEP BDM-300 Inverters daisy chained in a branch circuit



Seven 400W Q Cells Q.PEAK DUO L-G5.2 deployed on a rooftop

Result

Over a twelve month period, the system showed an increase in production of 3.4% compared to that expected from the PVWatts analysis. The monthly production versus expected is shown in the graph below.



Actual kwh production data from October 2020 to September 2021 versus PVWatt estimated

System Operation

The system ran without any internal issues over the twelve month evaluation period. It was down for several hours one day in August due to a power outage by Southern California Edison.

Additional Considerations

As can be seen from the included photo, proximity near an obstruction (the home's chimney) resulted in shading on one of

the modules during certain times of the day. While this did decrease production during those times, the NEP microinverters effectively isolated this loss solely to the single shaded module. Moreover, the months of April and May were unusually cloudy. Under normal seasonal conditions, the array would have exceeded the PVWatts estimate by an even greater percentage.



Appendix

Production Data and PVWatts Analysis

| | kWhr | PVWatts | NEP | Delta |
|-------------|--------------|----------------|-------------|--------------|
| 2020 | Oct | 351 | 331.74 | -5.8% |
| | Nov | 290 | 301 | 3.7% |
| | Dec | 255 | 294.29 | 13.4% |
| 2021 | Jan | 271 | 296.22 | 8.5% |
| | Feb | 283 | 337.76 | 16.2% |
| | Mar | 396 | 427.96 | 7.5% |
| | Apr | 420 | 394.34 | -6.5% |
| | May | 447 | 429.44 | -4.1% |
| | Jun | 428 | 475.98 | 10.1% |
| | July | 469 | 475.81 | 1.4% |
| | Aug | 456 | 443.41 | -2.8% |
| | Sept | 394 | 404.43 | 2.6% |
| | Total | 4460 | 4612 | 3.4% |