Sun-o-vision
Montpelier, VT
Phone 802-821-0027
info@sunovision.com
www.sunovision.com

TECHNICAL ASSISTANCE REQUEST

Request 1: Apply Machine learning to our daily kWh estimates

We are collecting data from many sources including solar arrays, satellite images, historical weather, etc. As our dataset for individual sites grows richer over time, our ability to understand the nuisances of the particular site will inform our estimates. For example: Based on our data, there are no malfunctioning parts in a given array and it's producing as it should, but starting every September shade creeps into the array and affects production. Knowing this, our system can begin to accommodate for the discrepancy and adjust the estimates accordingly. Also some sites have slight variations in installation that make estimates not line up exactly. We want to see the certain weather patterns that correspond with certain production outputs and apply those factors moving forward. Currently our estimates are close, but have slight variation we are trying to solve for. See Exhibit A below.

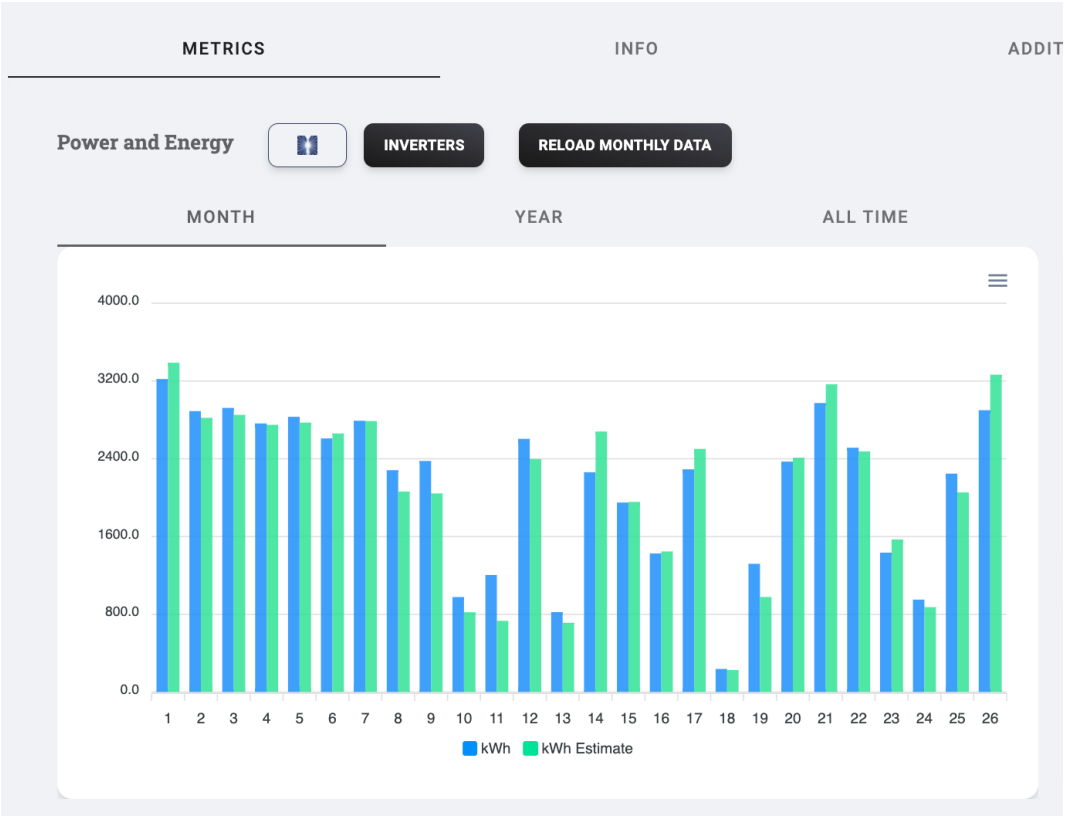

Exhibit A

Request 2: Apply predictive analytics to the data to determine specific faults

Each inverter has large list of fault codes. A database of these codes would be hugely helpful in order to sort problems by type of fault. This will provide a more thorough remote troubleshooting experience. We also want to use the data in advance of any error to predict the fault before it happens, such as high capacitor temperatures, or production with a certain pattern out of range.

Exhibit B: Possible Loose Connection

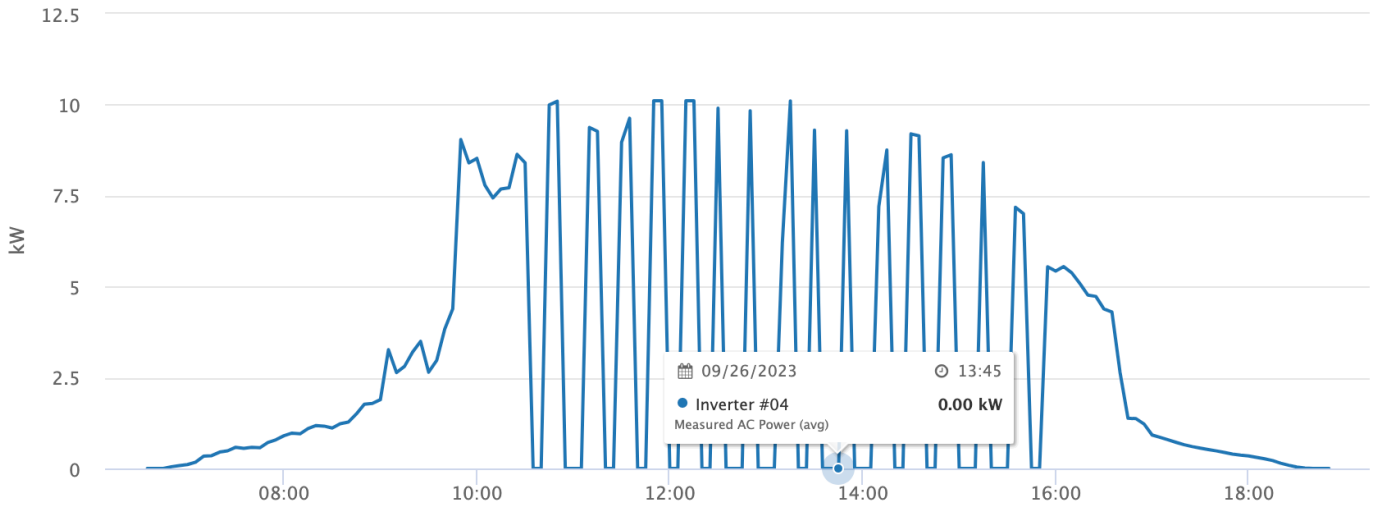

Exhibit C: Example of SolarEdge Fault Codes

	IMPACT	SITE NAME	ALERT TYPE	COMPONENT	PEAK POWER [KWP]
☐	7	**Fairgrounds Middle Scho…**	**No string communication**	Panel 1.0.604	660
☐	7	**Keene Mini Storage**	**Inverter production issue…**	Inverter 2 (Unit 2.1)	114.4
☐	7	**Keene Mini Storage**	**Grid voltage**	Inverter 2 (Unit 2.1)	114.4
☐	6	**Cas Cad Nac Farm**	**No string communication**	String 7.0	112.7
☐	6	**Radio Kingston - Office**	**Inverter production issue…**	Inverter 2	24.42
☐	6	**Wilklow Pulliam**	**DC Isolation**	Inverter 1	9.12
☐	6	**Mayer PV**	**Residual current device**	Inverter 1	9.9