

AI Power Management and Sizing Software for Solar Plus Storage

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Problem: the high battery cost makes the Solar plus Storage system's return on investment (ROI) less competitive. The smallest storage size plus the most efficient operation is needed now to maximize the ROI.

Solution: we invented the **sequence** of solutions, including two software packages (displayed on the right), which in the initial study outperformed a standard peak-shaving algorithm in reducing the electricity bill by 15%. This project enhances these two intertwined Solar plus Storage system software packages for industrial business customers and compares their offered equivalent ROI with competitors.

Here is the list of near-term **activities** planned for this project:

AI Power Management Software:

- 1) Establish secure communication between our cloud server and the local server.
- 2) Enhance the forecasting modules
- 3) Develop the GUI of the software and the convert the source of codes to an open-source version (e.g., Python)
- 4) Compare the performance index with competitors

Sizing Software:

- 1) Enhance the battery degradation model at lower C rates.
- 2) Develop accurate tools to convert the offered saving to ROI
- 3) Compare ROI with competitors

