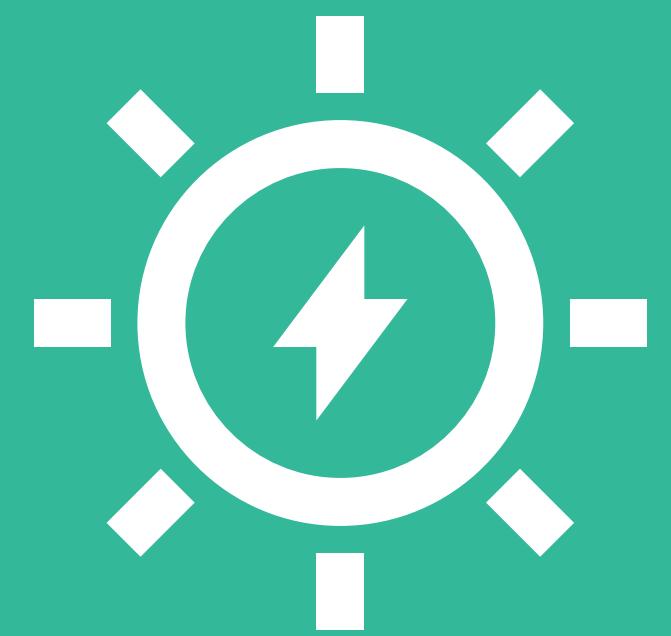


GRIDD

Photo Voltaic Energy Calculator



Outline



01 The Problem

02 Glimpse of The Product

03 Tech Stack

04 Vision

The Problem



PV power production is **uncertain**,
grid losses are **high**

As clouds move over PV panels, the power output moves up and down rapidly. To keep the energy grid in balance, operators need to have readily available power generation reserves which usually come from fossil fuel sources.

A Glimpse of The Product



An interactive dashboard that forecasts the amount of energy that will be generated in a day based on the panel rating and live satellite weather data, then suggests suitable actions for the grid managers

15 min
Time intervals

2 days
Window

Coordinates
For accurate forecasts





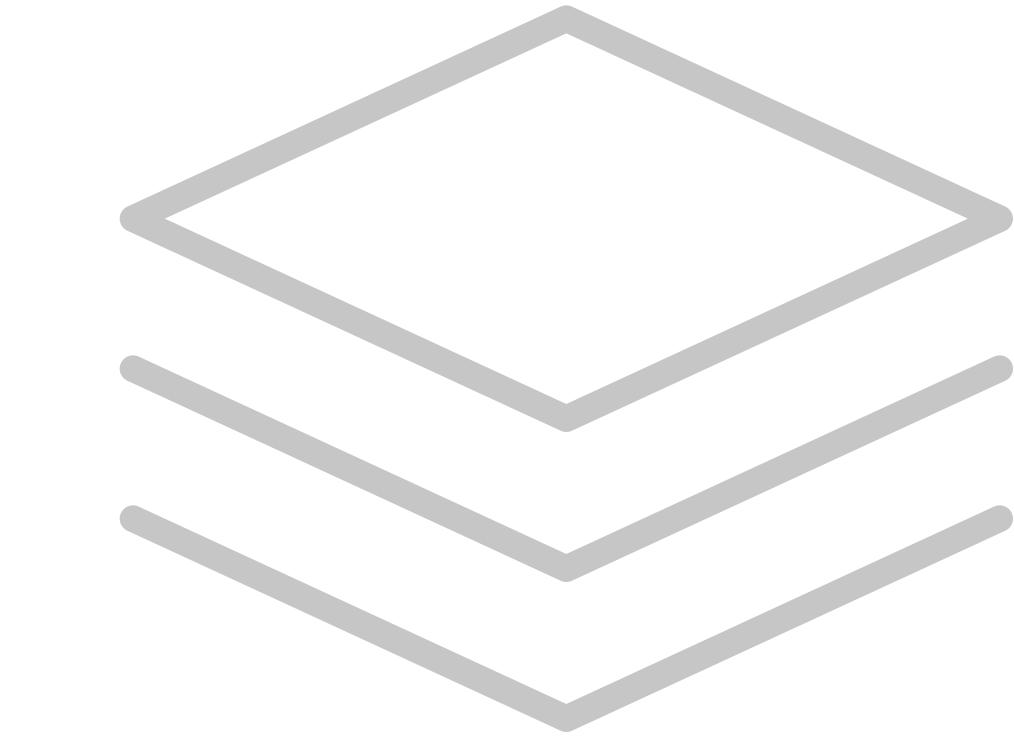
✨ Suggestions

Raise power generation from 06:26 to 12:11 and from 13:41 to 15:11. Reduce generation from 15:26 as solar output declines. To manage excess power, consider battery storage systems, selling back to the grid, or shifting load to peak solar hours.

Period-wise usage

Datetime	Power (kw)
2025-04-06T06:26:39.182407	0.069320
2025-04-06T06:41:39.182407	0.109148
2025-04-06T06:56:39.182407	0.154000

✨ **AI suggestions**



The tech stack we've used

Python

Libs and frameworks for time series forecasting and efficient visualisation

OpenWeather

Streaming real time weather and climate data for forecasting

OpenAI APIs

Generating suggestions fit for increasing the grid's efficiency based on the forecasts generated earlier

TypeScript & React

Building our robust and reliable web app

Vision

What we plan on doing next?



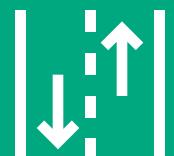
Auto Scheduling

Give defined time frames for auto scaling up and down the power grid output



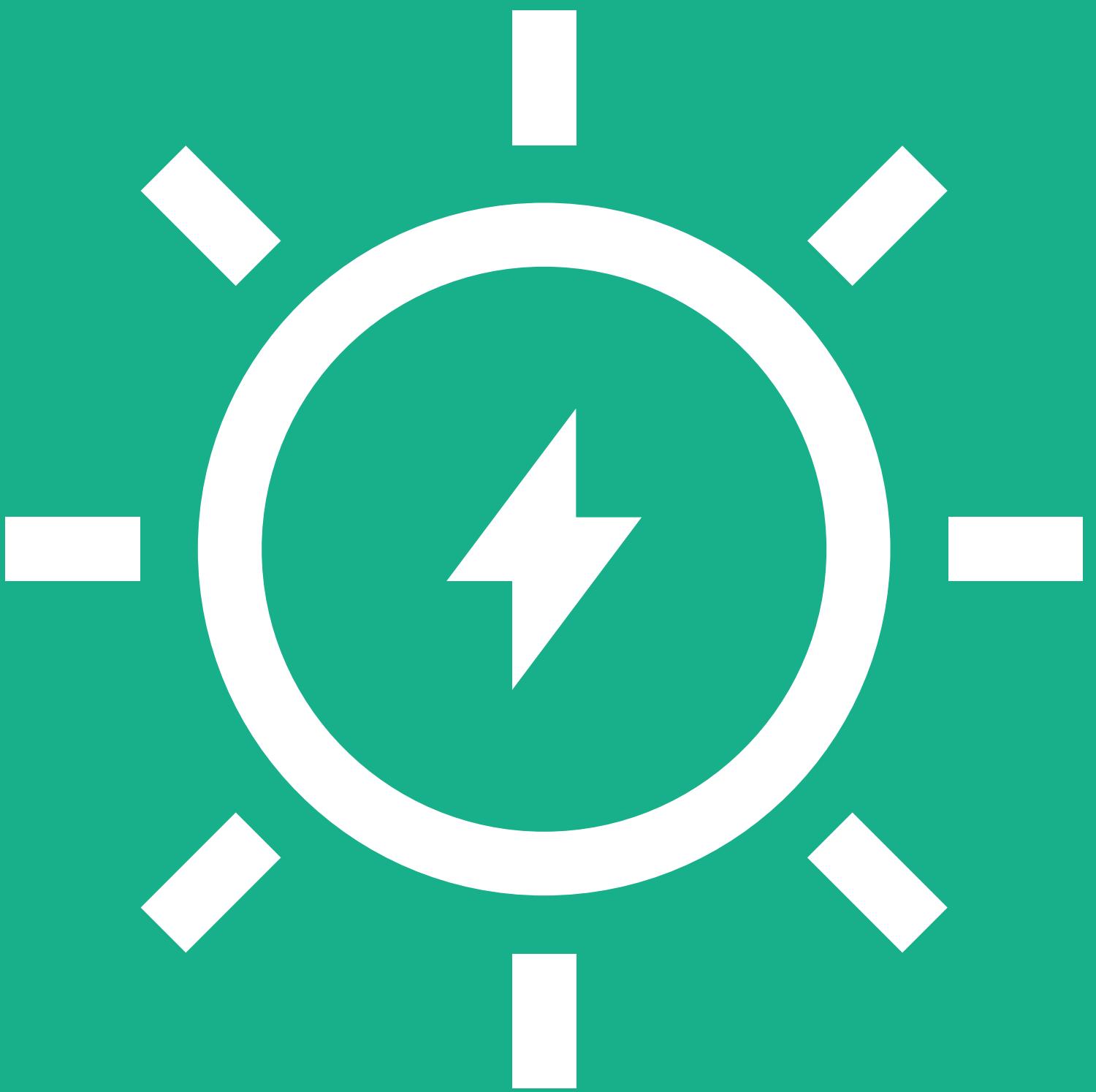
Load shifting recommendations

Fine tune the model as per the specific grid to give accurate info on how to deal with excess load.



Grid congestion minimization

Predictive insights can help reroute or throttle distributed energy sources to prevent local transformers from overloading.



Thanks