

# Nimbus AI

Honolulu, HI

## Problem

Intermittent solar generation limits adoption; forecasting solar production is necessary for resiliency in the transition to a renewable and energy-independent future.

Day-ahead forecasting is particularly important for power systems planning and market-based solutions to avoid price volatility.

## Solution & Approach

We combine historical ground- and satellite-based instrument data with physics-based model techniques to produce probabilistic forecasts.

We use deep neural networks to generate hour-by-hour probability distributions for solar irradiance over the next 36+ hours anywhere in the US.

Forecasts are quickly and inexpensively produced every 6 hours and can be requested from our system via API.

## Target Customers

Electricity market participants across all American ISOs: utilities, power producers, virtual bidders and financial entities, etc.

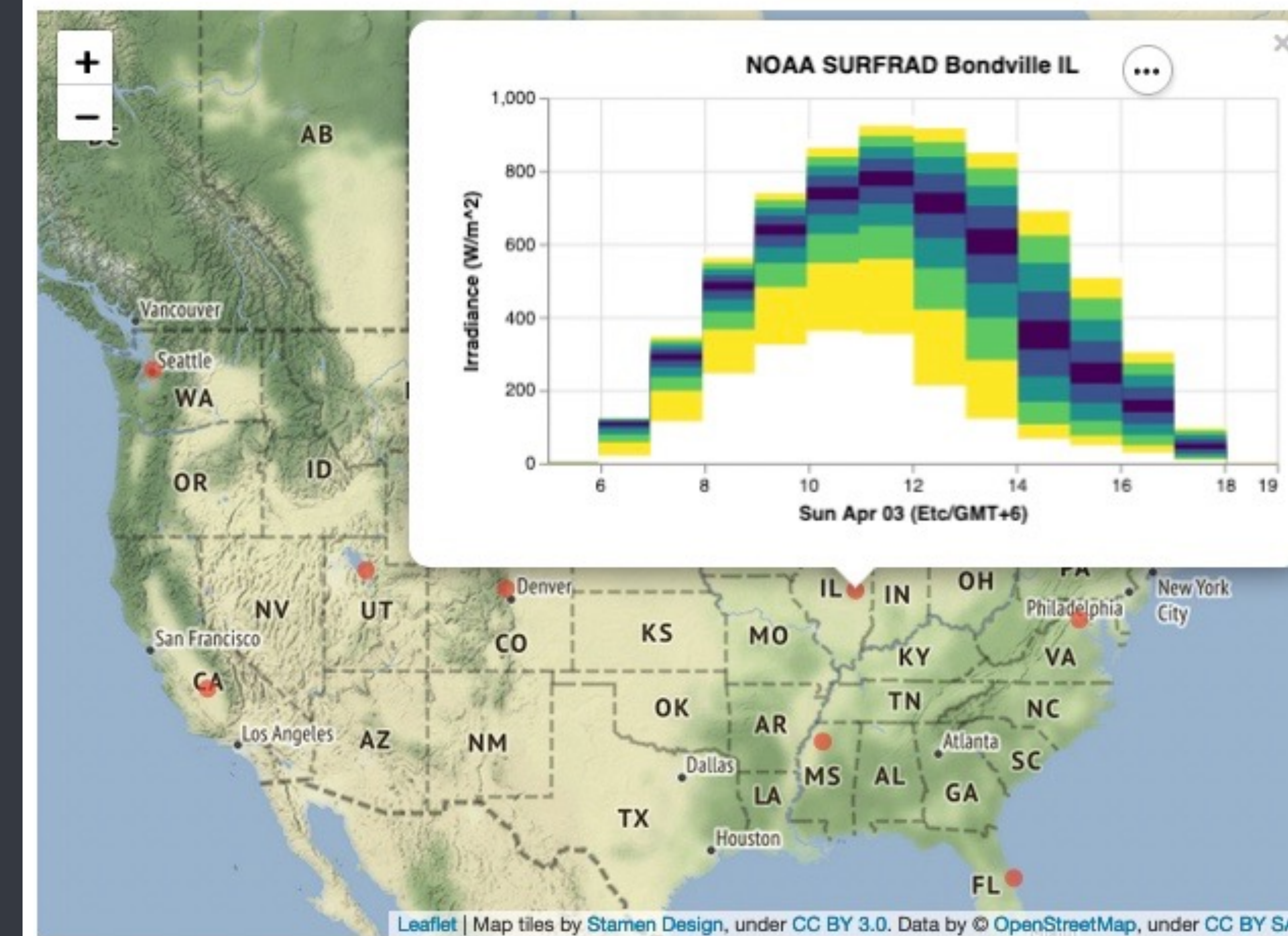
# Day-ahead probabilistic solar forecasting with machine learning:

- Tailored for day-ahead energy markets
- Geographically flexible
- API-based queries
- Fast & Inexpensive



## MVP Dashboard

### Nimbus Day-Ahead Solar Forecasts



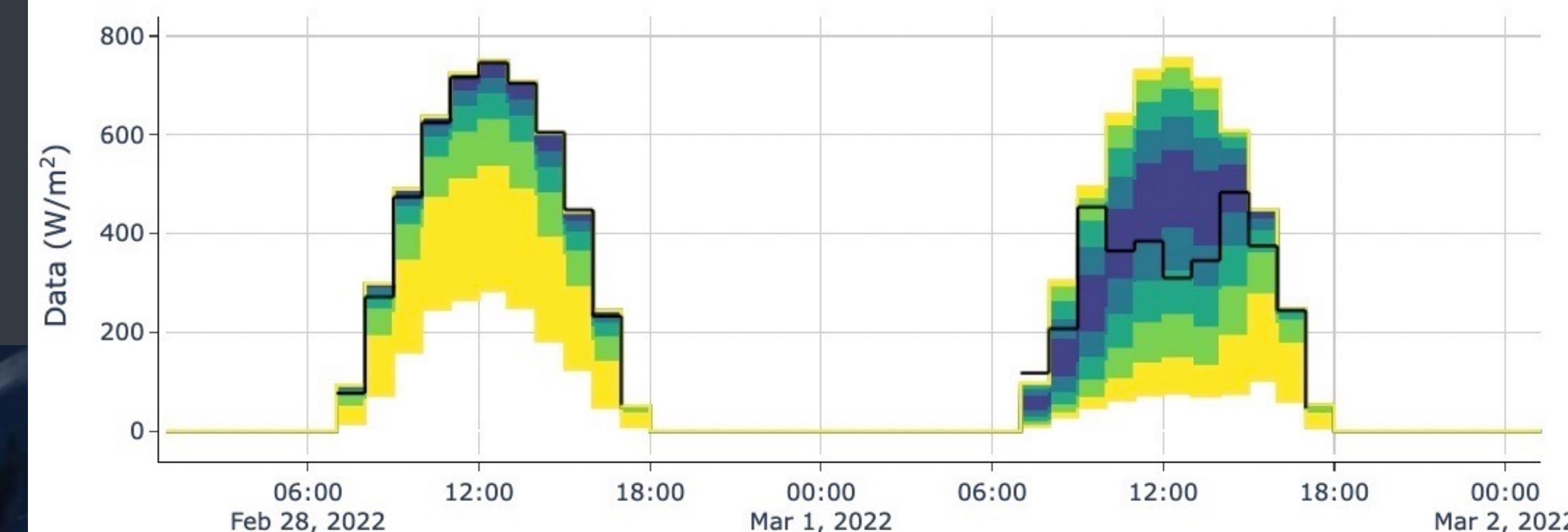
MVP dashboard; Bondville IL site

## Forecast Performance

A winner of the American-Made Solar Forecasting Prize 2022



The **only competitor** to beat baseline at all 10 climate-diverse test sites in the US evaluated during the competition.



Sterling, VA day-ahead clear sky and partly cloudy forecasts with realized irradiance