Modeling a Residential Photovoltaic System in SAM 2016.3.14

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Presentation Outline

- Downloading solar resource data from the NREL NSRDB database

- Designing the PV system

- Downloading electricity rate data for a tiered time-of-use rate from the NREL URDB

- Updating incentive information

- Generating building load data

- Viewing and interpreting results

Webinar next week:

"Modeling a Photovoltaic+Battery System in SAM 2016.3.14"

Wednesday, September 7, 1:00 pm – 2:00 pm MDT

Notes:

- o You must register to participate
- o Registration is free, but space is limited
- o More details and registration information on the Learning page of the SAM website

http://sam.nrel.gov/learning

- o This session will be recorded and posted on our website

System Advisor Model (SAM)

SAM is free software for modeling the performance and economics of renewable energy projects.

http://sam.nrel.gov
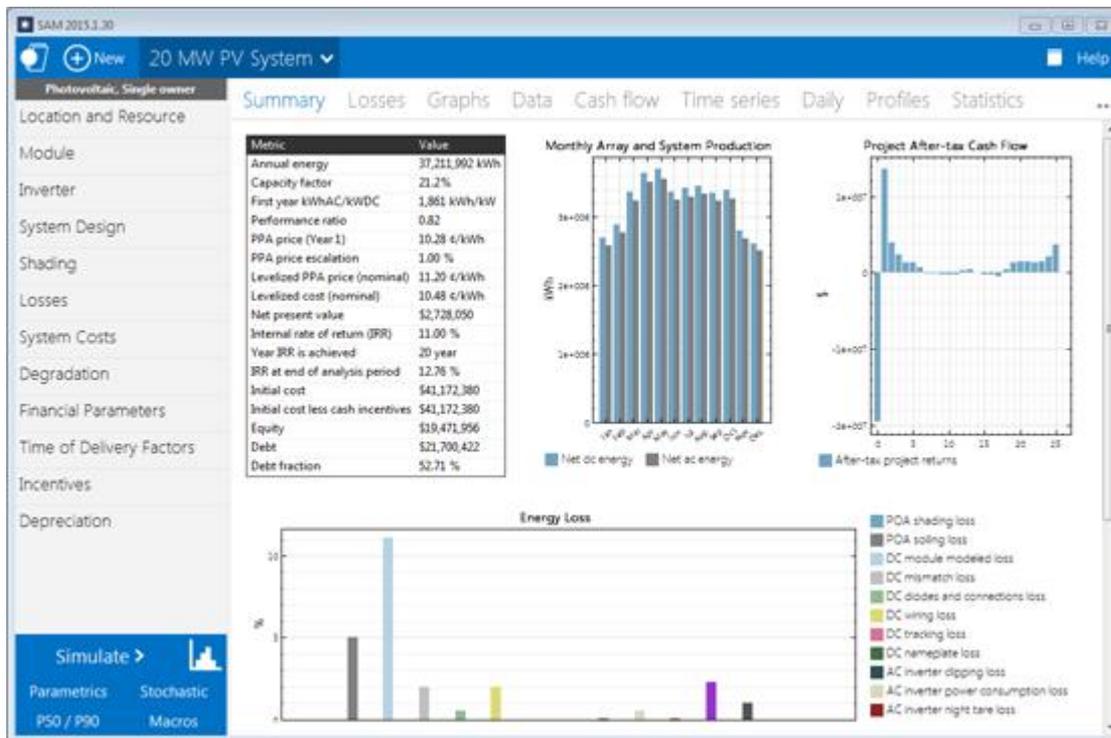
Developed by NREL with funding from DOE

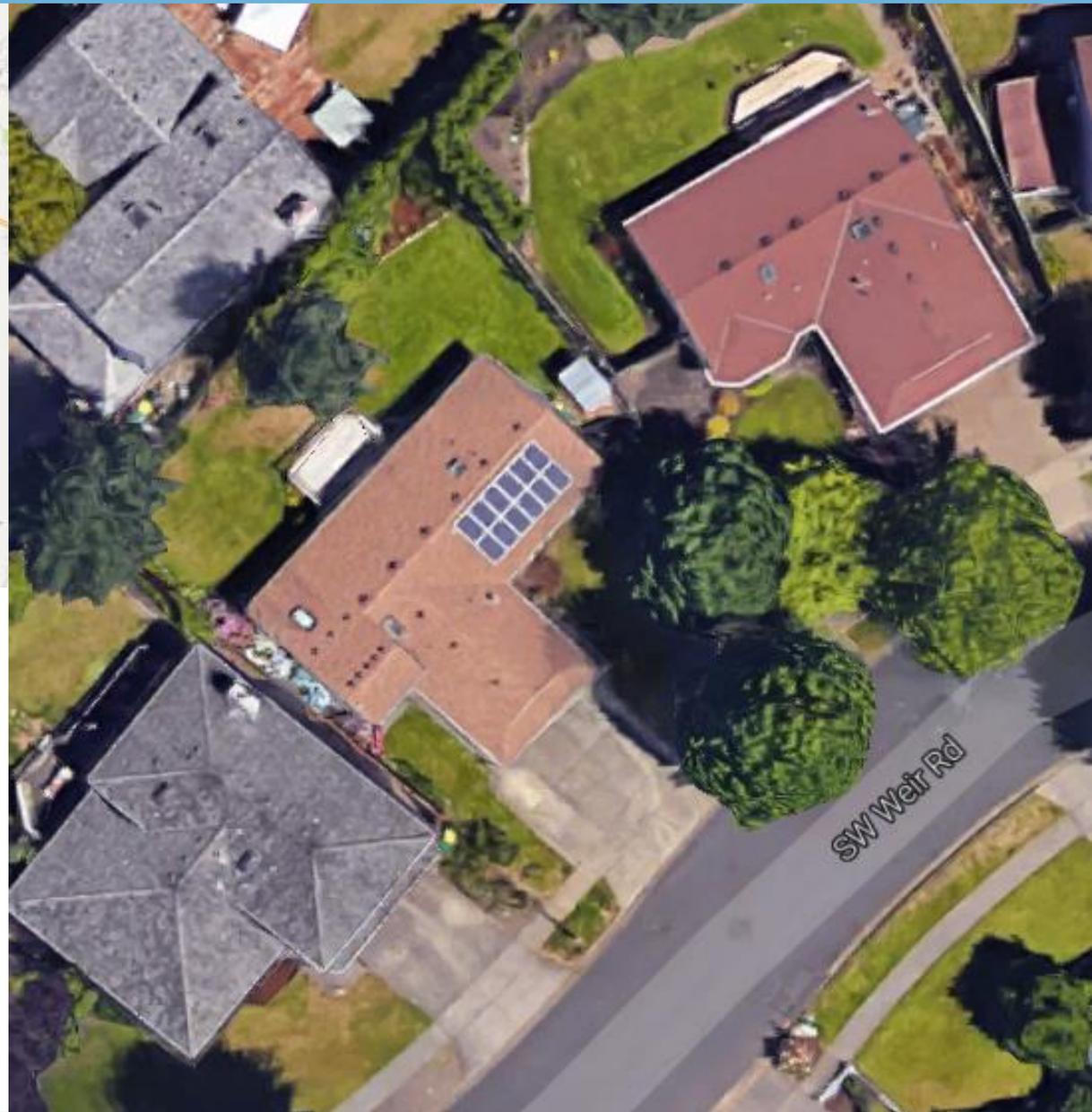Windows, OSX, and Linux

One or two new versions per year

Software Development Kit (SDK)

Support
- Help system
- Documents on website
- Online forum
- Contact form on website

3.3 kW PV system in Beaverton, Oregon

Key information:

12x 275 W SolarWorld Modules
1x 3.3 kW SMA Inverter
Facing southeast
Modest roof slope
Trees to the east

Guesses for other key model inputs

Financials and incentives:

- State incentive: $0.50 / Watt
- State tax rate: ~ 8 %
- PGE TOU Rate

Building information:

- ~1700 sqft home, 2 occupants
- ~500 kWh/month Oct-May, ~800 kWh/month June-Sept
- Heating setpoint 64 deg, Cooling setpoint 72
- 1 story
- Built in 1984

Now let's start up SAM….

Thank you!

Resources:
https://sam.nrel.gov/learning
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