Introduction to SAM 2020.2.29 Webinar Q&A Transcript

Can we can simulate generation hybrid systems (e.g. photovoltaic - eolic) in SAM?
SAM is not designed to model hybrid power systems, but there are some ways to approximate hybrid systems -- you can searth the SAM forum at https://sam.nrel.gov to read about some of these approaches. We do have plans to add some more hybrid system modeling capabilities in the next year or so, so stay tuned for that.
Can we use SAM to model a cogeneration (power-heat) system with specified amount of energy and power production?
SAM currently does not model CHP. However, SAM does have heat production calculations used in the Solar Water Heating technology and the Parabolic Trough - Heat and Linear Fresnel Direct Steam - Heat Concentrating Solar Power technologies.
How I can calculate the LCOE for CSP heat and CSP power (two different systems)
SAM has several CSP models (parabolic trough, power tower, etc) and two industrial process heat (IPH) models. You could create a file with two cases, one for a CSP system and one for an IPH system and calculate financial metrics for each case. Janine will show how to add cases to a project file -- the project she is showing now has a single case named "untitled" but you can click the Add button to add another case to the project.
Why the report generation for CSP does not include enough information?
We recommend using the data and graph exporting features Janine demonstrated to create your own reports and presentations. Because so many different kinds of people use SAM, it is difficult for us to design report templates to meet everyone's needs. We've put some effort into the PV report templates because a larger number of users use those models.
One methode for extrapolation of wind direction whith height?
SAM's wind power model uses the power law to extrapolate wind speed data in the weather file to the wind turbine hub height when the measurement height is different from the turbine height. It does not extrapolate wind direction data.
What is the meaning of P50/P90?
You can find a video on P50/P90 and the other simulation options here: https://sam.nrel.gov/forum/forum-general/2764-parametric-and-statistical-analysis, and There's a paper about SAM's P50/P90 feature listed here: https://sam.nrel.gov/weather-data/weather-data-publications.
You said SAM is an open source code. How I add a new funtion to SAM or tweak?
You can find the code repositories for SAM on GitHub at https://github.com/NREL/sam.
I'm using SAM and PVlib for PV system simulation. I'm wondering the difference between them. SAM has a very very nice user-graphic interface.
Hi the PV_LIB toolbox is a set of tools for building your own models. The deskop version of SAM is a user interface that uses many of the same models that are in PV_LIB. PySAM is another programming tool that provides access to the SAM Simulation Core (SSC) libraries via Python. You can learn about PySAM here: https://sam.nrel.gov/software-development-kit-sdk/pysam.
How do you differentiate SAM from the HOMER model? Since HOMER came out of NREL, why did NREL feel a need to develop SAM? (I'm not partial to HOMER. I'm just curious.)
SAM came out of the DOE solar program as a tool to evaluate and compare technology options for different types of solar technologies. It eventually evolved to include other technologies. SAM focuses on questions about a particular system design, while HOMER focuses on questions involving a large number of different design options. SAM has also focused on grid-connected systems, while HOMER does off-grid and on-grid.
Why can't a user construct a system based on any combination of the technologies available in SAM?

What is the software limitation that prevents that?
There are ways to combine the output of different systems in SAM, but it does not have a controller algorithm to decide how to dispatch power from different sources in the way that HOMER does.