

Downloading Solar Resource Data, Sep 2018

This is a transcript of the question and answer session from the NREL System Advisor Model (SAM) webinar on downloading weather data from the NSRDB.

Question and Answer Session

Question	Answer
Any plans for SAM weather files for the continent of Africa?	There are not currently plans at NREL for developing continent-wide weather data that we are aware of. Data for some countries may be developed as part of future projects at NREL, but that is outside of the SAM team.
Can I import data from other sources and do TMY using SAM	Yes, SAM supports several different formats, including TMY2, TMY3, EPW. So provided the other source can output a file in one of those formats, you can use it in SAM.
Does the year need to be at the end of the filename with a "_" in front of it?	I believe that if you are adding your own weather files, they can be named in whatever convention you wish. The naming convention shown here is simply how we've designed SAM's automatic download feature to work. Note that if your files are named differently, SAM will not be able to check to see if the file you are downloading is a duplicate of one of those files, but that is probably a minor consideration.
Is there any time varying albedo data available from SAM to use for modeling? Can bi-facial modules be modeled? thank you.	Yes, you can input time-varying albedo by including it in the weather file and selecting it to be used. Bifacial models are a new feature that will be included in the upcoming release, and our last webinar was on the new model: sam.nrel.gov/webinars .

Question	Answer
Regarding the question about Africa data - I believe PVGIS does have data for Africa.	Russ, thanks, you're quite right. It looks like the PVGIS data does cover Africa, and as Paul mentioned, that data is compatible with SAM. We hope to add the ability to automatically import it as well.
Why doesn't SAM/PVWatts handle leap day data? I'm having to run it twice for each leap year to calculate the leap day generation.	Historically, this is because SAM and PVWatts were designed to model 8760 data without the ability to handle leap years or even consider different start days of year (SAM assumes every simulation year starts on a Monday). In evaluating annual system performance, the inclusion of a leap day is not very significant. That being said, by not modeling the leap day, we realize this causes problems when trying to align with load data. We would like to add the flexibility to SAM to choose the specific year of simulation (and thereby the start day of week), and handle leap days, but this is not currently in progress.
I am sorry, I was not clear. In order to use a set of weather files for P50 P90 analysis, does the year need to be at the end of the filenames?	Yes, SAM's P50/P90 simulations require that the year be included in the weather file name, preceded by an underscore like this: filename_1998.csv.
Is there any change to the API for specification of the weather resource file?	The API input for specifying the weather resource file remains the same. The weather file changes are contained to the user interface.
To do the P50/P90 analysis, is the weather series analyzed to determine the P50/P90 typical years, or is SAM simulation run on all the years and the 50%/90% percentile calculated from the results?	When SAM does P50/P90 analysis, it runs each year separately and then calculates statistics from the results, both based on a normal distribution and on the empirical distribution as described here: https://www.nrel.gov/docs/fy12osti/54488.pdf .

Question	Answer
so when we input multiple years of data, we have to delete Feb 29th from the leap years?	Currently, SAM should automatically delete Feb 29 if it detects a leap day, so no, you do not have to remove it yourself. However, if you wish to delete a different day (for example Dec 31 instead), you would need to do that in advance of running the file so that it is only 8760 (or a multiple thereof) records long.
