Questions Log   SAM Webinars 2016 Modeling a Residential PV System in SAM 2016.3.14

Q: #33#[pedram jahangiri] [pedram.jahangiri@nationalgrid.com] [Q: 11:57 AM]

Q: I am ok[Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 11:58 AM]

Q: ok[FABIANO BOTELHO] [fabiano.botelho@forship.com.br] [Q: 11:58 AM]

Q: yes - I can hear and see[Paul Codd] [pc@ecoenergiayagua.com] [Q: 11:58 AM]

Q: audio is OK[Arnaldo Silva] [arnaldogil7@gmail.com] [Q: 11:59 AM]

Q: Can hear fine![Steven Janzou] [steven.janzou@nrel.gov] [Q: 11:59 AM]

Q: I can hear[Luis Francisco González Portillo] [lf.gonzalez@upm.es] [Q: 11:59 AM]

Q: Image is OK too[Arnaldo Silva] [arnaldogil7@gmail.com] [Q: 11:59 AM]

Q: Everything is working here[David Harrington] [david@csdllc.solar] [Q: 11:59 AM]

Q: No problem[Luis Francisco González Portillo] [lf.gonzalez@upm.es] [Q: 11:59 AM]

Q: Yes, hearing you[Marcelo Saravalle] [marcelo.saravalle@horiba-mira.com] [Q: 11:59 AM]

Q: its working[joao klein] [jkleinb@live.com] [Q: 11:59 AM]

Q: Hello, I do not have a microphone, only speakers. Will that be okay?[Taylor Deichmeister]
[taylor.deichmeister@trinitysolarsystems.com] [Q: 12:00 PM] [A: 12:00 PM]
A: yes, you do not need a microphone to listen to the webinar.

Q: Coming thru loud and clear![Sebastián Orozco] [sorozco@entornoclima.com] [Q: 12:00 PM]

Audience Question:
Q: can we download your presentation?[Paresh Patel] [sales@isolarnc.com] [Q: 11:59 AM] [A: 12:02 PM]
A: The presentation is not available for download since a good chunk of it will be a live demo, but a recording of the webinar will be available online after the webinar.

Audience Question:
Q: i dont see annything[Paul Codd] [pc@ecoenergiayagua.com] [Q: 12:06 PM] [A: 12:07 PM]
A: Paul, try closing and restarting the webinar from the email link.

Q: ok - I think its catching up[Paul Codd] [pc@ecoenergiayagua.com] [Q: 12:08 PM]

Audience Question:
Q: Can we access other locations beside the U.S. in SAM?[Rathavut Vanitsthian] [vanitsthian.r.th@ieee.org] [Q: 12:06 PM] [A: 12:08 PM]
A: Yes. You can download data direclty from the Location and Resource page for locations in most of North America, and northern Latin America. For other locations, see the Weather Data page on the SAM website for a list of resources: https://sam.nrel.gov/weather.

Audience Question:
Q: I still see the presentation - not SAM - is it just me?[Paul Codd] [pc@ecoenergiayagua.com] [Q: 12:07 PM] [A: 12:08 PM]
A: There may be some lag based on your internet connection   - SAM is visible on my remote desktop

Audience Question:
Q: ANy chance that there will be a hydro model in the future?[Tom DeBates] [habitek83@yahoo.coom] [Q: 12:08 PM] [A: 12:09 PM]
A: We have no immediate plans to add a hydro model, but please let us know of any requests for new features so we can consider them.

Audience Question:
Q: Will SAM ever have data for sites outside the US? For example Africa. Or can I input my our data?[Danny Blue] [dannyblue@greenergyad.com] [Q: 12:10 PM] [A: 12:11 PM]
A: SAM already accesses NREL NSRDB data for some locations outside of the U.S. You can use data from other sources in SAM for data that is not available from the NSRDB. See the Weather Data page on the SAM website for details.

Audience Question:

Q: Does it also contain radiation data for India[Pranav Maheshwari] [pranav.m@kwattsolutions.com] [Q: 12:11 PM] [A: 12:11 PM]
A: The NSRDB does contain data for India as well.

Audience Question:
Q: is it possible to load solar irradiation data from say, an international source?[tom roberts] [thomas.roberts@smec.com] [Q: 12:10 PM] [A: 12:12 PM]
A: Yes. You just need to put the data in a SAM CSV format file. See the Help system for a description of the format.

Audience Question:
Q: What about international addresses?[Victor Acquah] [vee.acquah@gmail.com] [Q: 12:11 PM] [A: 12:12 PM]
A: See my respons above.

Audience Question:
Q: How about Australia? Also can you manualy enter it?[Faraz Mirzaagha] [faraz.288@gmail.com] [Q: 12:12 PM] [A: 12:12 PM]
A: The NSRDB does not include data for Australia currently, but it is possible to input your own data. See Paul's response to an earlier question, and there are further details in Help.

Audience Question:
Q: so, is it possible to format data i collece elsewere and import it?[tom roberts] [thomas.roberts@smec.com] [Q: 12:12 PM] [A: 12:13 PM]
A: Yes.Use the SAM CSV file format for data from any source. It is described in the SAM Help system. There are also some macros to help with checking weather files.

Audience Question:
Q: Is there any solar data file for the Bahamas?[Zoltan Szasz] [besolarsupplies@gmail.com] [Q: 12:11 PM] [A: 12:13 PM]
A: The Bahamas are part of the NSRDB database, so you should be able to download data directly from SAM.

Audience Question:
Q: Will you be discussing, on this call, how to get P70, P80, P90, and P95 probability cases after one has created a reasonable looking base case?[Dana Griffith] [griffith_dw@yahoo.com] [Q: 12:13 PM] [A: 12:14 PM]
A: That's beyond the scope of today's session, but see the Videos page on the SAM website for a recording of a webinar on that subject. There is also information in Help, and topics you can search on the SAM support forum.

Audience Question:
Q: What's CEC?[Jim McLain] [jim.mclain@harcourtbrown.com] [Q: 12:14 PM] [A: 12:14 PM]
A: California Energy Commission

Audience Question:
Q: What if you dont know which module to use? is there a default?[Victor Acquah] [vee.acquah@gmail.com] [Q: 12:14 PM] [A: 12:15 PM]
A: Yes, there is a default populated for every value required in SAM

Audience Question:
Q: Whats the accuracy level of the radiation database[Pranav Maheshwari] [pranav.m@kwattsolutions.com] [Q: 12:13 PM] [A: 12:15 PM]
A: That depends on the source of the data. See the NSRDB website for articles about the source of data. Also the NREL handbook on solar resource data has a discussion of data accuracy for different data sources.

Audience Question:
Q: Whats the accuracy level of the radiation database[Pranav Maheshwari] [pranav.m@kwattsolutions.com] [Q: 12:13 PM] [A: 12:15 PM]
A: There is information about the accuracy of the radiation data on the NSRDB website, nsrdb.nrel.gov

Audience Question:
Q: How often is the module information (and other material datasets) updated?[Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:15 PM] [A: 12:16 PM]
A: With every release of SAM, we update the component databases. The CEC is no longer distributing inverter data, so we are working on a different source of that data for future versions.

Audience Question:
Q: Concerning the PV module models: Is there a preference by you guys of one over the other, i.e. the Sandia model over the CEC model?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:15 PM] [A: 12:16 PM]
A: Not really. For crystalline silicon modules the models are fairly equivalent. The CEC model has parameters for newer modules than the Sandia model.

Q: can i import data for a particular inverter?[tom roberts] [thomas.roberts@smec.com] [Q: 12:15 PM] [A: 12:17 PM]
A: Yes, you can specify an inverter from a data sheet

Audience Question:
Q: What do you mean by inverter?[Moataz Sheha] [moataz.ns@gmail.com] [Q: 12:16 PM] [A: 12:17 PM]
A: DC to AC Power conversion device

Audience Question:
Q: can i import data for a particular inverter?[tom roberts] [thomas.roberts@smec.com] [Q: 12:15 PM] [A: 12:17 PM]
A: Yes. Use the Inverter Database option on the Inverter input page to enter data from an inverter data sheet.

Q: good seminar[tom roberts] [thomas.roberts@smec.com] [Q: 12:18 PM]

Audience Question:
Q: How can we model PV systems where there are strings with different numbers of panels, i.e. a system with one string of 8 and one string of 9?[Anthony Cadorin] [anthony.cadorin@mesaaz.gov] [Q: 12:17 PM] [A: 12:18 PM]
A: For now, SAM assumes all strings in the system have the same number of modules per string. You can use the combine systems macro to model a system with different string lengths.

Audience Question:
Q: As far as I know, it is possible to generate CEC module parameters with a tool. Is it also possible for the Sandia model?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:17 PM] [A: 12:18 PM]
A: No. The Sandia parameters are based on test measurements, so there is not a similar tool for generating the parameters from manufacturer data.

Audience Question:
Q: Does it adjust Voc for low temp?[Tom DeBates] [habitek83@yahoo.coom] [Q: 12:18 PM] [A: 12:19 PM]
A: No.

Audience Question:
Q: What do you mean by module?[Moataz Sheha] [moataz.ns@gmail.com] [Q: 12:18 PM] [A: 12:19 PM]
A: He refers to the Photovoltaic (PV) panel, which is more formally known as a module

Audience Question:
Q: For thin film, the Sandia module model is more appropriate than the CEC model due to the modelling assumptions of the latter. Is that correct?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:18 PM] [A: 12:19 PM]
A: We don't know that. There has not been a rigorous comparison of the models to be able to answer that question conclusively.

Audience Question:
Q: Is it OK for the nameplate capacity to be over the inverters total capacity?[Sebastián Orozco] [sorozco@entornoclima.com] [Q: 12:18 PM] [A: 12:19 PM]
A: Yes, additional dc output will be clipped by the inverter MPPT range.

Audience Question:
Q: Is it OK for the nameplate capacity to be over the inverters total capacity?[Sebastián Orozco] [sorozco@entornoclima.com] [Q: 12:18 PM] [A: 12:20 PM]
A: Yes. SAM will calculate clipping losses and report them in the results.

Q: Doesn't PV[Larry Kerber] [Lkerber@gmail.com] [Q: 12:20 PM]

Audience Question:
Q: How to determine the value for GCR?[Pranav Maheshwari] [pranav.m@kwattsolutions.com] [Q: 12:19 PM] [A: 12:20 PM]
A: Please post that question on the support forum so we can give you a thoughtful response.

Audience Question:
Q: Can you model an inverter that has strings of two different module types? Say one mono-Si and one CIS string?[Russ Jones] [r.jones@energy.gov.sa] [Q: 12:20 PM] [A: 12:21 PM]
A: Not currently. We're working on that for a future version. You can use the combine systems macro to model such a system for now.

Audience Question:
Q: Doesn't PVWatts already compensate for snow?[Larry Kerber] [Lkerber@gmail.com] [Q: 12:20 PM] [A: 12:21 PM]
A: No. The snow cover model is a new feature in the latest version of SAM.

Audience Question:

Q: how do you determine if you need to layout the panels facing towards south (northern hamisphere) versus facing East-West facing? What is the determining factor?[Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:21 PM] [A: 12:22 PM]
A: In the northern hemisphere, south facing panels will generally provide the highest system output provided there are no obstructions.   You may however wish to orient the panels to the west if your electric load peaks later in the day, and to the east if your electric load peaks in the morning, or if there are southern obstructions.

Audience Question:
Q: Can you do a ground mounted scenario so we can see how that changes your design inputs?[Warren Evans] [wevans123@gmail.com] [Q: 12:20 PM] [A: 12:22 PM]
A: We won't have time for that now. You would model a ground mounted system in the same way as a roof mounted system.

Audience Question:
Q: There is any other webinar about Utility Scale PV plants?[David Cuesta] [david.cuesta@sener.es] [Q: 12:20 PM] [A: 12:22 PM]
A: Yes. Please see the Videos page on the SAM website for a list of all webinars we have given.

Audience Question:
Q: Is it possible to import a 3D scene from other softwares into the 3D shade calculator, ie. DXF files or similar?[Sebastián Orozco] [sorozco@entornoclima.com] [Q: 12:22 PM] [A: 12:23 PM]
A: Currently there is not an import feature in the 3d shading calculator

Audience Question:
Q: Is it possible to import a 3D scene from other softwares into the 3D shade calculator, ie. DXF files or similar?[Sebastián Orozco] [sorozco@entornoclima.com] [Q: 12:22 PM] [A: 12:23 PM]
A: Not yet, but that is a common request, so stay tuned for that in a future version. Please post the type of files you would like to import on the support forum.

Audience Question:
Q: Doesn't PVWatts already compensate for snow?[Larry Kerber] [Lkerber@gmail.com] [Q: 12:20 PM] [A: 12:23 PM]
A: There is a loss entry for snow in PVWatts that is an evenly applied percentage loss, but the model shown here actually models snow losses at the times throughout the year indicated by the snow in the weather file, so it is an actual model instead of a loss percentage.

Audience Question:
Q: How did u estimate dc/ac ratio before estimating system losses?[Shahid Chaudhry] [sfc95823@yahoo.com] [Q: 12:20 PM] [A: 12:23 PM]
A: It is calculated as the ratio of rated PV power divided by the rated inverter power

Audience Question:
Q: Does it simulate self consumption energy and consumption during the night?[David Cuesta] [david.cuesta@sener.es] [Q: 12:23 PM] [A: 12:24 PM]
A: Yes, those are inverter parameters. SAM reports those quantiites in the results.

Audience Question:
Q: I have read online that Sandia was teaming up with TUV Rheinland to extend the Sandia module database at some point. Is this an ongoing effort? Are new modules being added? Is there a website where data can be downloaded?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:22 PM] [A: 12:24 PM]
A: We coordinate with Sandia to get updates to their databases, but we are not leading those efforts, so those questions may be best addressed to Sandia.

Audience Question:
Q: I have read online that Sandia was teaming up with TUV Rheinland to extend the Sandia module database at some point. Is this an ongoing effort? Are new modules being added? Is there a website where data can be downloaded?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:22 PM] [A: 12:24 PM]
A: Not sure about that -- I am not aware of a website where you can download Sandia module parameters.

Audience Question:
Q: sound has disappeared??   I can still see presentatin   though[William Hoffer] [bhoffer@sunergyengineeringservices.com] [Q: 12:24 PM] [A: 12:25 PM]
A: Perhaps try exiting and re-entering the webinar?   Or try calling in again?

Audience Question:
Q: Is it possible to use SAM in stand-alone mode in case there is no access to grid?[Hadis Moradi] [hmoradi@fau.edu] [Q: 12:24 PM] [A: 12:25 PM]
A: No. SAM is designed to model grid-connected systems.

Audience Question:

Q: Can we develop an algorithm on Sam ?[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:24 PM] [A: 12:25 PM]
A: You can use the SDK to build your own model that runs SAM in the background. See the PV reference manual on the SAM website for a detailed description of the model algorithms.

Audience Question:
Q: can you change the default currency?[Asif Hayat] [ashay@statoil.com] [Q: 12:25 PM] [A: 12:25 PM]
A: No, you can't currently change the currency

Audience Question:
Q: can you change the default currency?[Asif Hayat] [ashay@statoil.com] [Q: 12:25 PM] [A: 12:26 PM]
A: No. SAM uses the dollar symbol for currency.

Audience Question:
Q: How can we modify shading pattern[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:22 PM] [A: 12:26 PM]
A: There are many ways to input shading data in SAM. You can see Help for more details, or look for more information on the support forum. There is also a previous webinar on the 3D shading tool on the videos page of the SAM website.

Audience Question:
Q: Can you direct me to a case study where a water supply system was modelled.[tom roberts] [thomas.roberts@smec.com] [Q: 12:25 PM] [A: 12:26 PM]
A: There are some case studies on the SAM website, although not one of a water system. Do you mean a solar pumping system?

Audience Question:
Q: How can we modify shading pattern[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:22 PM] [A: 12:27 PM]
A: You can either use the 3D shading tool to generate the shade profile on your system, or import shade tables from other software.

Audience Question:
Q: What about MPPT algorithm ?[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:26 PM] [A: 12:27 PM]
A: Please see the PV reference manual for dsecriptions of algorithms, or post questions on the support forum and we'll answer them.

Audience Question:
Q: yes, solar pumping, groundwater to a tank[tom roberts] [thomas.roberts@smec.com] [Q: 12:27 PM] [A: 12:27 PM]
A: We do not have a case study for such a system. SAM only models grid-connected systems.

Audience Question:
Q: Have you had or will you a webinar on Concentrated Solar Tower modeling with thermal storage?[Danny Blue] [dannyblue@greenergyad.com] [Q: 12:27 PM] [A: 12:28 PM]
A: Please see the Videos page on the SAM website for a webinar on that subject.

Q: Oregon has not sales tax.[Michael Beanland] [mbeanland@triaxiseng.com] [Q: 12:29 PM]

Audience Question:
Q: How does the inflation factor affect solar value economic analysis? Is it reflected in the financed cost/kWh?[Jim McLain] [jim.mclain@harcourtbrown.com] [Q: 12:28 PM] [A: 12:29 PM]
A: SAM uses a cash flow model to calculate financial metrics. The inflation rate affects the out year project costs in the cash flow. You specify those costs in Year 1 dolalrs, and the inflation rate is used to calculate their value in later years. See the Help system for more details.

Audience Question:
Q: Is it possible to sync Sam with Matlab?[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:28 PM] [A: 12:29 PM]
A: Yes, the SAM software development toolkit (SDK) has a MATLAB wrapper which can be used to access SAM's models through MATLAB code

Audience Question:
Q: Is it possible to sync Sam with Matlab?[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:28 PM] [A: 12:29 PM]
A: We provide a Matlab wrapper to the SAM SDK see https://sam.nrel.gov/sdk for more details

Audience Question:
Q: Is it possible to sync Sam with Matlab?[Muhammad Yaqoob Javed] [yaqoobsheikh@gmail.com] [Q: 12:28 PM] [A: 12:29 PM]
A: Yes. You can use the SDK to run SAM from MATLAB.

Q: Do you have the provision for discount rate in SAM?[Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:29 PM] [A: 12:29 PM]
A: Yes. THe discount rate is an input on the Financial Parameters input page.

Q: Do you have the provision for discount rate in SAM?[Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:29 PM] [A: 12:29 PM]
A: Yes, the discount rate is present for commercial and utility financial structures

Q: How we can model a fixed array and a single-axis tracking array togather? For exapmle we have a 14.7 kW system including two arrays. one is fixed and south facing and another in tracking array which rotates from East to West in a day. please advise[Hadis Moradi] [hmoradi@fau.edu] [Q: 12:29 PM] [A: 12:30 PM]
A: On the System Design page, use two subarrays: One with fixed modules and one with one-axis tracking.

Q: Does SAM calculate MACRS accelerated depreciation?[Christopher Fortson] [christopherf@osceolaenergy.com] [Q: 12:29 PM] [A: 12:30 PM]
A: Those are available for financial markets with depreciation - commercial and utility scale.

Q: Do we uncheck all the options?[Victor Acquah] [vee.acquah@gmail.com] [Q: 12:29 PM] [A: 12:30 PM]
A: Yes, you can uncheck the incentive options and set values to 0 to model a system with no icentives.

Q: Does SAM calculate MACRS accelerated depreciation?[Christopher Fortson] [christopherf@osceolaenergy.com] [Q: 12:29 PM] [A: 12:30 PM]
A: Yes, but only for the Commercial or PPA financial models.

Q: What if there are no incentives at all - like modelling a system in a country without incentives   ?[Victor Acquah] [vee.acquah@gmail.com] [Q: 12:29 PM] [A: 12:30 PM]
A: Then set all of the incentive inputs to zero.

Q: Could I import my own solar module model?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:30 PM] [A: 12:31 PM]
A: No. Please contact us on the SAM support forum about what you would like to do. We are considering options for that kind of flexiblity for a future version of SAM.

Q: What are the recommended values for discount rate for estimation purposes? [Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:30 PM] [A: 12:31 PM]
A: That depends on your analysis. Typically the discount rate represents the value of an alternative to the PV project.

Q: What are the recommended values for discount rate for estimation purposes? [Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:30 PM] [A: 12:32 PM]
A: SAM provides some defaults for these values.   Often government/state organizations have lower discount rates, residences or individuals may have slightly higher, and commercial entities oculd have higher rates

Q: max incentive value of 5000$ has to be added, correct?[Pranav Maheshwari] [pranav.m@kwattsolutions.com] [Q: 12:32 PM] [A: 12:32 PM]
A: Yes, you can specify a maximum for some incentives.

Q: Why do you use a DC to AC ratio of more than 1? Does it apply for all sites?[Yatindra Kumar Ramgolam] [y.ramgolam@uom.ac.mu] [Q: 12:32 PM] [A: 12:33 PM]
A: It is fairly standard practice to "oversize" the array to maximize system output over the year. You can read more about that in PV design textbooks and websites.

Q: How can I module iiregular arrays of PV systems?[Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:32 PM] [A: 12:33 PM]
A: You can define more than one subarray on the System Design page.

Q: Hi, shouldn't we include the max of $5000 for the incentive? Just for the sake of completeness ;)[Linus Beer] [linus.beer@mc-group.com] [Q: 12:32 PM] [A: 12:33 PM]
A: Sure.

Q: How reliable is the Open EI utility rate structure? This only includes T&D, or does it also include generation assets? [Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:33 PM] [A: 12:34 PM]
A: It is a good starting point and saves a lot of time entering data. You should always check the data against a rate sheet to make sure it is as accurate as possible.

Q: Do you know about the Sap-Solar Heliene, trade mark, of solar module?Is there this modelin SAM?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:33 PM] [A: 12:34 PM]
A: If you search for this module in the database and you find it, then you can use it from there. If not, there is also the option to input module parameters from a datasheet that you could use for this module. There is more detail in the Help system.

Q: How reliable is the Open EI utility rate structure? This only includes T&D, or does it also include generation assets? [Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:33 PM] [A: 12:35 PM]
A: There is an ongoing effort to update the Open EI utility rate database.   The database covers common rates for customers in Residential, Commercial, and Industrial rate plans across the country

Q: Who maintains the EI database? How regularly is it updated?[Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:35 PM] [A: 12:35 PM]
A: NREL and partners maintain it. It is currently being updated, but the update schedule depends on funding, so varies from year to year.

Q: If we have average irradiance of more then 1kW/m2 in summer months, is it better to lower the DC to AC ratio?[Yatindra Kumar Ramgolam] [y.ramgolam@uom.ac.mu] [Q: 12:35 PM] [A: 12:36 PM]
A: That is a design question you can use SAM to explore. Try different ratios and see what the results are.

Q: what is the difference between electric rates and electric load?[Moataz Sheha] [moataz.ns@gmail.com] [Q: 12:35 PM] [A: 12:36 PM]
A: Rates are the price of electricity. Load is the electricity consumption of the building.

Q: what is the difference between electric rates and electric load?[Moataz Sheha] [moataz.ns@gmail.com] [Q: 12:35 PM] [A: 12:36 PM]
A: Rates are charges per kWh or kW and load is actual energy use and demand

Q: Electricty rates are only for US database?[Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:36 PM] [A: 12:36 PM]
A: the majority of the electric rates are located in the US, but the database is not restricted to the US only, so there may be some international utility rates. You can also upload utility rates to the database yourself, which would enable lots of users to find that rate.

Q: Can TMY files be edited?[Yatindra Kumar Ramgolam] [y.ramgolam@uom.ac.mu] [Q: 12:36 PM] [A: 12:37 PM]
A: Yes, weather files can be edited.

Q: Is it possible to change the weather parameter from Sq for KM and F° to celsius?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:36 PM] [A: 12:37 PM]
A: Currently no

Q: Is it possible to change the weather parameter from Sq for KM and F° to celsius?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:36 PM] [A: 12:37 PM]
A: No. It is not possible to change units in SAM.

Q: The Industrial Assessment Centers regularly calculate rate structures for different areas. Perhaps there would be a way to incorporate their work into the database.[Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:37 PM] [A: 12:38 PM]

A: Yes. Please follow up with us to discuss further. Emali sam dot support at nrel dot gov.

Audience Question:
Q: The Industrial Assessment Centers regularly calculate rate structures for different areas. Perhaps there would be a way to incorporate their work into the database.[Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:37 PM] [A: 12:38 PM]
A: Thanks, we will investigate further.

Audience Question:
Q: The Industrial Assessment Centers regularly calculate rate structures for different areas. Perhaps there would be a way to incorporate their work into the database.[Ryan Schuessler] [schuessler.ryan@gmail.com] [Q: 12:37 PM] [A: 12:38 PM]
A: We would certainly be interested in incorporating more utility rate data if possible, I will make a note to investigate

Audience Question:
Q: Why no Electric Hot Water Heater in the Load listing?[Thomas Lee] [toml@sunspotenergy.com] [Q: 12:38 PM] [A: 12:39 PM]
A: That's a separate model. You should see it listed when you create a new case.

Audience Question:
Q: what should I enter in "Tilt and Azimuth" boxes for a solar tracking unit which has rotation limit of 90 degs between East to West ?[Hadis Moradi] [hmoradi@fau.edu] [Q: 12:37 PM] [A: 12:39 PM]
A: Please post that question on the SAM support forum.

Audience Question:
Q: So, I live in Brazil.Do you think possible, I use SAM for my projects, here?Do you know same case study with SAM to Brazil?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:39 PM] [A: 12:40 PM]
A: Yes, you can model systems in Brazil. I am not aware of a case study.

Audience Question:
Q: what should I enter in "Tilt and Azimuth" boxes for a solar tracking unit which has rotation limit of 90 degs between East to West ?[Hadis Moradi] [hmoradi@fau.edu] [Q: 12:37 PM] [A: 12:40 PM]
A: Tilt represents the tilt of the axis of the tracker (typically it is zero for tracking systems), and likewise, azimuth represents the azimuth orientation of the tracker axis.

Audience Question:
Q: Can SAM design an array where the strings are all different sizes and made up of a different type of module per string?[Jake Rada] [jsr406@humboldt.edu] [Q: 12:39 PM] [A: 12:40 PM]
A: No. Please post a description of the system you would like to model to the SAM support forum so we can consider adding features to make that possible.

Audience Question:
Q: How to introduce irregular numebr of modules? [Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:39 PM] [A: 12:41 PM]
A: You could use the combine systems macro to do that.

Audience Question:
Q: what's difference between real and nominal LCOE?[Jim McLain] [jim.mclain@harcourtbrown.com] [Q: 12:40 PM] [A: 12:41 PM]
A: The real LCOE is calculated with the real discount rate and the nominal LCOE with the nominal discount rate. All cash flow values are shown in nominal dollars.

Audience Question:
Q: Can SAM show changes in I and V of strings as well in the results?[Yatindra Kumar Ramgolam] [y.ramgolam@uom.ac.mu] [Q: 12:39 PM] [A: 12:41 PM]
A: The hourly data in the Results show the array voltages.

Audience Question:
Q: How do you differentiate between nominal and real LCOE?[Anis Ahmed] [ahmed_anis@cat.com] [Q: 12:41 PM] [A: 12:42 PM]
A: See the Financial Parameters input page for the different nominal and real discount rates

Audience Question:
Q: Where do i find this combine system macro?[Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:42 PM] [A: 12:42 PM]
A: Click Macros in the bottom left of the Main window and you should see it listed there.

Audience Question:
Q: What do you mean by data here? The energy production through the module?[Moataz Sheha] [moataz.ns@gmail.com] [Q: 12:42 PM] [A: 12:43 PM]

A: Data refers to the output information generated during the simulation, which would include the energy production and any other output

Audience Question:
Q: Could SAM show electrical schemes?[HERNAN VIDAL] [hernan.vidal@vepica.com] [Q: 12:44 PM] [A: 12:45 PM]
A: We've considered this possibility, particularly for system level electrical connections, but don't currently have this ability

Q: tks!![HERNAN VIDAL] [hernan.vidal@vepica.com] [Q: 12:45 PM]

Audience Question:
Q: The report provided, is it only generated in english lenguage, or t can be customized in spanish?[Carlos Rodríguez] [carlrodcor@hotmail.com] [Q: 12:46 PM] [A: 12:46 PM]
A: The report is only in English for now.

Audience Question:
Q: PVWatts used to offer a valuable cost/kWh financed economic analysis. Will that be restored?[Jim McLain] [jim.mclain@harcourtbrown.com] [Q: 12:45 PM] [A: 12:46 PM]
A: Not sure about plans for PVWatts -- please post a question on the support forum and I will follow up.

Audience Question:
Q: The units for the 3d scene calculator are metric, correct?[Anthony Cadorin] [anthony.cadorin@mesaaz.gov] [Q: 12:46 PM] [A: 12:47 PM]
A: The units are relative, so it doesn't really matter what units you use to draw objects in the scene.

Audience Question:
Q: Is it possible to model a solar unit including two subarrays where each subarray has different solar panels?[Hadis Moradi] [hmoradi@fau.edu] [Q: 12:47 PM] [A: 12:47 PM]
A: Not in the current version of SAM, but we are considering how to make that possible.

Audience Question:
Q: Is it possible, to change language of SAM?[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:47 PM] [A: 12:47 PM]
A: Not for now.

Q: Well if you pull in an overhead (Google Earth) photo as the base and draw over it, then the units do matter substantially! Are the default units for the overhead map measurements in metric?[Anthony Cadorin] [anthony.cadorin@mesaaz.gov] [Q: 12:48 PM]

Q: Could you discuss a little the poor investment return this system offers?[Kathryne Kent] [kksolar@lava.net] [Q: 12:48 PM]

Q: can 3D image from Google be imported for shade analysis?[Paresh Patel] [sales@isolarnc.com] [Q: 12:48 PM]

Q: Is there a means to specify electric vs. other heating for electric load estimation?[Nick Caton] [nicholas.caton@schneider-electric.com] [Q: 12:48 PM]

Audience Question:
Q: What is the main reason for negative NPV[Bharat Patel] [bpatel@adeptcorporation.com] [Q: 12:48 PM] [A: 12:49 PM]
A: That generally indicates that the project savings or revenue are not sufficient to cover the initial cost.

Audience Question:
Q: What is the main reason for negative NPV[Bharat Patel] [bpatel@adeptcorporation.com] [Q: 12:48 PM] [A: 12:49 PM]
A: It means that it would be more costly to install a system over the analysis period than it would be to do nothing.   Meaning it's not a good investment.

Q: Mostly an overiew of using this for non-USA locations ...[Victor Acquah] [vee.acquah@gmail.com] [Q: 12:49 PM]

Q: ?[Arnaldo Silva] [arnaldogil7@gmail.com] [Q: 12:49 PM]

Audience Question:
Q: Can the 3D shading model import a SketchUp model?[Tom Durston] [tom@solaraltdesign.com] [Q: 12:48 PM] [A: 12:49 PM]
A: Not yet, but we're working on something like that.

Q: so we have to create it?[Paresh Patel] [sales@isolarnc.com] [Q: 12:50 PM]

Q: How much variation in % to expect if i am considering all standard losses in SAM ?[Ankush   Rastogi] [ankushr@solconsults.com] [Q: 12:50 PM]

Q: is there API for this detailed PV system in SAM?[pedram jahangiri] [pedram.jahangiri@nationalgrid.com] [Q: 12:50 PM] [A: 12:50 PM]
A: Yes. Please see the SDK page on the SAM website.

Q: A bit off topic: Are you currently planning any updates to the NREL developer APIs?[Timo Richert] [t.p.richert@gmail.com] [Q: 12:48 PM] [A: 12:50 PM]
A: We do provide updates to the SAM SDK, is there an API in particular you are interested in?

Q: It is possible to import files from AUTOCAD?[CARLOS MARIO GIRALDO] [carlos.giraldo.yepes@gmail.com] [Q: 12:49 PM] [A: 12:50 PM]
A: Not in the current version,.

Q: can i get the data for India
[Vignesh Panneerselvam] [vigneshceg1993@gmail.com] [Q: 12:49 PM] [A: 12:51 PM]
A: Yes. You can get India weather data from the NREL NSRDB.

Q: Samá databse includes latinamerica?[Adolfo Perez] [alephe57@gmail.com] [Q: 12:49 PM] [A: 12:51 PM]
A: Yes.

Q: How much could I charge a client per kw consulting?[Luis Albanes] [albanesmolina@gmail.com] [Q: 12:48 PM] [A: 12:51 PM]
A: That often depends on your location and experience in the field in addition to your negotiation with the client

Q: Could you explain me, how could I import an other   location, please?Brazil in particular[Marcello Testoni] [tecnica.baseprofessional@uol.com.br] [Q: 12:51 PM]

Q: Can SAM address the non-linear nature of AC and DC losses?[Michael Beanland] [mbeanland@triaxiseng.com] [Q: 12:49 PM] [A: 12:51 PM]
A: SAM does calculate some non-linear losses. Maybe follow up on the SAM support forum for a more detailed answer.

Q: basically all of the details that Aron went through [pedram jahangiri] [pedram.jahangiri@nationalgrid.com] [Q: 12:51 PM]

Q: Since the weather data is very important is that possible to do quick manual entry [Faraz Mirzaagha] [faraz.288@gmail.com] [Q: 12:49 PM] [A: 12:51 PM]
A: Yes,

Q: Is there a preference for one of the cell temperture models? I.e. NOCT vs heat transfer model..[Timo Richert] [t.p.richert@gmail.com] [Q: 12:52 PM]

Q: How do you size/select the inverter? and how do you estmimte the number of inverters required?[david serna] [davidsernav@gmail.com] [Q: 12:49 PM] [A: 12:52 PM]
A: That depends on your design requirements.

Q: Could you discuss the relative merits of string inverters, microinverters and optimizers?[Ron Rebenitsch] [ron.rebenitsch@gmail.com] [Q: 12:53 PM]

Q: Is there a way to do a batch analysis of multiple locations across the US without manually inputting all of the variables one location at a time?[Manussawee Sukunta] [manussawee.sukunta@eia.gov] [Q: 12:50 PM] [A: 12:53 PM]
A: Yes. You could use the LK scripting language to write a script an automate that process.

Q: Is there any ideal DC/AC ratio, is there any maximum value
[Deepak Jain Veerendra Kumar] [dveerend@asu.edu] [Q: 12:53 PM]

Q: What's the accuracy between the design made in SAM v/s the real PV plant constructed? Do you have some examples?[Francisco Pizarro] [francisco.pizarroc@usach.cl] [Q: 12:50 PM] [A: 12:53 PM]

A: We have some papers comparing SAM results to measured data on the SAM website.

Q: What's the accuracy between the design made in SAM v/s the real PV plant constructed? Do you have some examples?[Francisco Pizarro] [francisco.pizarroc@usach.cl] [Q: 12:50 PM] [A: 12:53 PM]
A: We've done validation against real systems with SAM and other models, including PVSyst, these are on the SAM website under Resources

Q: What's the accuracy between the design made in SAM v/s the real PV plant constructed? Do you have some examples?[Francisco Pizarro] [francisco.pizarroc@usach.cl] [Q: 12:50 PM] [A: 12:53 PM]
A: We have performed some validation studies of SAM that can be found on the SAM website.

Q: Considering the solar irradiation, Do you have any reference for Latin America (Brazil for more specific)[Arnaldo Silva] [arnaldogil7@gmail.com] [Q: 12:49 PM] [A: 12:53 PM]
A: Yes. SAM can download that data from the NSRDB.

Q: what about including comparative savings? as in number of trees saved?/number off gallons of gas saved?/etc.[Hugh Chandleur] [hrchandleur@wattsunllc.com] [Q: 12:50 PM] [A: 12:54 PM]
A: That is analysis you could do outside of SAM.

Q: Is it possible to create a custom report?[Jen Presto] [jpresto@daimc.com] [Q: 12:50 PM] [A: 12:54 PM]
A: Not in the current version of SAM.

Q: I understand SAM doesn't calculate/simulate the losses. What source would you indicate to simulate system's losses? [Rachel Andalaft] [info@rea-consult.com] [Q: 12:50 PM] [A: 12:54 PM]
A: SAM does simulate losses for several types of system losses, but there are some that it does not explicitly model. Other tools may provide more detailed models for some of those loss mechanisms depending on the tool that you choose.

Q: How can I get help with inputing our Utilities' rates to be available to all users?[Lindsay Joye] [lindsay.joye@cityofpaloalto.org] [Q: 12:53 PM] [A: 12:54 PM]
A: Please contact sam.support@nrel.gov to follow up.

Q: Are the financial data parameters bankable for investment purposes.[Danny Blue] [dannyblue@greenergyad.com] [Q: 12:51 PM] [A: 12:54 PM]
A: We have antecdotes from companies leveraging SAM for large scale investment

Q: Is it possible to only take out only system cost, wothout financial modeling? [Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:50 PM] [A: 12:54 PM]
A: I don't think so. SAM needs the financial parameters for the csah flow calculations.

Q: Does the shading calculator calculate the actual losses per panel, depending on the model of the panel, with/without diodes etc, or does 20% shading simply mean 20% losses on that panel. Also, does shading on one panel affect the output of the whole string or just the one panel?[Paul Codd] [pc@ecoenergiayagua.com] [Q: 12:51 PM] [A: 12:55 PM]
A: The shading calculator makes simplifying assumptions to estimate the effect of shade on the entire array.

Q: thanks for discussing the NPV.   i did not catch their consumption at beginning.   approciate the good info[Kathryne Kent] [kksolar@lava.net] [Q: 12:56 PM]

Q: Are there Concentrating PV modules in the database?[Luis Francisco González Portillo] [lf.gonzalez@upm.es] [Q: 12:51 PM] [A: 12:56 PM]
A: There is a separate CPV model -- you should see it in the list when you create a new case.

Q: While creating different Pv cases when combing them what happens to inverter? [Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:51 PM] [A: 12:56 PM]
A: Each case has a separate inverter.

Q: how do we decide the sizing of the invertor, in proportion to the PV Kwh output?[Shalaim Virkar] [svirkar@asu.edu] [Q: 12:54 PM] [A: 12:56 PM]
A: The PV sizing macro can give you a starting point for some of that information. If you click "macros" under the "simulate" button, you will see that macro included in the list. Previous webinars show more detail on running macros.

Q: Do you think SAM as a good option to leave the licensed software, like PVSyst?[Alejandro Vazquez] [alevazqueze@gmail.com] [Q: 12:50 PM] [A: 12:56 PM]
A: It ultimately depends on your company and the analysis you are performing.   Many of the most common modeling tools have similar features, so it's up to you to figure out which software package may work best for you.

Q: can you also enter the GPS location of PV system[Faraz Mirzaagha] [faraz.288@gmail.com] [Q: 12:51 PM] [A: 12:57 PM]
A: You can use geographic coordinates (Lat/Lon) to find weather data for locations in the Americas.

Q: Where can I find the information to generate my own weather file?[David Cuesta] [david.cuesta@sener.es] [Q: 12:52 PM] [A: 12:57 PM]
A: See the Weather File Formats topic in the Help system.

Q: Is there any ideal DC/AC ratio, is there any maximum value
[Deepak Jain Veerendra Kumar] [dveerend@asu.edu] [Q: 12:55 PM] [A: 12:57 PM]
A: Ideal DC to AC ratio depends on your system design, location, and which parameter you are trying to optimize. This is a great question to use SAM's "parametric" capabilities, which a previous webinar discusses in more detail.

Q: Is there any ideal DC/AC ratio, is there any maximum value above which we can't go?[Deepak Jain Veerendra Kumar] [dveerend@asu.edu] [Q: 12:52 PM] [A: 12:57 PM]
A: That depends on the site. You can use SAM to find the optimal value.

Q: Is it opssible to do the installation without inverter? For example for installation that works with DC[Anna Bortkiewicz] [anna.bortkiewicz@iznab.pl] [Q: 12:57 PM]

Q: Does this New data set contain any part of Africa?[Ifeoluwalayomi   Woleosho] [ifeoluwa.osho@yahoo.com] [Q: 12:52 PM] [A: 12:58 PM]
A: No.

Q: How to load the irradiance data for the MALI Africa[IBRAHIM TRAORE] [ibrahim.traore7@gmail.com] [Q: 12:58 PM]

Q: What is the best way to create module input files from PAN files?[Matthew Seitzler] [SeitzlerM@bv.com] [Q: 12:52 PM] [A: 12:58 PM]
A: That is not currently possible.

Q: Hey thanks for the info!
Regards, Yuri
Ukraine, Odessa[Yuri Tascheev] [tascheev@ukr.net] [Q: 12:54 PM] [A: 12:59 PM]
A: Certaintly, thanks for attending

Q: Additionally what is the best way to create inverter input files from OND files?[Matthew Seitzler] [SeitzlerM@bv.com] [Q: 12:53 PM] [A: 12:59 PM]
A: SAM does not have that capability at the moment. You can use the Inverter Database option to specify an inverter that is not in SAM's library.

Q: Does the irradiation/weather data account for daylight saving or do adjustments have to me made?[Sidharth Choudhary] [schoudhary@cse.fraunhofer.org] [Q: 12:57 PM] [A: 12:59 PM]
A: No, daylight savings time is not accounted for

Q: I understand SAM doesn't calculate/simulate the losses. What source would you indicate to simulate system's losses? [Rachel Andalaft] [info@rea-consult.com] [Q: 12:55 PM] [A: 12:59 PM]

A: SAM does calculate some losses, while others are represented by input percentages.

Audience Question:
Q: what location we can find the previous webinars[Paresh Patel] [sales@isolarnc.com] [Q: 12:58 PM] [A: 12:59 PM]
A: sam.nrel.gov/videos

Audience Question:
Q: Is there a way to enter different string sizes for inverters with two mppt trackers?[Charles Moore]
[CharlesM99@gmail.com] [Q: 12:57 PM] [A: 1:00 PM]
A: Not for now, although the combine systems macro provides a way to workaround that.

Q: Thank you![Phil   Lou] [phillou@comcast.net] [Q: 1:00 PM]

Q: Thanks to the whole SAM team! Great work! Best reagrds from Germany.. :)[Timo Richert] [t.p.richert@gmail.com] [Q: 1:00 PM]

Audience Question:
Q: will we have a copy of the questions and answers with the recording of the webinar?[Vicky Newman]
[vicky.newman@rpdelio.com] [Q: 12:58 PM] [A: 1:00 PM]
A: I am not sure, you may want to make a note of anything of interest to you,

Audience Question:
Q: will we have a copy of the questions and answers with the recording of the webinar?[Vicky Newman]
[vicky.newman@rpdelio.com] [Q: 12:58 PM] [A: 1:00 PM]
A: Yes.

Q: Thank you[Arnaldo Silva] [arnaldogil7@gmail.com] [Q: 1:01 PM]