

Aurora Solar – Creating a Solar Resource Assessment for Energy Trust Incentive Applications

Energy Trust requires that each incentive application include a solar resource assessment using an approved site analysis tool. Solar resource assessments evaluate the impact of shading and array tilt and orientation on the annual production of the solar electric system. **For remote shade analysis tools such as Aurora Solar, Energy Trust requires that each individual array on a site have a Total Solar Resource Fraction (TSRF) of 80% or greater to be eligible for Program incentives.**

For more information: www.aurorasolar.com

Introductory webinar: Tuesday, November 15 from 10:00 – 11:00 a.m. - [Register for the webinar](#)

1. **Prior to using Aurora Solar to create a solar resource assessment, each member of your sales or system design team must go through an official training with Aurora Staff.**
2. Select the customer's site and [draw the complete roof structure in 2D](#).
3. Draw any shade obstructions on the roof surface or surrounding trees that will effect system performance.
4. Using available [LiDAR imaging](#) or [Aurora Envision](#) adjust the shape and height of shade obstructions in the 3D view to provide a conservative solar resource assessment.
5. Design a solar electric system that meets all program requirements, provides the customer with maximum performance and mitigates the effect of any shade that may be present.
6. Generate a [Shade Report for the site](#). Adjust each of the fields as required in the example provided here.
7. Enter either the annual TSRF for each individual array or the lowest overall annual TSRF value for any array into the PowerClerk incentive application.
8. Submit the shade report as an attachment to the incentive application in PowerClerk.

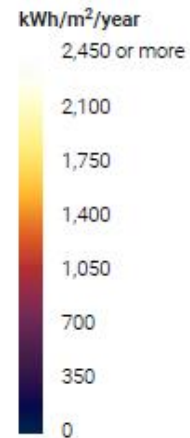
NOTE: Solar Electric Allies should strive to be as accurate as possible during the solar resource assessment. If, upon verification, an installed project does not meet the TSRF requirement it can void the project's eligibility for Energy Trust incentive funding. If a solar resource estimate is dependent on a customer addressing any issues with trees or other shading barriers at the site property, Program staff strongly recommends that such impacts be remedied prior to moving forward with the installation. If a tree, or other obstruction, will be removed prior to construction and is subtracted from the solar resource assessment, written documentation explaining the plan of action must be provided with the application.

Aurora Shade Report

Customer Customer Name	Designer Designer Name	Organization Trade Ally Name
Address Site Address	Coordinates Coordinates	Date Date

1) **Annual Irradiance:** Image should clearly indicate the project arrays, and be zoomed to the appropriate level so that the site design is clear but surrounding shading is also shown.

Annual irradiance



2) **Total Solar Resource Fraction (TSRF):** The annual TSRF for each individual array should be 80 percent or greater. The TSRF for each array or the single lowest annual TSRF value for the whole system should be entered into PowerClerk.

Summary

Array	Panel Count	Azimuth (deg.)	Pitch (deg.)	Annual TOF (%)	Annual Solar Access (%)	Annual TSRF (%)
1	12	166	27	99	89	88
2	8	256	26	88	97	85
Weighted average by panel count		-	-	-	92.2	86.8

3) **Tilt & Azimuth:** The tilt and azimuth for each array should match the tilt and azimuth entered into the incentive application in PowerClerk.

Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	69	76	91	94	93	93	95	95	93	82	67	61
2	93	97	98	98	98	98	98	98	98	97	94	90

Customer	Designer	Organization
Customer Name	Designer Name	Trade Ally Name
Address	Coordinates	Date
Site Address	Coordinates	Date

4) **Zoomed out satellite view** should be centered on the project site and zoomed out just far enough to make visible all trees and other shading obstructions. All potential obstructions (trees, houses, etc.) should be modeled.

5) **Site 3D Model** should be zoomed out just far enough to show the modeled obstructions without losing detail. An orientation that is looking down from roughly 45 degrees and from the South is generally recommended.

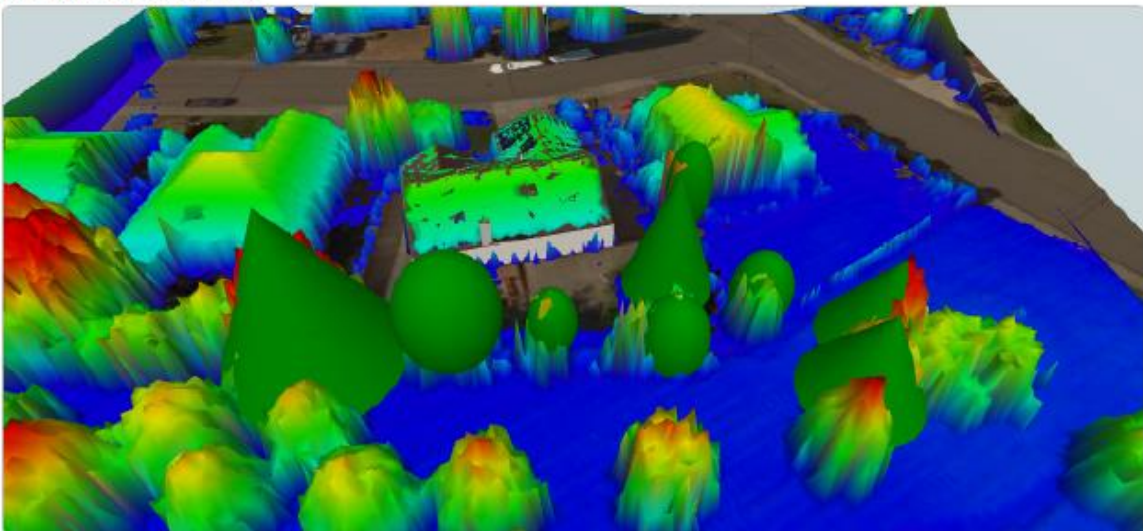
Zoomed out satellite view



3D model



3D model with LIDAR overlay



2/3

powered by **aurora**

6) **LIDAR imaging** must be available at the site and used to develop the 3D Model. The LIDAR image should be appropriately zoomed to include all potential obstructions, while remaining close enough to verify that trees and buildings are modeled at the correct heights/sizes. An orientation from the South and roughly 45 degrees is recommended, however this should be adjusted to give the best view of any specific site.

Customer	Designer	Organization
Customer Name	Designer Name	Trade Ally Name
Address	Coordinates	Date
Site Address	Coordinates	Date

7) **Street view** should be aimed at the project site to provide the best visibility of surrounding obstructions. The 3D model below should be oriented to match the street view image as closely as possible.

Street view and corresponding 3D model



I, _____, certify that I have generated this shading report to the best of my abilities, and I believe its contents to be accurate.