NREL PV WATTS CALCULATOR

CALCULATING IDEAL AND DESIGNED RATED OUTPUT FOR YOUR SOLAR SYSTEM

Current NREL Versions accepted by NJCEP

- [http://pvwatts.nrel.gov/](http://pvwatts.nrel.gov/) (standard interface-click this link to follow slides)

NREL System Advisor Model (SAM)

- [https://sam.nrel.gov/](https://sam.nrel.gov/) (advanced design interface)

Note: The NJCEP reserves the right to request a complete copy of production estimates, a full shade analysis, or any relevant documentation from the installer at any time.

INSTRUCTIONS ON USING NREL'S PV WATTS CALCULATOR

To begin, enter the address of the job site, then click on “GO >>”. 
Confirm that the default weather station is optimal for the site address. Select “Go To system info” to continue.

“IDEAL” PV WATTS CALCULATOR

For “Ideal” PV Watts, only change “DC System Size (kW)”. All other values remain default. System Losses (%) remains “14”. Click on “Loss Calc.” to view.
For “Ideal” PVWatts, **no values should be altered**. The “**Estimated DC to AC Factor**” should remain “14%.” Screen capture of the “Ideal Derate Calculator” is not required. Click “**Cancel**” to return to previous page without changes.

Verify only the “**DC System Size (kW)**” changed. Then click “**Go to PVWatts results**” to generate “Ideal” summary.
The results page displays the “Ideal Estimated Annual Production” required to be entered on the Equipment Tab in the online TI application portal.

Roof Azimuth

Capture the Azimuth measurement either on-site or by utilizing an available online measurement tool. For this example, we will use orientation 228.1°. (Example screen capture from Solmetric.com, Roof Azimuth Tool)
“DESIGNED (AS BUILT)” PV WATTS CALCULATOR

- For “Designed” PV Watts, change all system information, as permissible within NJCEP. Input “Inverter Efficiency (%))", based upon manufacturer-specification.
- Update Derate Factor to reflect equipment and shading using the “Loss Calculator”. Click on “Loss Calculator” to view.

- “Designed” PV Watts, only change “(PV Module) Nameplate Rating (%)) [i.e. power tolerance factor], and Shading (%)) [not Solar Access %].
- Save a Screen Capture of the “As Built Derate Calculator”.
- Click “Save” to apply the updated “Derate Factor”/System Losses.
Draw Your System (optional)

You may optionally “Draw Your System” using the corresponding button, but this feature does not print out with the summary report. **Not NJCEP-required.**
“DESIGNED (AS BUILT)” PV WATTS CALCULATOR

Verify the “System Info” is all correct. Confirm that the “System Losses (%)” represents the final value from the Loss Calculator. Scroll down the screen.

Scrolling down further on the page will reveal information that is not required to be selected or altered. Not required by the NJCEP. Finally, click “Go to pvwatts results” to generate “Designed” PV Watts summary.
Example of the “Designed” PV Watts Results Page
The results page displays the "Designed" Estimated Annual Production" required to be entered on the Equipment Tab in the application portal.

For a "Monthly" or "Hourly" report, click on the coordinating button to save/print.
The “Monthly” or “Hourly” report can be saved/printed from the generated spreadsheet, which may be used in advanced design planning. **Not NJCEP-Required.**

**PV WATTS FEEDBACK**

For feedback regarding the PVWatts Calculator, email comments to [PVWatts@nrel.gov](mailto:PVWatts@nrel.gov).