

Interpretations of NSOL System Summary Report

Site Summary: This is generally the location where the solar system is being installed. In some instances it applies state wide as the location selected represents the worst location in the state for sunlight.

Load Summary: Load summary is the system calculated load based on load (either in terms of watts or amps) and the duration. Load summary is the total load that is supplied by the system in a 24 hour period.

System Summary: System summary identifies the type of solar panel along with its power ratings, the number of solar panels (# in series/# in parallel) (usually 1 and 1) and the battery bank. The battery bank may be slightly confusing as it identifies the number of cells in series (6 for a 12 volt battery). The number in parallel is the number of 6 series cell batteries in parallel. Thus 2 for # in parallel mean 2 12V batteries in parallel. If # in series was 12 and number in parallel was 2, you would have a 24 volts system with 2 batteries in series. Thus you would have a total of 4 batteries in the cabinet.

Insolation: The amount of solar radiation that the panel sees during a typical day. The report shows the radiation in kWh/m²/d. It uses this value in its algorithm to calculate the array output for a typical day. Obviously for an overcast day, the output will be less.

Array (Ah/day): This column provides the typical power generation that can be expected on a clear day. The larger this value, the more sun/fewer clouds expected to be experienced. Typically coast lines produce have more cloudy days.

Sys Losses: Generally we use 10% for internal system losses.

Load (Ah/day): This column shows the load that the system calculates for a typical day during the month. Obviously for flashing beacon loads that operate 24/7 the load will be different each month as the length of daylight/darkness varies from month to month.

Batt Size (days): This column is the calculated days of battery autonomy. Battery autonomy is defined as the time that the system can operate just from the battery without any recharging of the battery. The lower the array to load ratio (ALR), the higher the battery autonomy should be. The higher the ALR, the lower the battery autonomy can be.

Avg BSOC: This column is the average battery state of charge. The higher the percentage, the less the battery gets cycled, the longer the battery life. Typically 90% or higher is a good number.

LOLP: This column is the loss of load probability. Loss of load means the system goes dark for flashing beacons or the equipment loses power for other devices. This number should always be 0.0%. Power management means that power to the loads is being reduced throughout the operation of the equipment. This is typically achieved by dimming flashing beacons.