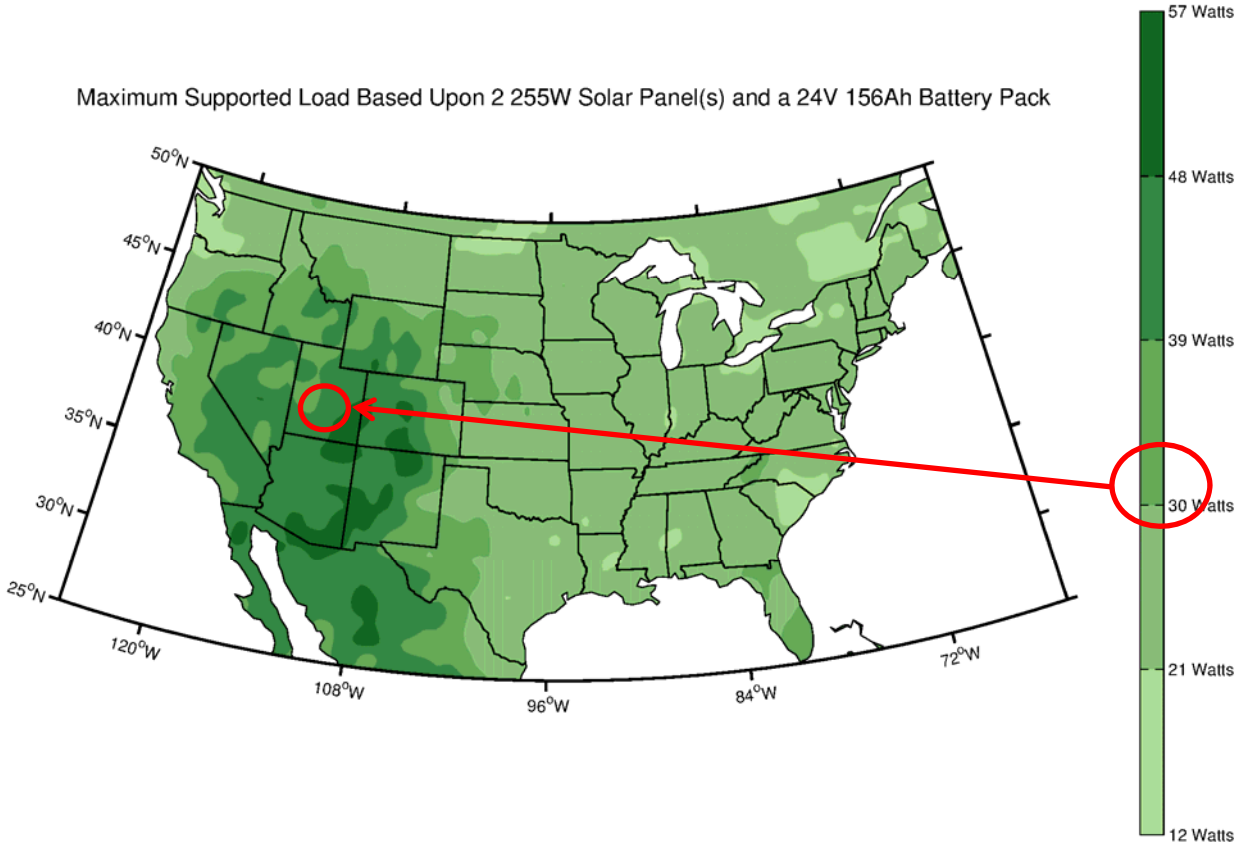
How to use the SmartHarvest by OutBack Solar Power Station Selection Guide

First, assess your DC power needs in the field. SPS unit's typical power continuous loads between 11-47 Watts in the field depending on site location, solar conditions and other factors. So there is a considerable range at play when selecting the right model. Basically, you will select the model for both the location (part of the country where it will operate) and the load (the DC need you have in the field).

Second, refer to the *Solar Power Station Selection Guide*. This shows how much continuous load each system can support for a specific area in North America. The maps included in the Guide use NASA data which assumes localized weather conditions including cloudy or overcast skies. You are matching up your load to the amount of solar radiation typically present in that area.

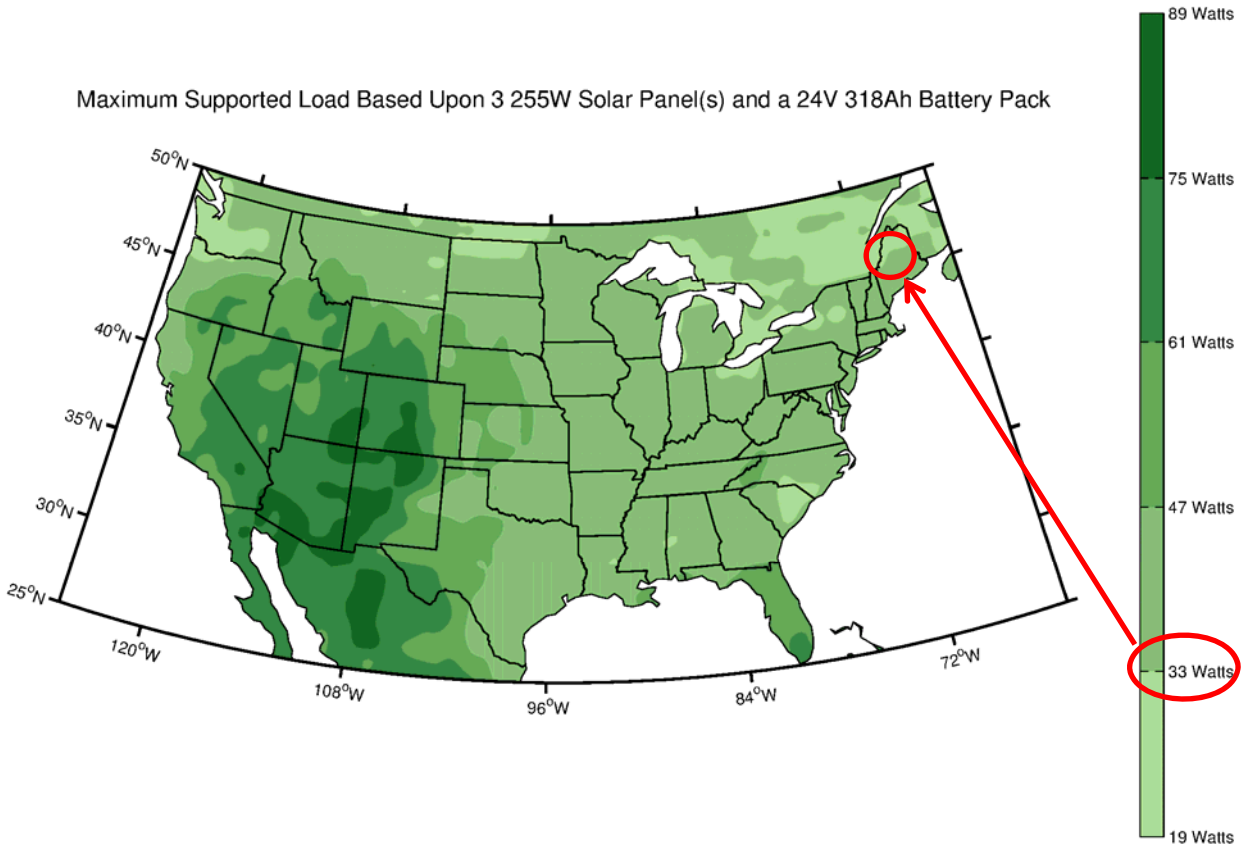
Example: you have a 24V DC load of 32 Watts and are located in Southern Utah. According to the Selection Guide, the SPS.SYS.2.156.24 is sufficient for your application as the system will support a 39 Watt load at that location. See example 1 below.



Example 1: an SPS .SYS.2.156.24 system can support a 32 Watt load in a Southern Utahor comparable location

Note: to ensure enough operating reserve, always use the lowest value shown for the color contour for your particular location

However, if you are in Northern Maine, that same system can only support around 21 Watts continuous DC. But by stepping up the system size you increase its solar harvesting and storage capacity, which provides another solution as shown in Example 2.



Example 2: In Northern Maine, that same 24VDC 32 Watt load can be supported by stepping up to the larger SPS.SYS.3.318.24

It's important to note that these examples apply to a continuous load under normal conditions. Under "blackout" conditions, the 3-day autonomy load support is much lower. In areas where the weather-induces variations in solar radiation such as consistent local fog (the Bay Area in California for example) or local weather variations or snowfall, keep this in mind when determing how much system you need for your application and location. Also, make allowances for shading from trees, mountains and buildings that may cut down the solar radiation in a particluar location.

The Selection Guide provides both Wattage figure for Continous Load support and 3-Day Blackout Autonomy support.

Summary: in order to specify the correct SPS unit for a DC powering application, the two pieces of information needed are

1. Size of load to be supported, in Watts
2. Geographic location of the system

The average amount of available solar radiation available at your location will determine how large or small a system you need to power your particular application.