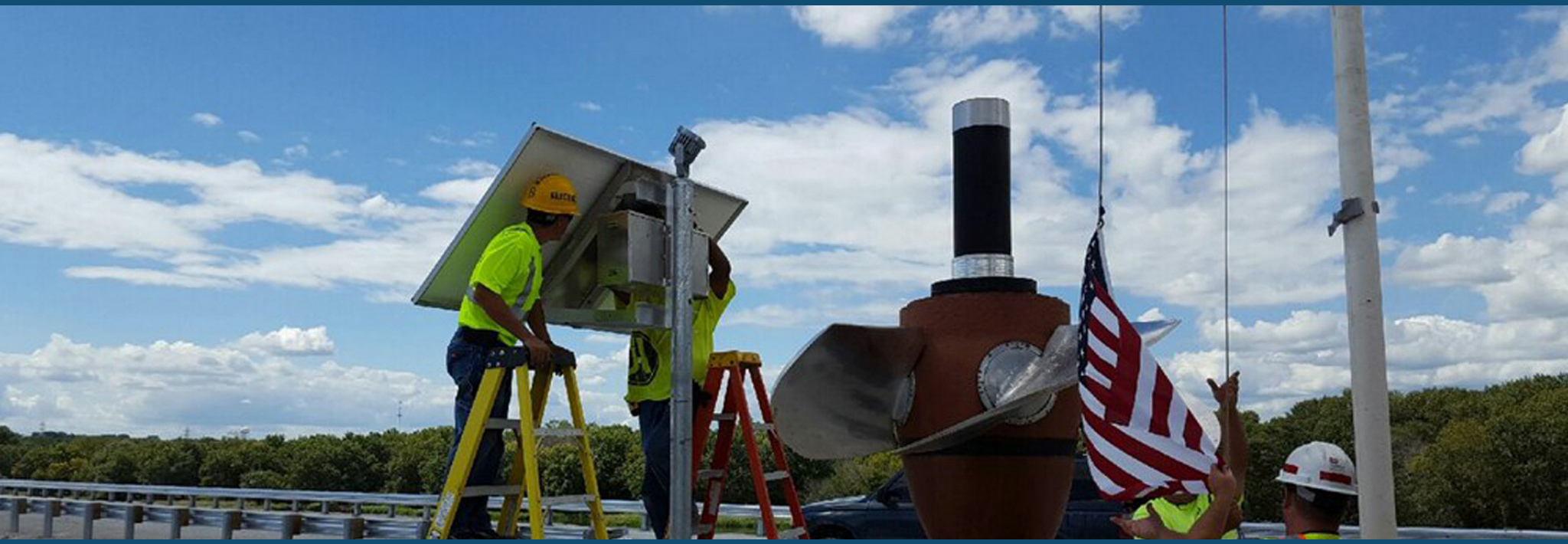
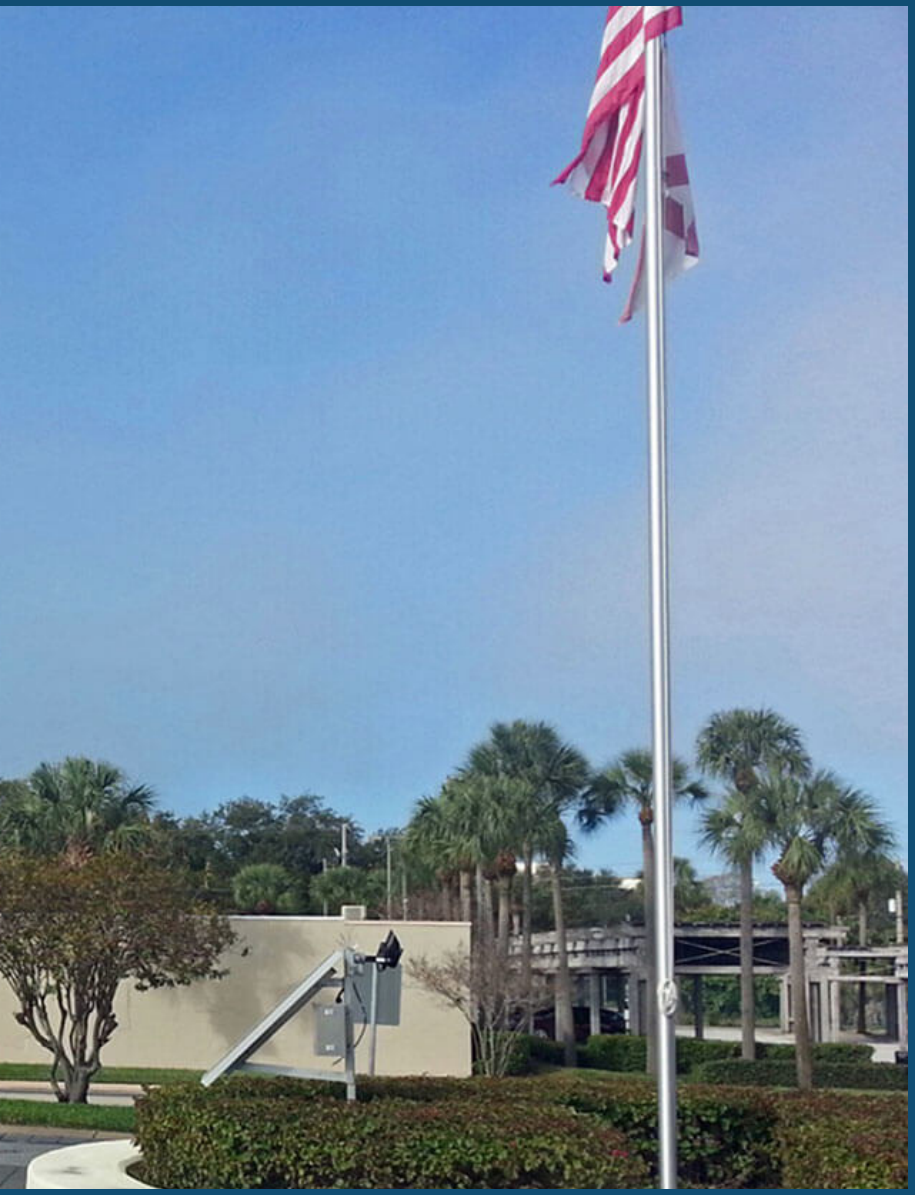
SOLAR ELECTRIC POWER COMPANY



FLAG LIGHTING DESIGN GUIDE

Navigating how to design a reliable solar lighting solution



Flags show patriotism for your country. Displaying a flag at your place of business or home shows others your spirit, but what happens at night?

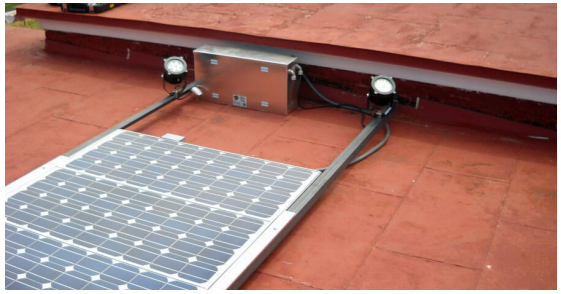
Do you take your flag down?

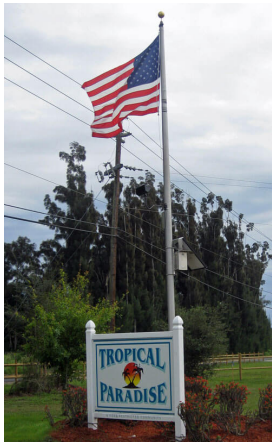
Or do you proudly fly it all night?

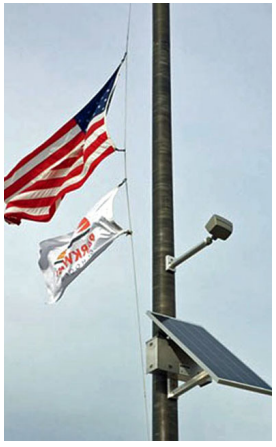
Proper lighting will ensure your flag is well presented at night. This guide will help you design the perfect lighting system for any type of flag lighting application, keeping you in compliance with the American Federal Flag Code.

There is no law that states a flag must be lit at night; however, proper etiquette states that if the flag is to be displayed all night, it requires to be properly illuminated the whole night through from dusk to dawn. Other flags can be illuminated all night, but it is up to the discretion of the owner.

Commercial lighting systems properly sized will ensure you have enough illumination on the flag itself and commercially designed solar systems ensure they last all night long.

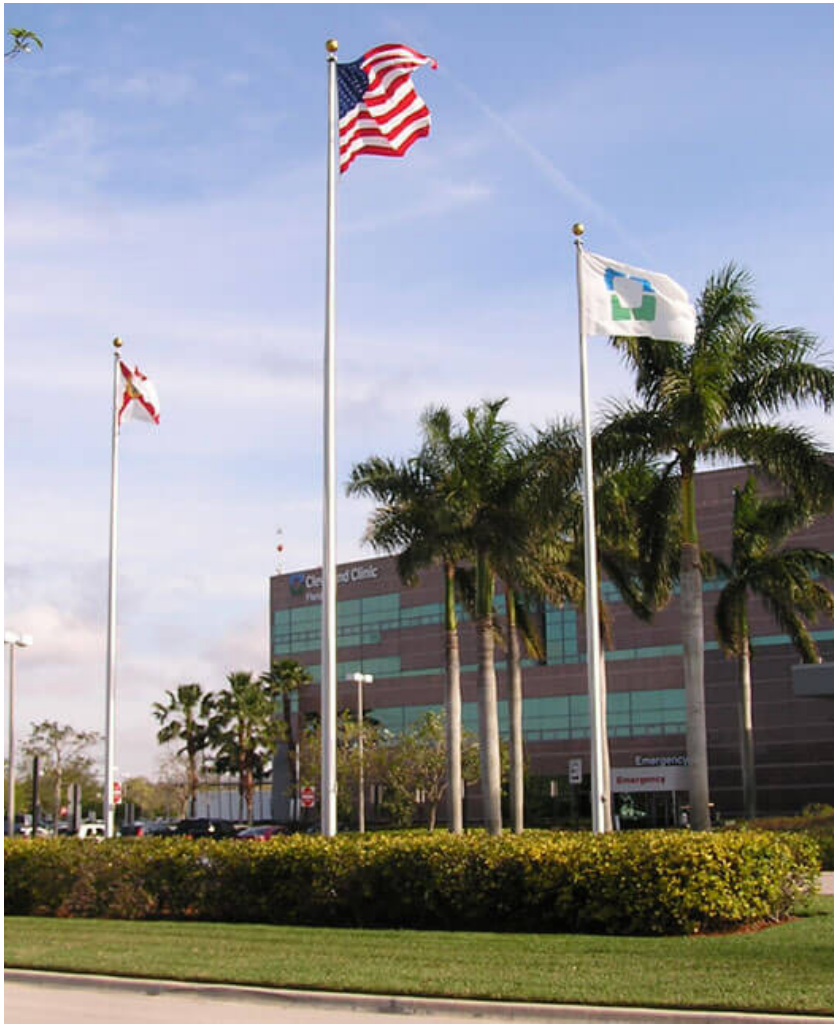






Hospitals, government buildings, schools, HOAs, homes and many other places fly the American flag. Most of these locations will take down the flag at night or after the closing of business for the day.

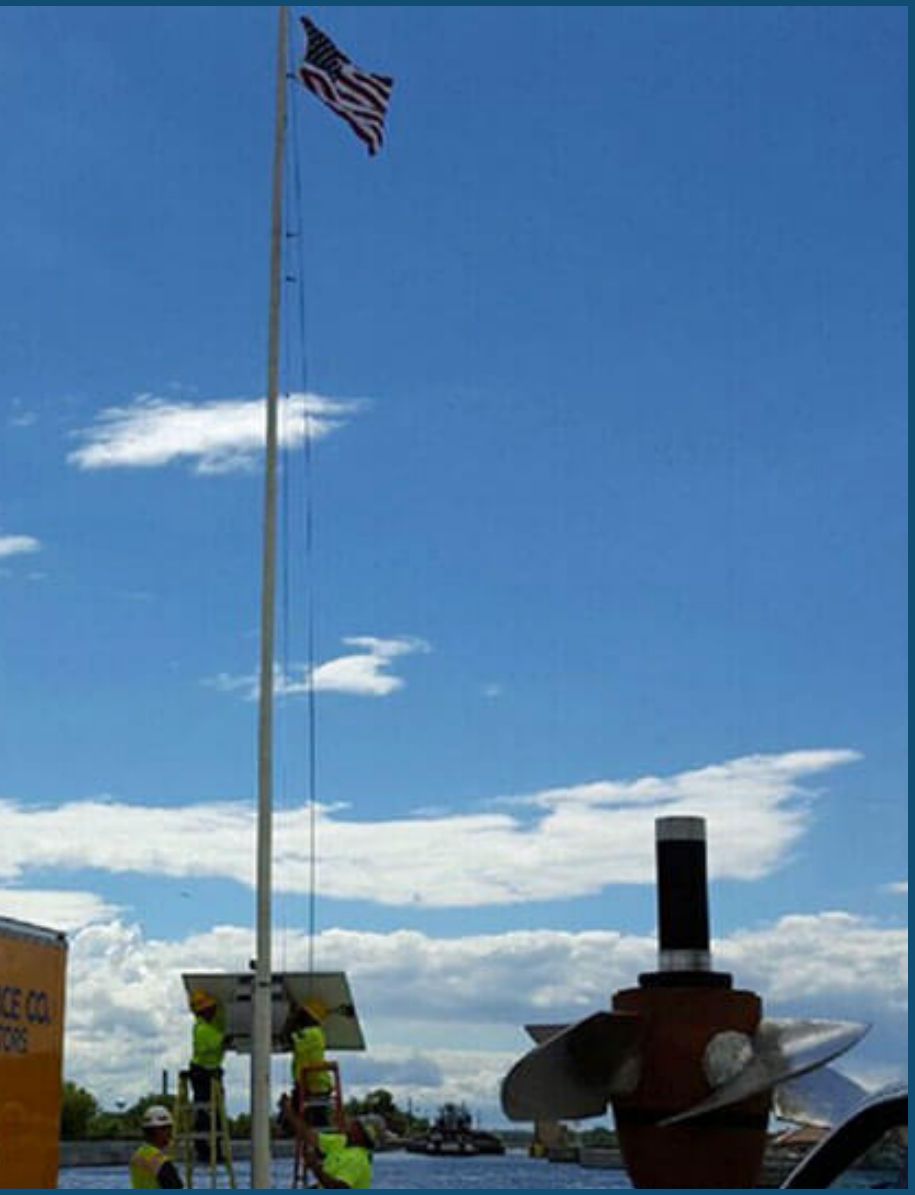
If the flag is going to be displayed at night, then adequate lighting would be needed. Most often buildings open all night would be more prone to light the flag at night than other places that close in the afternoon, but the lighting can be used at any location needed.



The implementation of LEDs allows for uniform lighting levels between various fixture sets. An old-style flood fixture which used to only produce a round area of light directly out from the fixture can now provide different distribution patterns and allow for lighting of different size signs with uniformity. SEPCO works with Hubbell Outdoor Lighting to provide different distribution patterns for every project maximizing the light output of each fixture.

LED lights also provide much better lighting with much less light loss from wasted light. Older style fixtures such as metal halide and high-pressure sodium had a lot of wasted light. The lumens of the lamp gets thrown in all directions and the fixtures were designed to push the light out everywhere with no real task lighting.

LEDs provide task specific lighting and are pushing the light in only in the area that requires lighting. This additional efficiency allows for the use of much less power, fewer lumens, and better overall lighting and uniformity.



KNOW WHAT GOES INTO DESIGNING A FLAG LIGHT SYSTEM

Every flag varies from one to the next from actual size to installation location. Understanding how each flag project is designed will help you navigate the process efficiently.

Step 1 – Find the flag in need of light

The first thing to figure out is the flag that needs to be illuminated and how large the flag and flagpole is. Is there a single flagpole, or multiple in a single location? Finally, how are you going to mount fixtures? On the ground beneath the flag or up on the flagpole itself? There are many mounting options.

Step 2 – Find out if electric is available

Is the electrical grid already nearby or would you need to call the power company to bring in electrical lines? If the electric needs to be brought to the area, how much is this going to cost? Depending on how far the grid electric is from the location of the needed lighting, this can be quite expensive. If the underground grid power has gone bad, look at the costs of trenching and repairing the area.

Step 3 – Determine the lighting requirements

How much lighting is needed for the illuminating the flag? Is the flag located in a high ambient light area? Or is the flag installed in a remote location with no competing light fixtures? Narrow beam fixtures allow the light to reach up the 20-40 feet of most standard flagpoles. These questions need to be answered before you can decide on how many fixtures and what wattages are required for completing the project.

Step 4 – Find all alternatives

Solar power flag lights are an option to traditional electrical lights. Solar flag lights do not need the electrical grid to be brought in as they are self-contained units that provide their own electric. LED light fixtures provide the best lighting solution by using lower amounts of power, better optics, and cost less in an overall solution. The solar unit can be sized to operate a single fixture to multiple fixture setups.

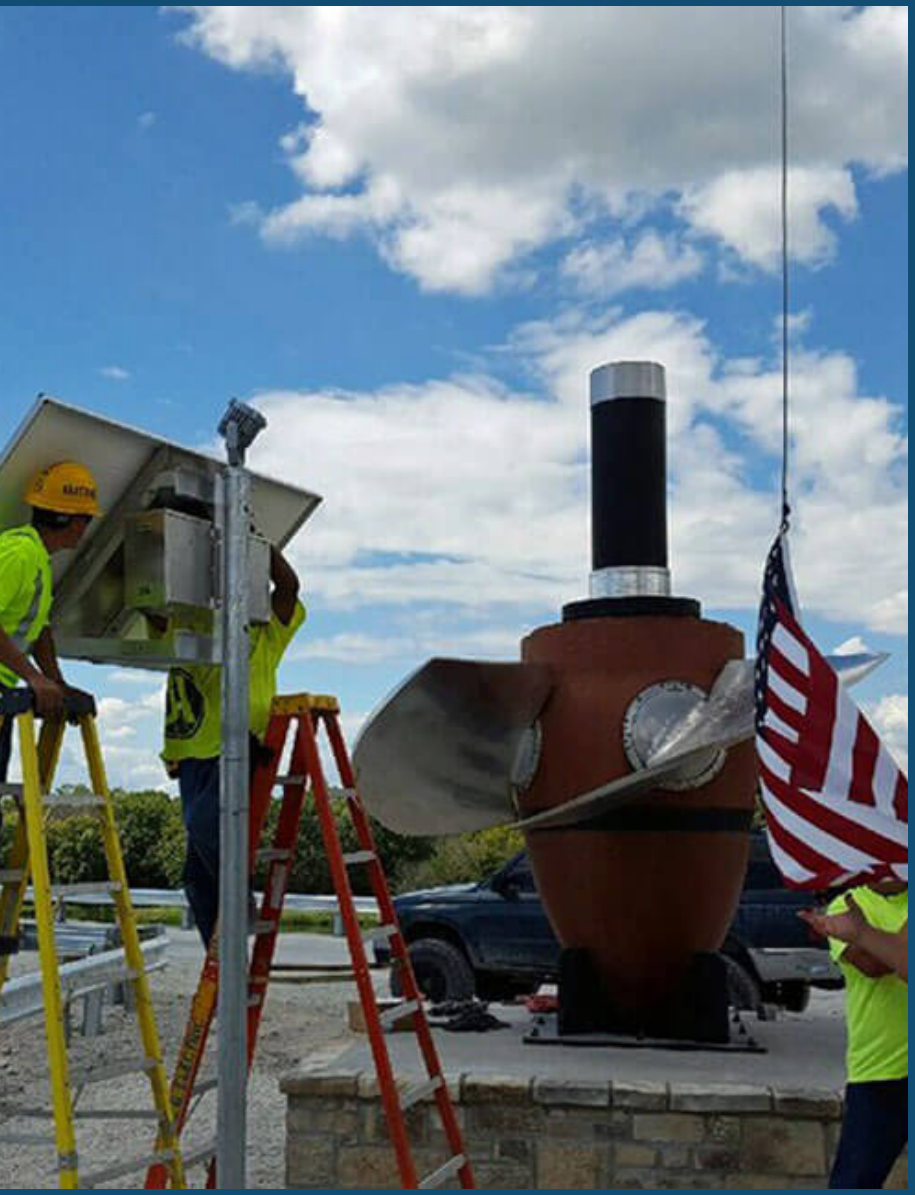
Step 5 – Contact companies for quotes

The last step after gathering the above information is to contact companies for quotes. Just like anything else, get multiple quotes and weigh the pros and cons of every company and situation. The lowest quote is not always the best, so make sure to do your research on companies and products before you submit a purchase order.

Make sure your quotes come with an explanation of:

Battery Backup: *How much battery backup you are offering based on days? Some solar light manufactures offer 2-day backup which is actually a bad solar system assembly design. SEPCO provides a battery backup which has a minimum of 5 days storage. This lengthens the backup times while prolonging the life of the battery.*

Photometric Study: *A photometric layout allows you to see the foot-candle and light distribution for every project. Without the photometric study, there is no representation of the light the systems will produce.*



USING SOLAR LED LIGHTING SYSTEMS FOR YOUR PROJECT

Since solar powered flag lights are self-contained, the installation will be a snap. Setting the poles, installing the solar power assembly and light fixture with bracket will take less time and will not require additional trenching. This saves on costs and allows for the lighting to be implemented more quickly.

Solar lights that are in production for commercial applications such as signs, billboards, etc have a higher upfront cost, but they will pay for themselves immediately when looking at the total costs of installation for new construction or in areas where grid power is not feasible to bring in. These systems provide lighting for specific applications with different runtime settings. They also provide many days of stored power to provide continuous reliability, even during times of inclement weather.

Each system is built for the type and wattage lamp that will be utilized for the specific application. Lighting a large 40' flagpole or multiple flags will take much more power than lighting a small 20' single flag application. That makes the commercially manufactured solar lights more versatile to adapt from one job to the next. They range from small one LED fixture to multiple fixture setups to cover larger areas.

Solar lighting also has many excellent qualities. It is a green alternative to traditional lighting, it is low cost and practically maintenance free, and there is no power bill associated with utilizing solar since the power is not coming from the grid. Solar is also low voltage which makes it much safer to install and operate. Finally, solar lighting is renewable and promotes sustainability; its only requirement is the sun for operation.

THANK YOU FOR YOUR TIME!

Kindly get in touch to let us know if you have any questions.

One of our solar specialists would be happy to help you choose the best option for your Solar Lighting project and provide clean, renewable solar energy!

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