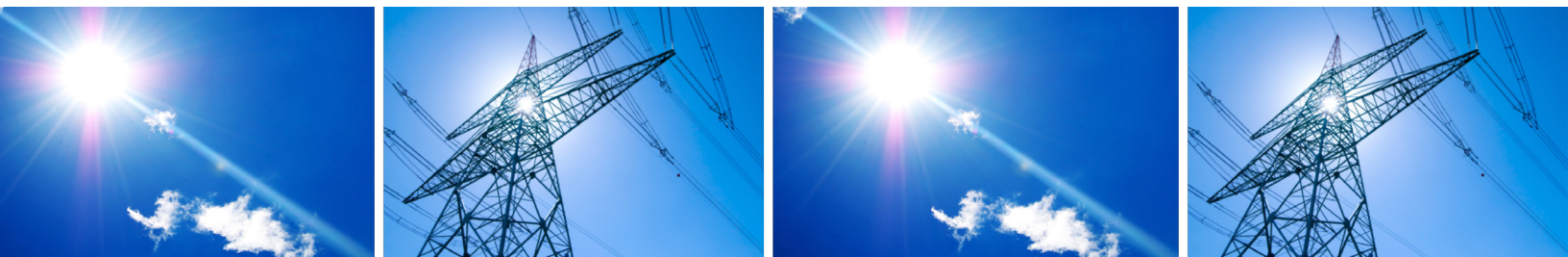


## Smart Grid Connect Option

When installing new lighting and other Internet of Things devices along highways, roadways, parking lots, and pathways, Smart Off-Grid technology has made fully off-grid solar and wind / solar powered systems more cost effective than traditional grid powered systems. For large load applications which cannot be powered by solar energy alone, the Clear Blue Smart Grid Connect is the perfect solution. Smart Grid Connect controls the amount of power that is pulled from the electric grid to ensure that grid power is only drawn when needed, and that maximum solar energy is first obtained.

Here are some scenarios where an off-grid system can benefit from backup grid power (Grid Connect):

- In areas where the lights are grid-connected but grid power is unreliable.
- Where seasonal or permanent shading limits the amount of available solar energy. This may result from permanent structures like buildings or seasonal from tree growth.
- When 100% uptime is mandatory, and grid provides the backup. With both solar and grid available to charge batteries, the system remains on when the grid is not and the grid ensures there is enough power even when there is not enough sun. Where an application needs more power during times of the year when off-grid power is insufficient
- In jurisdictions where solar is the preferred source for green energy reasons (including carbon credits) but not sufficient in certain scenarios
- In the most extreme climates, such as very far northern extremes where there is no sun in the winter but a lot in the summer.



# Smart Grid Connect Option

## Key Features

- Real-time user configurable from the Illumience Cloud. Users can configure when and how the grid is used to supplement off-grid power in the system.
- Smart Grid Connect profiles allow for time of day charging to specify when grid power should be used, such as during low cost electricity windows.
- Smart Grid Connect profiles allow users to set grid connection based upon the state of battery charge.
- Smart Grid Connect includes certified Grid Chargers that don't require any additional special certifications by local power utilities, something that grid-tie controllers often require and is very time consuming and expensive.
- Remote control of Grid Chargers with full re-set and soft start capability provides full remote management capability, including any required resets of items such as short circuit trips.
- Ad hoc enable – At any time, on a real time basis, users can enable or disable Smart Grid Connect remotely via Clear Blue's Illumience Cloud management platform.

