EV ARC™ Off-Grid EV Charging System

Understanding Winter Operations

Winter conditions can reduce the performance of solar power and energy storage systems. Beam's products are designed with this in mind. Below is some useful information on winter operations for your EV ARC™.

Winter conditions include:

- **Shorter Days** - Shorter days mean less daylight and less opportunity for the solar panels to generate energy.
- **Cloudy Skies** - More cloud cover will reduce solar generation.
- **Reduced Solar Elevation** - Solar panels produce less when the sun is lower in the sky.
- **Cold Temperatures** - Batteries can be damaged when charging or discharging below freezing so EV ARC™ will protect them during severe cold conditions.
- **Snow** - Snow accumulation can reduce solar performance.

BeamTrak™ sun tracking may help keep some snow off the solar array.

What the EV ARC™ does to maintain operation and survive tough winter conditions:

- **Smart Battery Management** - On-board heaters and insulation maintain batteries at operational conditions even when outside temperatures drop below freezing. Internal battery charging and discharging is also optimized for seasonal solar production to maintain battery health and system performance.
- **Conditioning Mode** - Autonomous control that temporarily disables EV charging, locks the tracking system to a southern orientation, and conditions internal batteries to operational limits using heating and charging when energy is available. The EV charger may remain off during the day even if it is sunny and lights will not illuminate at night while in this mode because the EV ARC™ is using the energy to protect its batteries and other vital components.
- **Daytime Communications** - The EV ARC™ communicates during the day when solar energy is available to confirm its operation and conditioning mode. Heavy snow coverage may prevent this feature.

What you may experience:

- **Reduced Availability** - Maintaining system health consumes energy and while there is less solar generation there may be less energy available for EV charging.
- **Canopy Pointed South** - Conditioning Mode ensures the array is tracked for optimal solar generation even while active tracking is disabled.
- **Canopy Lights off at Night** - Lights consume energy that is not available while the EV ARC™ is in Conditioning Mode.
- **Automated Recovery** - Conditioning Mode is autonomous. The EV ARC™ will return to normal operation as soon as the weather is more favorable, or external energy is made available.

What you can do:

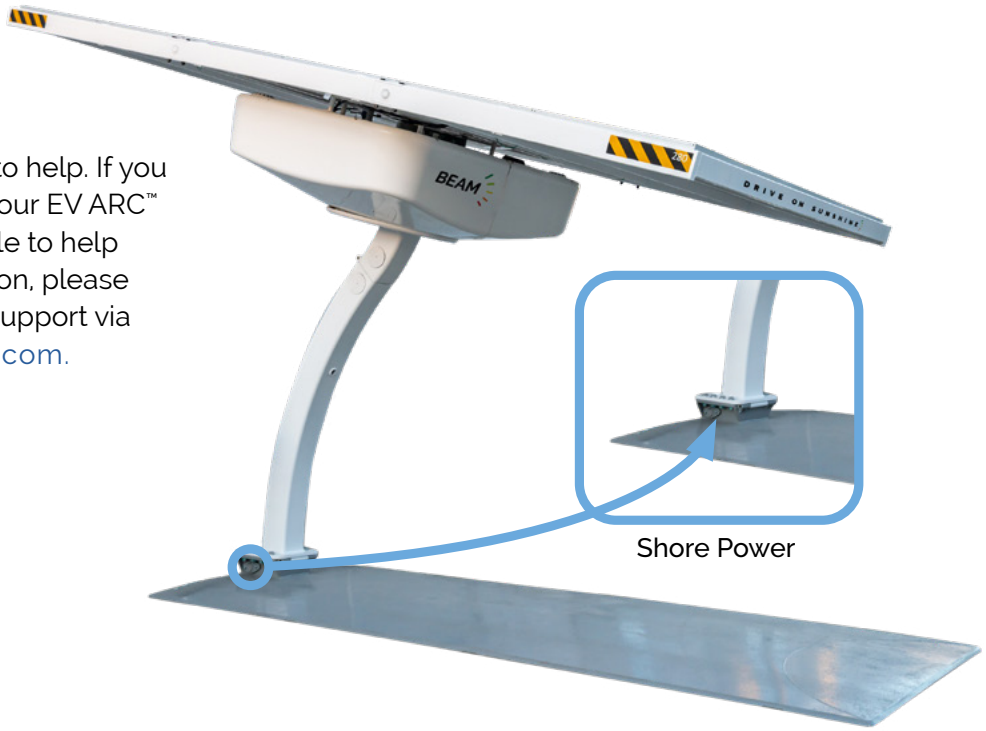
- **Check the Weather** - Adjust your charging behavior to accommodate the impact of winter on solar performance. Charge frequently, taking smaller amounts during each charge. This ensures that no solar energy available for charging is wasted.
- **Clear Snow from Canopy** - Snow can be cleared using a long handled brush from the ground. Avoid metal tools that can scratch panels.
- **Connect Shore Power** - Connect a typical 120v extension cord to the base of the column to trickle charge batteries, run heaters, and maintain communications. Or, if your system is equipped with the higher power "grid connect" option make sure that it is connected. These steps will ensure that your EV ARC™ can operate through most winter conditions with limited disruption.

To prepare for winter conditions:

- If you anticipate a period of cloudy weather or severe cold, try to make sure that your EV's are fully charged in advance of the inclement weather.
- Always keep your EVs topped off and charge frequently rather than running them empty and then filling them up.
- Connect an extension chord to your EV ARC™ to trickle charge its batteries.
- Keep the solar array clean and free of snow.
- Make sure that the solar array is not shaded when the sun is lower in the sky (trim trees etc.)
- Inform users that the EV ARC™ is not broken – it's just waiting for some sun to charge its batteries.
- Limit EV charging to essential uses only.

Ask questions!

The Beam Team is always here to help. If you want to know more about how your EV ARC™ functions, we are always available to help educate you. For more information, please contact us at customer service support via email at Support@BeamForAll.com.



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