

Appendix: Scope of Work by Park

Apostle Islands National Lakeshore



Apostle Islands National Lakeshore (APIS) includes lakeshore on the mainland and 22 islands. The mainland facilities are grid-tied, and the islands are off-grid. Mainland facilities are open year-round, while island facilities are open May through October. Existing facilities range from a century-old courthouse to a new Leadership in Energy and Environmental Design (LEED)-certified visitor center.

To decarbonize the park, NPS will need to:

- + Retrofit 19 buildings to cc-ASHP, heat pump water heaters, and LEDs
- + One or two solar arrays for grid-tied locations (no battery storage)
 - There are two different power companies (Xcel Energy and Bayfield Electric Cooperative), so the park may need separate arrays for each area
 - 273 kW estimated solar capacity
 - 220 kW for Xcel Energy facilities and 53 kW for Bayfield Electric Cooperative facilities
 - Solar arrays sized to provide 100% of the total annual electricity load
 - Programs to purchase renewable energy through the utility companies are also available
- + Nine solar arrays plus storage distributed across nine off-grid locations
 - Estimated system size: 90 kW solar, 62 kW battery
 - These estimates are based on an assumed existing system size of 65 kW solar and 18 kW battery, which was estimated based on the assumption that the current system always covers the load without generator backup. The actual existing solar and battery system sizes are unknown.
 - Propane generators will be maintained for backup but will only provide power in emergencies.
- + Replace all ICE vehicles with EVs: 6 large vehicles and 6 medium vehicles
- + EV charging stations for 12 vehicles