

## Glacier-area improvements

Puget Sound Energy has worked hard over the last few years to improve the reliability of electric service for customers in the area. These upgrades allow us to meet the current and future power needs in your community, as well as your expectations for safe, reliable and affordable electric service.

Learn more about PSE's work in the area by visiting [pse.com/glacierbattery](http://pse.com/glacierbattery).

### SCADA technology installation (2014)

With supervisory control and data acquisition (SCADA) technology in place, PSE receives information about Glacier's electric system remotely, like learning about an outage in real-time. This helps us quickly activate the battery units to restore power to your community after an outage.

### Pole and switch replacement (2015)

The new switch will allow PSE to more reliably respond to storms and other issues in the area's power system.

### Highway pole relocation (2016)

PSE worked with Washington State Department of Transportation to move power poles farther away from SR 542, improving safety and reducing the likelihood of pole-vehicle collisions. This work took place west of Maple Falls, along the existing transmission line to Glacier.

### Tree trimming (2016)

PSE trimmed and removed trees near poles to reduce the frequency of tree-related power outages.

### Glacier substation and battery (2015-16)

Improvements in energy storage technology, such as large-scale battery systems, are making it more practical for utilities to invest in distributed generation systems which capture, store and release energy into the power grid. PSE, in partnership with the Washington State Department of Commerce, developed a 2 megawatt (MW) / 4.4 megawatt-hour (MWh) lithium-ion battery storage pilot project in Glacier to test the benefits of distributed generation.

#### The Glacier battery storage pilot project will test three primary functions, including:

##### Local

- Serving as a short-term backup power source to a portion of the local Glacier circuit during outages.

##### Grid-wide

- Reducing system load during periods of high demand.
- Balancing energy supply and demand, helping to support greater integration of intermittent renewable generation on PSE's grid.

### Battery system backup island

One of the battery system's functions is to serve as a **short-term backup power source** to a portion of the local Glacier circuit during outages. The battery units can back up just over 50 homes and businesses in the downtown Glacier area for approximately 9 hours when charged to 100 percent capacity. Total duration is weather and temperature dependent. The first successful demonstration of this was on Aug. 28, 2017.

