



DOE Program Review Presentation

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Land Use Planner
Quinault Indian Nation

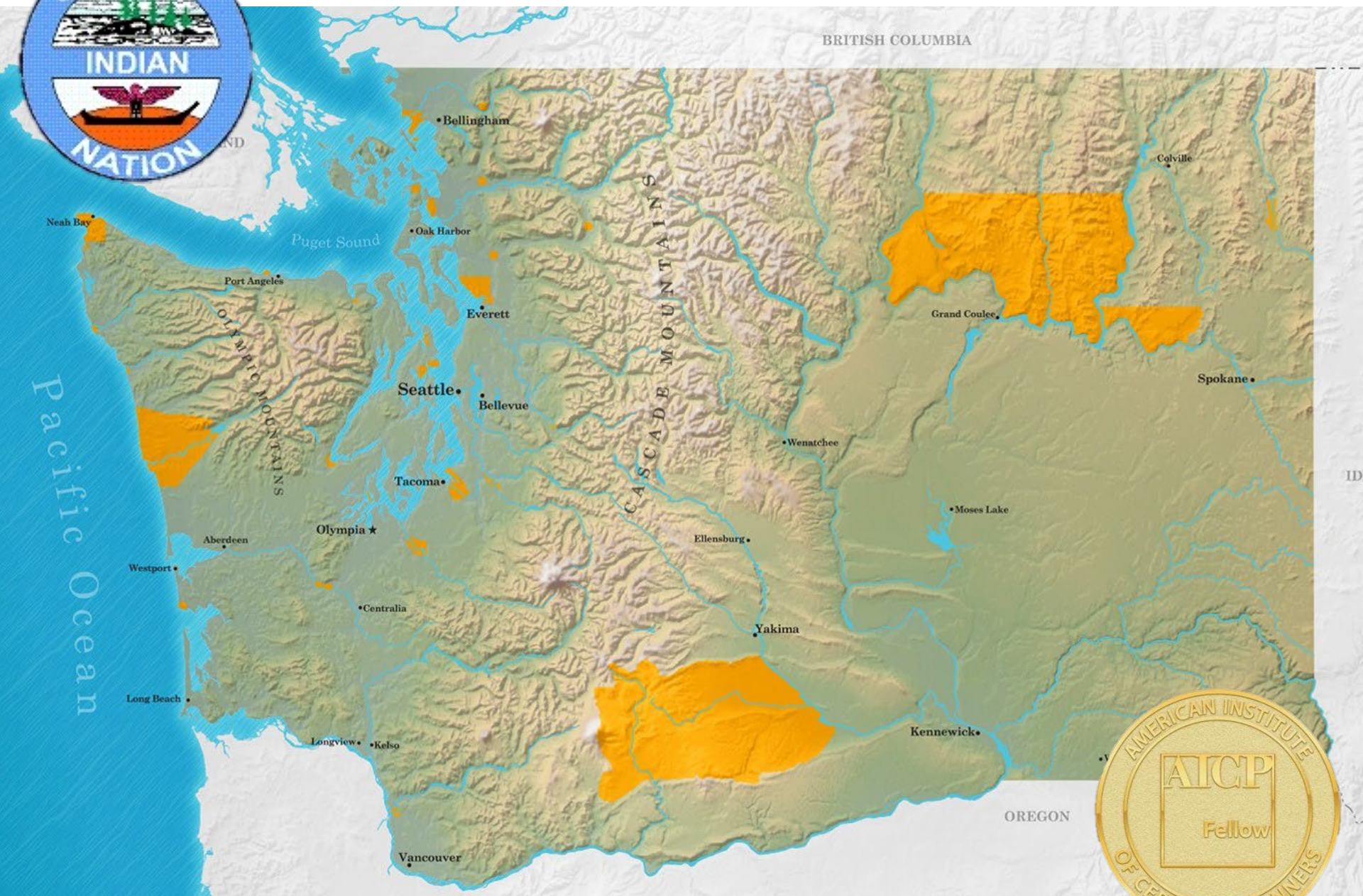




Quinault Indian Nation

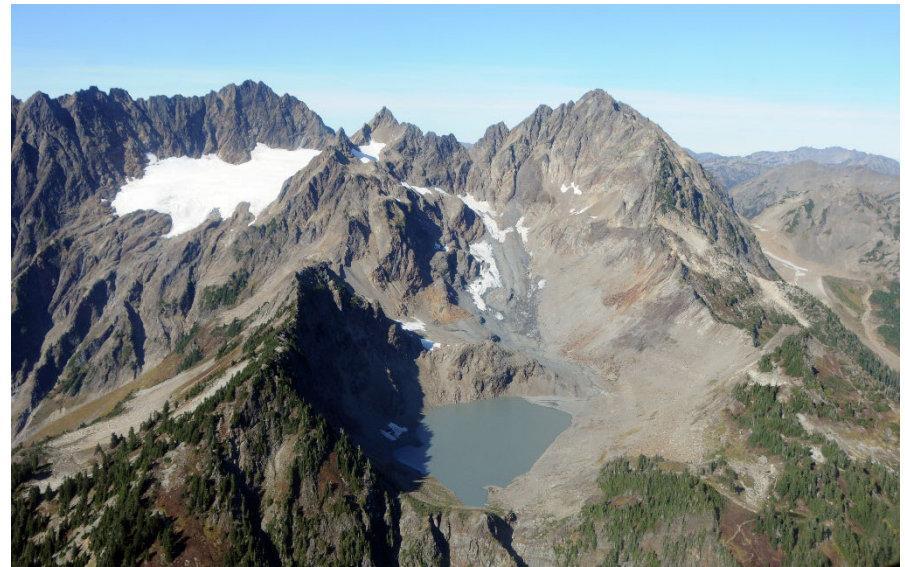
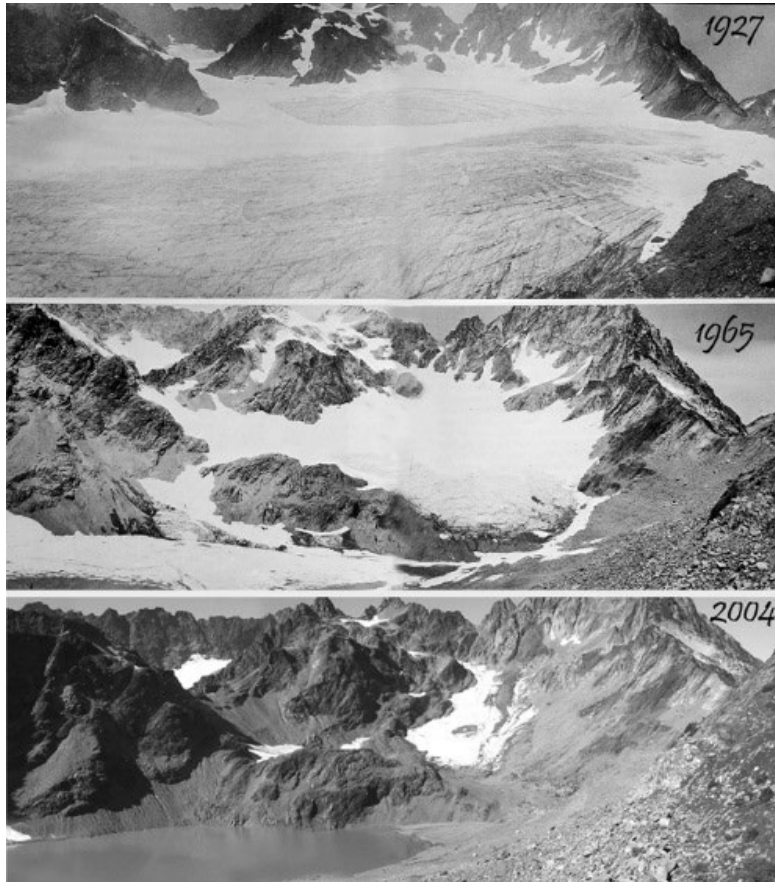
- Signatories of the Quinault River Treaty, 1855
- The Quinault Indian Nation (QIN) consists of the Quinault and Queets tribes and descendants of five other coastal tribes: Quileute, Hoh, Chehalis, Chinook, and Cowlitz by Executive Order
- Approximately 3,000 members. Village of Taholah has a population of approximately 800







Climate Change and Quinault



Anderson Glacier, Headwaters of the
Quinault River
Olympic National Park





Climate Change and Quinault

Resources at risk

- Salmon – warm waters, low river flow
- Clams – ocean acidification
- Trees – fire, pests
- **The Quinault People**





Hazards

Dual threats to Taholah lead to Relocation Plan

- Climate Change: Sea Level Rise and Storm Surge
- Tsunami from 9.0 earthquake
 - Cascadia Subduction Zone similar to tectonics that caused Indonesian tsunami in 2004
 - 5 to 20 minutes escape time (if good conditions)



Late 1800's
Sketch of Coastal
Flooding in Taholah





Village Relocation





99kW system w/ battery backup

- BIA, Indian Energy Grant for design & microgrid study
- DOE grant to fund construction
- Back up of some life safety systems for Generations Building (refrigeration, lights, exit signs)
- Supply power to the grid

Integrated Battery Rack

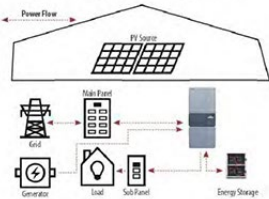
Comprehensive Battery Enclosure Solution with Cell Interconnect



Features:

- Ideal for use with OutBack Radian, FLEXpower and FLEXcoupled systems
- Fast installation
- Supports multiple 48V strings of OutBack EnergyCell and lithium ion batteries
- Overcurrent protection on each battery string provides added safety and flexibility
- Well-ventilated for increased battery safety and longevity
- Protective terminal covers
- Space-saving design with smaller footprint

Typical System Integration

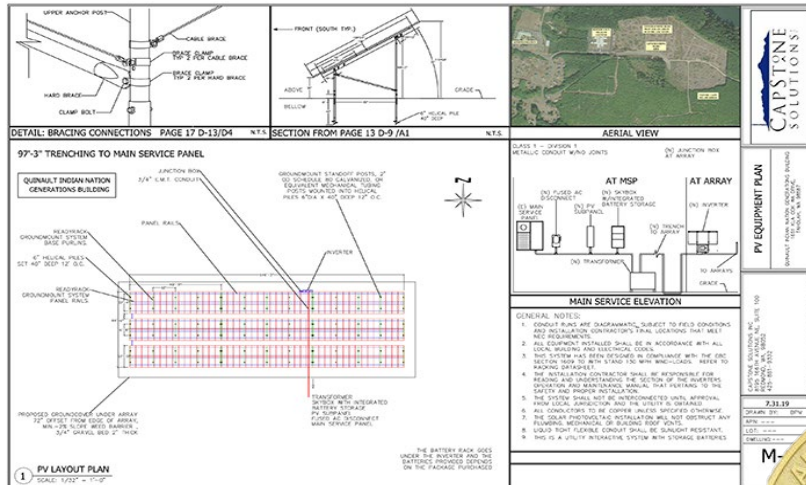


Our line of pre-assembled battery racks are designed to meet the needs of system integrators and installers and provide the best of both worlds.

The innovative OutBack Integrated Battery Rack system is a comprehensive battery enclosure which includes all cell interconnects, cabling and series string over current protection and disconnects. All electrical connections are made at the factory and ship fully assembled with the exception of the batteries, which can be quickly added and connected on the job site, making the Integrated Battery Rack uniquely easy to specify, order and install.

Unlike typical steel racks or sheet-metal enclosures, the OutBack design is crafted of powder coated aluminum, resulting in a cleaner appearance able to withstand the most challenging environments - while weighing less than 90 pounds. The 2-shelf BR-2 is sized to fit under an OutBack Radian inverter, (charger) to reduce system component "clutter" and make the best use of installation space. Clear covers on the racks permit visual inspection of internal components while providing additional protection for the batteries and electrical connections.

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Objectives

- In case of disaster that life safety systems can remain on in the building designed as an emergency shelter
- Reduce net electrical use by the Nation
- Increase Nation's knowledge of solar power in anticipation of future microgrid
- Workforce development

Project Status

- Restarting the project. RFP to hire a design / build contractor as the original concept was deemed unadvisable





Electrical Room

Solar Site

Generator





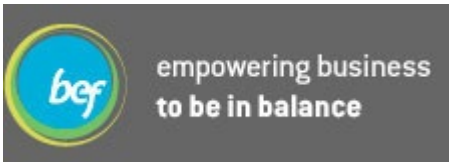
Queets Solar

- Back up life safety systems
- 12 Education hours for North American Board of Certified Energy Practitioners
- Worked Tribal Employment Rights (TERO)
- School Curriculum fundamentals
- Save \$2,000 annually





Queets Solar



An example for our DOE funded project!



Energy Park - Resilience



Biomass



Future 1 MW array for islanded microgrid



A way to safely shelter in place for months



Siokwil (Thank You)

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