RENEWABLE NORTHWEST

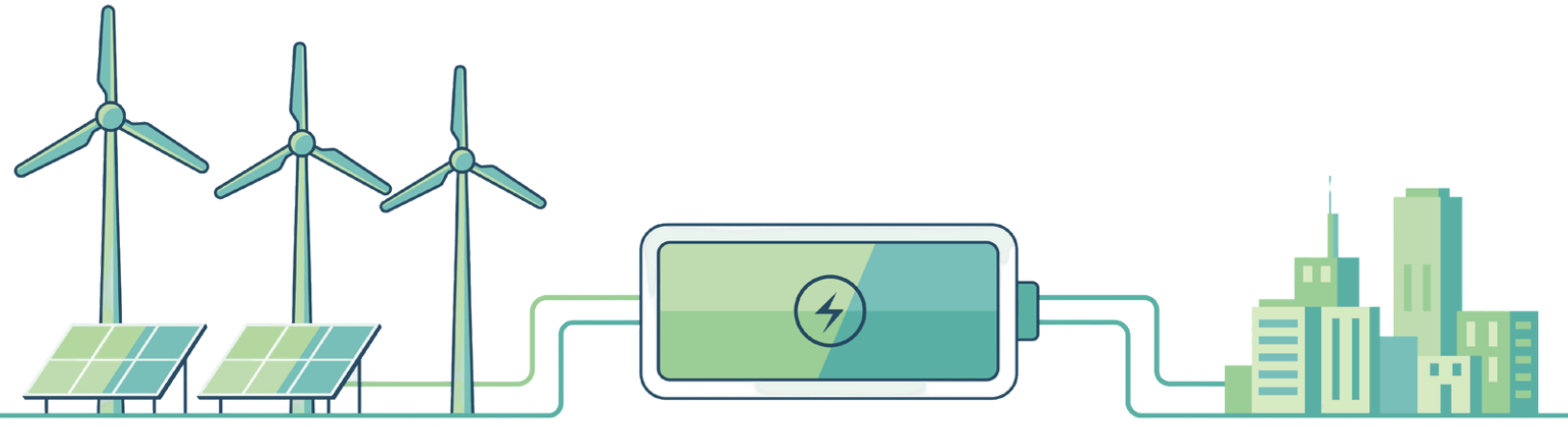
What BESS Enables

What is BESS?

Battery energy storage systems, often referred to as BESS, store electricity for later use. When electricity generation exceeds demand, electricity from all energy sources, including wind, solar, hydropower, geothermal, and natural gas, can be stored in batteries and discharged when additional power is needed.

BESS is one of several tools available to Pacific Northwest utilities and grid operators. It works alongside transmission infrastructure, generation resources, energy efficiency programs, demand response and other grid investments to help maintain reliable and affordable electric service across the region.

In practical terms, BESS helps utilities store electricity when it is available and deliver it when it is needed most. That flexibility can help manage peak demand, support grid reliability, make better use of existing energy resources, and, in some cases, avoid or defer more expensive infrastructure investments.



Managing Peak Energy Demand

Electricity demand changes throughout the day and across seasons.
BESS helps utilities manage these fluctuations by:

- Storing excess energy when electricity demand is low
- Delivering electricity during periods of high demand, such as evenings when people return home and energy use increases
- Reducing the need to rely on more expensive resources during peak periods, depending on utility planning and system conditions

What This Means Locally:

BESS can help reduce strain on the existing grid and make better use of infrastructure already in place. Depending on the project's purpose and how it is integrated into utility planning, this may help avoid or defer certain costly upgrades and reduce upward pressure on future rates.

Supporting Energy Grid Reliability

BESS helps stabilize the energy grid by:

- Responding instantly to changes in energy supply and demand
- Supporting certain backup power or critical-service needs when a project is specifically designed and connected for that purpose
- Supporting grid operations during extreme weather events, system outages, or other periods of stress
- Reducing stress on aging grid infrastructure, including existing local powerlines

What This Means Locally:

BESS can support a more flexible and reliable grid during periods of high demand, extreme weather, or system stress. It is not a guarantee against outages, but it can help utilities manage disruptions and improve grid operations when designed and connected to serve that purpose.

Maximizing Use of All Energy Resources

All energy resources — including wind, solar, hydropower, and traditional generation resources — can benefit from energy storage. BESS helps utilities better manage electricity supply by:



Storing excess generation for later use



Delivering power when renewable energy output is low



Smoothing variability and improving predictability for grid operators

What This Means Locally:

BESS can help utilities make better use of existing energy resources and infrastructure. It does not eliminate the need for new generation, transmission, or other grid investments, but it can help utilities use available power more efficiently and may reduce the need for certain upgrades over time.

Supporting PNW Economies

BESS projects can provide local economic benefits, though the scale and type of benefits vary by project size, ownership, local tax structure, and project agreements. Potential benefits may include:



Property tax revenue that may support local schools, public services, and infrastructure, depending on state and local tax structures



Construction jobs and local contracting opportunities



Limited long-term and maintenance work during project operations

What This Means Locally:

BESS projects can provide local value over the life of the project, including tax revenue, construction activity, local contracting opportunities, and operations and maintenance needs. The scale of those benefits will vary by project, ownership structure, tax treatment, and local agreements, so communities should evaluate economic benefits based on the specific proposal.

Bottom Line

BESS does not solve every grid challenge, and it is not a replacement for generation, transmission, energy efficiency, or other investments. Its value comes from flexibility. When thoughtfully sited, designed, and integrated into utility planning, BESS can help Pacific Northwest utilities manage peak demand, support reliability, make better use of existing resources, and reduce upward pressure on future costs.



Scan for sources

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What BESS Enables

SOURCES:

- National Renewable Energy Laboratory (NREL) – Battery Storage for Resilience
- American Clean Power (ACP) – What is Energy Storage?
- University of Michigan - Planning & Zoning For Battery Energy Storage Systems A Guide For Michigan Local Governments
- Portland General Electric (PGE) - Clean Energy Plan and Integrated Resource Plan 2023
- Pacific Northwest National Laboratory – Grid Energy Storage

QUESTIONS?

Contact renewables@renewablenw.org

