Battery Energy Storage Systems (BESS) Frequently Asked Questions (FAQ)

Battery energy storage systems, or BESS, are becoming an increasingly common part of the modern electric grid. The questions below reflect some of the most common topics raised by elected officials, planning commissioners, staff, and community members when discussing BESS.

While every project is unique, these answers provide general information and context to support informed conversations about BESS development. For more detail, see the toolkit's safety, siting, and decision-maker resources.

What is battery energy storage?

Battery energy storage systems, often referred to as BESS, store electricity for use at a later time. 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 demand increases or when additional power is needed. This allows grid operators and utilities to better balance supply and demand throughout the day.

BESS does not generate electricity on its own. Instead, it acts as a flexible resource that helps deliver electricity when and where it is needed most. As electric demand grows and more renewable energy resources are added to the grid, BESS is increasingly being used to improve reliability, reduce strain on infrastructure, and support a more resilient energy system.

Why is BESS becoming more common?

Electricity demand is growing in the Pacific Northwest, while utilities and grid operators are also planning for aging infrastructure, extreme weather, growing communities, and a changing energy mix.

BESS can help by storing electricity when it is abundant and delivering it during periods of high demand. Depending on the project's purpose and how it is fully integrated into utility planning, BESS may help avoid or defer certain infrastructure upgrades and reduce pressure on future rates. For more detail, see: BESS Opportunities and Challenges and What BESS Enables.

How does BESS support electric reliability?

BESS can respond quickly to changing grid conditions. It can discharge electricity during periods of high demand and recharge when demand is lower or generation is higher. This flexibility can help reduce strain on the grid and support reliability. In some cases, BESS can also support backup power or critical services during disruptions, but only when a project is specifically designed and connected for that purpose. *For more detail, see: What BESS Enables*

Is BESS safe?

Safety is one of the most common and understandable questions communities have about BESS. Modern BESS facilities are designed with multiple layers of protection, including continuous monitoring, temperature controls, fire detection systems, emergency shutdown capabilities, and other safeguards.

BESS projects must comply with rigorous codes and standards, including NFPA 855, the installation standard for stationary energy storage systems. UL 9540 is the safety standard for energy storage systems and equipment, and UL 9540A is the related fire test method used to evaluate thermal runaway and fire propagation in certain energy storage applications. For more detail, see: BESS Safety Standards

What happens if there is a fire or system failure?

BESS facilities are designed to detect abnormal conditions early and respond automatically. If a problem is identified, systems can isolate affected equipment, shut down portions of the facility, and activate fire detection or suppression systems.

Local fire departments are typically involved in reviewing projects and developing emergency response plans before facilities become operational. EPRI's BESS Failure Incident Database shows that the global failure rate per deployed capacity dropped 97% from 2018 to 2025, while also noting that incident datasets have limitations and may not capture every relevant incident. For more detail, see: BESS Safety Standards

How are BESS projects regulated?

BESS projects are subject to a range of federal, state, and local regulations. Depending on the location and size of the project, this may include land use approvals, building permits, electrical permits, environmental review, and fire code compliance.

Local governments play an important role in determining where BESS facilities can be located and what requirements they must meet. For more detail, see: BESS Siting and Design Considerations and Decision-Maker Guide.

Will a BESS facility affect nearby property values?

Property values are often discussed whenever new infrastructure is proposed. While every community and project is unique, the strongest available research on utility-scale BESS has not found a statistically significant impact on nearby home values once projects become operational.

Project design, location, screening, setbacks, and compatibility with surrounding uses remain important considerations. For more detail, see: BESS Siting and Design Considerations

What impacts can a BESS facility have on neighboring properties?

Common community questions include safety, noise, visual appearance, construction traffic, emergency access, and compatibility with surrounding land uses.

Many of these issues can be evaluated through site design and local review. Depending on the project and location, measures may include setbacks, landscaping, screening, noise controls, lighting standards, traffic management plans, and emergency response coordination. For more detail, see: BESS Siting and Design Considerations

What role do local governments play in BESS development?

Local governments help determine how BESS projects fit into their communities. Through planning, zoning, permitting, site design requirements, and coordination with public safety agencies, communities can establish expectations that reflect local priorities and conditions.

Local leaders do not need to become technical experts, but they should expect clear information about the project's purpose, site design, safety standards, community benefits, and long-term responsibilities. For more detail, see: Decision-Maker Guide and Who's Involved and What's Your Role