



ENERGY STORAGE

HEALTH, SAFETY, & ENVIRONMENT

Strengthening the electric grid while keeping communities and the environment safe.

All EDP Renewables North America (EDPR NA) energy storage systems comply with federal, state, and local wildlife and safety regulations to keep employees, neighbors, and the environment safe and healthy.

GRID STABILITY

Energy storage systems allow excess energy, from power plants or the grid, to be stored during off-peak times and used during times of need. While they most commonly support our average, everyday needs, energy storage systems can also act as back-up generators to support the electrical grid during extreme weather events and other major disruptions. **Keeping the power on, air-conditioning or heating systems operating, medical systems functioning, and other critical infrastructure working, will help keep people safe and healthy during otherwise vulnerable circumstances.**

A SAFE & HEALTHY LANDSCAPE

Like batteries used in handheld devices, **lithium-ion batteries do not give off electromagnetic radiation.** These batteries store electrical energy in chemical form, which can be converted back into electrical energy and discharged back to the grid.¹ Other infrastructure in an energy storage system may give off electromagnetic frequencies, but these would remain low-frequency, thus safe for even sensitive populations, as stated by the National Cancer Institute.²

NOISE IMPACT

Batteries in an energy storage system do not create noise. The fans, HVAC units, and transformers in energy storage systems can produce low-level sounds that vary in volume based on project design. Depending on how far one is from the project fence, these hums can be compared to the sound of a standard refrigerator or commercial building.¹ Noise-dampening precautions can be taken in the design of the storage units, as well as the buffer zone surrounding the systems.

Comparing Common Sound Levels³

Sound	Decibel Level
Vacuum Cleaner	75 dB(A)
Normal Conversation	60–70 dB(A)
Noise in a Busy Office	60 dB(A)
Household Refrigerator	55 dB(A)
300ft from Energy Storage System*	51 dB(A) ⁴
Quiet Bedroom	35 dB(A)
Background Noise in a Rural Area at Night	20–40 dB(A)

This chart is provided for comparison purposes only. Actual recorded sound levels may differ.

* Energy storage setback distances vary across jurisdiction based on local, state, and other regulatory requirements.

LAND USE

Standalone energy storage systems require about 10–20 acres of land to host the system's infrastructure and are often sited near an existing substation. The project area may require more space than this, depending on the size of the system and how much buffer is required to accommodate setbacks and space for emergency service and maintenance access. However, the additional land would have little to no equipment on it.

Energy storage systems look like a series of sleek structures, about the size and shape of a shipping container. The energy storage structures typically have a gravel or cement floor.

All energy storage infrastructure can be removed at the end of the project's lifetime, and the land can be restored to its pre-project use.

Scarlet Solar Energy Park | Fresno County, CA



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ENVIRONMENTAL IMPACTS

Energy storage facilities are designed to not release pollutants into the air, soil, or waterways.

Like all energy technologies, including the batteries in phones and laptops, battery storage systems can present chemistry-specific hazards under rare fault conditions.¹ However, utility-scale energy storage projects are required to have extensive, built-in safety systems to prevent such faults. EDPR also works with local emergency services to ensure proper response plans are in place and trainings are held to avoid unintentionally causing harm to the surrounding environment if a rare emergency were to occur.

A CLEANER ENERGY MIX

When energy storage systems are paired with renewable generation such as wind or solar, **excess energy from clean sources can be stored for use during times of peak demand.** By introducing this flexibility into the electrical grid, energy storage helps integrate more clean power into our energy mix and enables more people to rely on distributed energy resources. By integrating more renewables into our energy mix, **air pollution and greenhouse gas emissions are greatly reduced.**

When hybrid energy storage systems are paired with renewable generation, people and wildlife benefit from reduced emissions and the positive outcomes created by minimizing air pollution. When building wind, solar, or energy storage projects, EDPR conducts extensive studies to mitigate or avoid impact on wetlands, natural vegetation, and critical habitat for local wildlife, and lead the industry in developing new approaches to keep our net impact as positive as possible.

¹American Clean Power, *Clean Energy Storage Facts*, 2024

²National Cancer Institute, *Electromagnetic Fields and Cancer Fact Sheet*, 2024

³Yale Environmental Health & Safety, *Decibel Level Comparison Chart*.

⁴Insight Northeast Engineering & Land Surveying, P.C., *Planning Board Letter 11-25-20*, 2020.