

Multifamily Housing Battery Storage Fire Safety

FREQUENTLY ASKED QUESTIONS



The Kenzi Apartments in Boston, MA is equipped with solar and battery energy storage to power an on-site community resilience hub.

Photo: Clean Energy Group

What is battery storage?

A battery energy storage system is a rechargeable battery that stores energy from other sources, such as rooftop solar panels or the electric grid, to be discharged and used at a later time. For single-family houses, multifamily developments, and businesses, batteries can deliver cost savings throughout the year, provide valuable grid services, and serve as a clean, reliable, and automatic backup power option in the event of a grid outage. While battery storage systems can be composed of different materials, lithium-ion batteries are the most common. This fact sheet focuses exclusively on safety considerations for lithium-ion batteries.

How can battery storage support multifamily housing?

For multifamily housing properties, batteries can lower energy bills and generate revenue through providing grid services, resulting in economic benefits for the owner and/or residents. Battery storage at multifamily housing can keep essential services for residents powered in the event of an outage, including powering common area loads like elevators, lighting, and plugs to charge devices. Battery storage can also power a community resilience hub within the development, typically in a common area space, or even provide in-unit backup power for tenants in the event of an outage.

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Is battery storage safe to install at multifamily housing?

Yes. There have been only 65 injuries reported worldwide between 1995 and 2024 at battery storage installations across all sectors (residential, commercial, and utility scale), with no deaths since 1995, [according to UL data](#). In the US between 2011 and 2024, there were seven reported fires, three explosions, and one incident of battery swelling associated with residential battery systems, according to UL data. (This data set is limited by a reliance on public sources, though incident tracking is expected to improve with the recent rollout of the National Emergency Response Information System (NERIS), which aims to enhance data collection.)

Though residential battery storage adoption doubled from 2023 to 2024, emergency incidents are decreasing due to improved technologies, standards, and codes. In comparison, diesel generators (like the ones sold at hardware stores) cause an estimated 100 deaths a year, mostly due to carbon monoxide poisoning from improper use.

What are the fire safety risks associated with battery storage?

In rare cases, lithium-ion batteries can cause fires due to a process called thermal runaway, in which the battery enters an uncontrollable, self-heating state. This can be caused by issues including prolonged exposure to high temperatures, overcharging, an aging battery, system failures, or manufacturer defects. Fires caused by lithium-ion batteries are rare and largely preventable. Thermal runaway can also be triggered by exposure to high heat, such as from an unrelated fire within the home.

How can a multifamily housing provider mitigate the risks associated with battery energy storage?

Multifamily housing providers should work with their project developer and local permitting authority to ensure the battery is located in an appropriate area to minimize risk. Batteries should be installed by an experienced professional. Local fire departments should be notified of the battery type and location, and have clear, unrestricted access to its location in the event of a fire. Fire management protocols should be documented and clearly posted. Housing providers can work with local authorities to coordinate a walk-through of the housing complex and make note of vulnerable areas or challenging evacuation scenarios.

How can a multifamily housing provider support fire safety preparedness among residents?

Housing providers should empower residents to be involved in the process of preparing for battery energy storage system safety incidents. Transparency about risks and information about the benefits and purpose of battery storage helps residents feel safe, prepared, and supported, and discourages misinformation. Housing providers should provide clear, accessible

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materials about what the battery system does, where it is located, the safety systems and standards in place, and ways in which risk is managed. Materials should be available in the languages that the residents speak and in both digital and print formats.

Housing providers should inform residents about emergency evacuation procedures and routes and provide guidance for shelter-in-place protocols. If alarms and public notification systems will be used in the event of a fire, housing providers should prepare residents accordingly, either by providing information or by conducting regular drills, so that residents are aware of what the notifications mean and what they should do during an alert.

What actions should a housing provider take in the event of a battery storage fire?

Housing providers should work with first responders to ensure they are aware of the battery storage type and location within the housing facility, location of solar panels (if applicable), and any other necessary emergency protocol information. Providers should ensure residents with mobility impairments are able to evacuate safely. After the fire has been extinguished, a qualified electrician will need to remove the battery and any solar panels. The batteries may be at risk of re-ignition if not removed.

What you can expect from first responders

- First responders will use large amounts of water to extinguish the battery storage fire and cool the batteries to a safe temperature.
- Solar panel fires will be extinguished with water, and the panels will then be covered in black plastic so that they do not produce any more energy from sunlight.

What actions should residents take in the event of a battery storage fire?

Evacuate the building in accordance with emergency protocols. Fires involving lithium-ion batteries can spread quickly and emit toxic fumes. Residents should follow the fire evacuation plans arranged by the housing provider in the event of an emergency.

What are the health considerations for residents during a battery storage fire?

Health impacts of a battery storage fire vary depending on the severity of the fire as well as ventilation and suppression methods. A [review of large-scale battery energy storage fires](#) in the US since 2012 found that none resulted in widespread contaminant risks. [Studies show](#) that toxic gas emissions mostly stay near the location of the fire and dissipate quickly outdoors. The risk of groundwater contamination is also low.

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Battery fires produce a significant amount of smoke during and after a fire. These gases can be harmful and pose health risks, especially for people with health problems such as asthma or heart disease as well as children, the elderly, and pregnant individuals. In the event of a battery fire, vulnerable residents should wear proper personal protective equipment (PPE) and breathing protection and follow shelter-in-place or evacuation plans to avoid exposure to hazardous gases.

What is the remediation process, post battery storage fire?

Remediation and cleanup processes after a battery storage fire will depend on the severity of the incident. Housing providers should follow guidance from local environmental authorities and refer to the processes in place by the local fire authorities or emergency planning agencies. After a fire, access to the impacted area should be restricted to residents. Housing providers should work with local environmental agencies to monitor the air and water for toxic gases, heavy metals, and other volatile organic compounds. If runoff from fire suppression enters the ground or local waterways, soil and groundwater testing should be conducted.

There is no one-size-fits-all approach to remediation and environmental concerns. To learn more about potential impacts, see *The Public Health and Environmental Impacts of Lithium-Ion Battery Storage Fires: Frequently Asked Questions* [factsheet](#). You can also reach out to your local public health department.

Read other fact sheets in this series:

- [The Public Health and Environmental Impacts of Lithium-Ion Battery Storage Fires: Frequently Asked Questions](#) (August 2026)
- [Utility-Scale Lithium-Ion Battery Storage Fire Safety: Frequently Asked Questions](#) (December 2025)
- [Residential Lithium-Ion Battery Storage Fire Safety: Frequently Asked Questions](#) (December 2025)

These fact sheets and related resources are available on Clean Energy Group's website at www.cleanegroup.org/battery-energy-storage-fire-safety-toolkit.



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DISCLAIMER

This document provides a high-level overview for residents and communities interested in developing local battery storage resources. It is not a replacement for first responder training.