

**MCHENRY COUNTY**  
**SOLAR PROJECT**

FREQUENTLY ASKED QUESTIONS ON  
**BATTERY ENERGY STORAGE SYSTEMS**



### Why are batteries needed?

As the U.S. energy landscape evolves to more renewable energy sources, such as wind and solar generation, and less conventional fossil fuel generation, energy storage will play an essential role in stabilizing the grid. The electric grid matches supply and demand at every moment to function reliably. Energy storage systems store excess energy in times of low demand to be used later, especially during peak demand hours and emergency or grid outages. Storage helps place energy on the grid when needed instead of only when the wind is blowing, or the sun is shining.

### Why is energy storage important?

Energy storage fundamentally improves the way we generate, deliver, and consume electricity. Energy storage helps during emergencies like power outages from storms, equipment failures, accidents, or even terrorist attacks. But the game-changing nature of energy storage is its ability to balance power supply and demand instantaneously – within milliseconds – which makes power networks more resilient, efficient, and cleaner than ever before.<sup>1</sup>

### How is energy storage useful of a grid-scale?

Energy storage is needed on a grid-scale for three main reasons:

1. When charged with renewable energy like solar, energy storage delivers firm, flexible, clean energy and capacity.
2. Energy storage can store energy in times of excess production and discharge that energy when it is needed.
3. Energy storage provides a real-time balance

### Is energy storage technology safe?

Energy storage has been a part of our electricity grid since the 1930s and has a safety record that is similar to, or better than, other electricity generation, distribution, or management methods. Energy storage facilities have multiple layers of protection and monitoring systems in place to help mitigate any unsafe conditions. Additionally, these facilities are secured with perimeter fencing around the entire site to prevent unauthorized access.

### Why here?

1. We site energy storage facilities to maximize benefits to the grid and to customers.
2. Stand-alone storage facilities are typically closer to the electrical load and/or connected to the bulk transmission system (transmission lines/substations) in order to service energy users efficiently.
3. Co-locating solar and batteries at the same site helps to smooth the power supplied by the intermittent solar output and enables the two systems to share some hardware components, which can lower costs rather than having them at different sites.
4. Co-location can also reduce costs related to site preparation, land acquisition, labor for installation, permitting, interconnection, and developer overhead.

## Technical Q&A

### How are they protected from outside elements?

Outdoor enclosures are designed with outdoor ratings such as NEMA 3R / IP66 to prevent water ingress. These systems are also designed with appropriate anchor bolts and latching to comply with various wind ratings per the local building code, based upon ASCE 7. This is the same code other commercial and industrial facilities are designed to.

## Fire & Safety Q&A

### In the event of a fire, what is contained in the water used to extinguish the fire? Is foam used or some special extinguisher fluid?

Water used for fire suppression or cooling is normal fire water piped from city or town sources, hydrants, or other typical fire water sources such as well water or water on fire trucks. No special foam or liquid is required.

While not required, inert, non-toxic “clean agent” non-water-based automatic fire suppression such as FM 200 or NOVEC 1230 may be used in select locations within the building, containers, or racking on some systems as additional countermeasures to limit internal damage.

Some enclosures are designed to safely allow an internal fire to eventually burn itself out. In these instances, the fire department will monitor the enclosure to ensure the fire will not spread to adjacent equipment.

### After contact with batteries, will fire water contain toxins or chemicals that can contaminate ground water?

The primary purpose of water being used on an outdoor battery container is to reduce the heat of the container. A vast majority of the water sprayed onto the container will only contact the container housing and will not contact the battery modules themselves. The small amount of water that does leak into the container will be removed as part of the cleanup and decommissioning process.

In the event of a deluge event inside a dedicated-use battery building, the water will be treated in the same manner as deluge water used in other types of electrical fires and dealt with in a similar manner.

### In the event of a fire, what is contained in the smoke? Are there chemicals or toxins released into the air?

Smoke from any fire may be hazardous to humans, therefore, people should avoid contact with smoke or take measures to reduce their exposure. We are not aware of any data that suggests battery fire smoke is any more or any less toxic than residential, commercial, or industrial fires.

## Decommissioning Q&A

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### What happens to them at the end of life?

Batteries will be removed from the system and recycled in accordance with applicable requirements.

<sup>1</sup>(“Resources-Thought Leadership-FAQs,” Energy Storage Association, 2023.  
<http://energystorageassociationarchive.org/resources/thought-leadership/faqs/>)