

Frequently Asked Questions

Pepco is planning to install and operate a new battery energy storage system at our existing Livingston Road substation in Oxon Hill, Maryland. Below are answers to frequently asked questions we have received from the community regarding this project.

Battery Technology & Use

What is battery energy storage technology and how does it work?

The battery energy storage technology we are proposing to install is essentially a larger scale version of the batteries commonly used in the computers and smart phones we use daily, as well as smaller residential scale batteries that can be found in many homes. When directly connected to the energy grid, the system stores energy that can be used later to meet customers' needs.

A battery energy storage system collects energy from the local electric grid during times of low or normal demand. The energy is then stored in a battery connected to the distribution system. This available energy reserve can reduce the amount of energy needed from the regional transmission system during periods of high demand. The energy is supplied from the storage system back onto the local distribution system during periods of high demand and delivered to local homes or businesses or used to support the overall reliability of the local energy grid.

What type of battery is Pepco planning to install?

We plan to install a 1-megawatt battery system consisting of lithium-ion battery modules, transformer, and state-of-the-art electrical/telecom/control equipment. This is the most common type of battery technology used for grid-scale applications. Additionally, aesthetic fencing and landscaping will be installed to enhance the appearance of the substation and screen the battery system.

What is Pepco's experience with battery energy storage?

This project is one of Pepco's first involving battery energy storage. Our Exelon sister companies have successfully installed or are planning similar battery

energy storage technology to improve reliability and enhance customer experience. These include Baltimore Gas and Electric's Coldspring substation project in Maryland; an Atlantic City Electric project in Beach Haven, New Jersey; Delmarva Power's battery storage system on the Eastern Shore of Maryland; and three ComEd projects in Chicago's Bronzeville neighborhood, Shorewood, Illinois and Zion Illinois. Pepco also has battery storage projects planned in Montgomery County, Maryland, and the District of Columbia.

We are applying best practices from all these projects to this current project in Prince George's County.

Will you use the battery system during severe weather events?

During extreme weather that impacts the grid, this battery energy storage system will be able to assist in reducing substation load in the event there is a substation supply or transformer issue. The battery and associated switches will also be configured to supply electricity directly to approximately 350 nearby homes for 2 to 8 hours, depending on conditions.

Health, Safety & Environment

Is battery energy storage technology safe?

Yes. We design all our facilities with safety as our top priority and we are taking enhanced safety measures with this project. Battery energy storage technology is a safe and sustainable energy solution for our customers and communities. We are working with independent fire safety experts on the technical specifications of the battery to ensure they meet the latest industry standards.

What standards and codes are Pepco following?

Plans for this battery system will meet or exceed all local and regulatory codes for building, construction and fire precautions, including:

- Maryland Fire Code
- International Fire Code
- Institute of Electrical and Electronics Engineers (IEEE) 979: Guide for Substation Fire Protection
- National Fire Protection Association (NFPA) 13: Manual Sprinkler System Design
- NFPA 25: Standard for Inspection, Testing, and Maintenance of Water-Based Fire Protection
- NFPA 69: Explosion Prevention
- NFPA 72: National Fire Alarm and Signaling Code (Smoke Detection)
- NFPA 1620: Standard for Pre-Incident Planning
- NFPA 2001: Standard on Clean Agent Fire Extinguishing Systems
- Underwriters Laboratories (UL) 1741: Inverters, Converters, Controllers, and Interconnection System Equipment for Use with Distributed Energy Systems
- UL 1973: Standard for Batteries for Use in Stationary, Vehicle Auxiliary Power and Light Electric Rail (LER) Applications
- UL 9540A: Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems
- Environmental Protection Agency Title 40 of the Code of Federal Regulations part 273: Management of Intact Lithium Batteries
- COMAR 26.13: Subsections cover Hazardous and Universal Waste Management
- Resource Conservation and Recovery Act: 40 CFR Part 273 – Universal Waste Requirements; 40 CFR Part 262 – Requirements of Hazardous Waste Generators

Additionally, all Exelon utilities, including Pepco, follow a specific “defense-in-depth” model to enhance the safety and security of battery systems. There are three main pillars that apply to this project:

1. Prevent fires or thermal runaway.
2. System will rapidly detect and respond to conditions to reduce the likelihood of the condition reaching an unacceptable outcome (an unacceptable outcome would be harm to the public, employees, and/or first responders).

3. To prevent thermal runaway continuing after all other mitigation measures are activated, a water-cooling system will be installed inside the battery enclosure to cool the system and mitigate the effects.

What fire mitigation procedures will the battery system have?

Advanced fire protection and mitigation procedures and tools will be in place during construction and as part of the operation of the battery system.

This includes:

- A smoke detection that will activate an automatic suppression system. Upon activation of the smoke detection, the battery system will automatically shut down. Alarms are transmitted directly to Pepco and our contracted operating partner, AF Mensah, for response.
- A fire control station on the outside of the wall around the battery to allow Pepco and Prince George’s Fire and Rescue to evaluate conditions without opening the battery housing. The fire control station will monitor smoke detector status, heat detector status, and gas detection readings from inside of the battery container. It also includes a location for first responders to attach and pump water into the container if needed.
- A pre-piped water spray safety measure that will help avoid the need for first responders to enter the enclosure to address a potential fire. This system exceeds current Prince George’s County and Maryland codes and will help ensure the highest level of safety.

Additionally, the battery design and testing show that thermal runaway does not extend from cell to cell, which will help mitigate the potential for a fire.

In the event of a fire, local fire and rescue agencies will respond. We are working with local emergency management agencies, several fire protection engineering firms in Maryland, and Prince George’s Fire and Rescue, to educate first responders on the characteristics and safety design features of the battery system, training them on what to do in the event of an emergency, as we do for other electrical equipment and substations.

If there is a fire, will there be any release of gas or other contaminants into the air?

Like with any modern building, battery fires have the potential to release byproducts of combustion. This facility will suppress fires through a variety of methods including water suppression systems, which will also work to restrict smoke and harmful byproduct from drifting into the air.

If there is a fire, will local residents have to evacuate or shelter in place?

Evaluation methods and safety systems to avoid the need for evacuation are being built into this battery system. The decision to evacuate is based solely on first responder incident evaluation. Any evacuation requirements would be determined and communicated by local authorities.

Under typical weather and wind conditions, evacuation would be highly unlikely. EPA modeling software applied to this project predicted acceptable low levels of dispersed hazards into the environment. These evaluations were modeled using quantities at three times the expected release to ensure overly cautious and sufficient predictions regarding safety. We are also working with a company that specializes in air pollution to independently review and identify any potential hazards for areas near the battery system.

How will the battery system be secured and monitored?

Physical security will include a combination of a 10-foot-tall masonry wall, locked chain link fence, and barbed wire surrounding the equipment. A security camera and motion sensing lighting will be incorporated to detect an intrusion. Pepco's 24/7 security operations will be alerted to any adverse conditions.

Does this battery system support clean energy?

This project will not only enable a more resilient grid, but it advances clean energy technology in Prince George's County and support's Maryland's broader climate goal of reaching a 50 percent reduction in greenhouse gas emissions by 2030 (from 2006 levels). The future of a modernized grid that will benefit people and the environment involves installations of innovative technology such as battery storage systems. The Livingston Road project is a step towards the clean energy grid of the future.

What are the environmental impacts of constructing a battery in a residential area?

Environmental impacts to the local area are minimal and the net effect of installing clean energy solutions like battery storage will be positive to the climate. We will adhere to all permit requirements and utilize professional environmental monitors to ensure compliance and leverage third party environmental consultants as needed.

What emissions does the battery system produce?

The battery system does not produce any emissions. This facility stores electricity and supports the delivery of power to local homes and businesses; it does not

generate electricity, it simply maintains a charge of electrons and stores them for use similar to smaller battery-powered devices.

How does this project and Electric and Magnetic Fields (EMF) relate to our environment and community safety?

We understand some customers have concerns about Electric and Magnetic Fields (EMF) and we take those concerns seriously. Battery energy storage is a low voltage system, and this facility will have minimal impact on any EMF levels that currently exist due to other electrical sources in the area. Safety is always our top priority, and it is a constant consideration as we design, operate and maintain the local energy grid. We closely follow the most current EMF safety research and design our projects accordingly. At Livingston Road, we have contracted third party experts to conduct EMF studies and they have determined that nearby properties would not be impacted by this new system. We will continue to do field tests at this site and monitor EMF before and after installation as well.

It is important to remember that we live with EMF every day. EMF is present wherever electricity is generated, transmitted, or used and can be found in homes, offices and schools. The World Health Organization, the National Institute of Environmental Health Sciences and others have reviewed the large amount of scientific research that has been conducted on EMF and health over the last 40 years and concluded that exposure to EMF has not been shown to cause or contribute to any adverse health effects in adults or children.

What is the process for mitigating and addressing spills and runoff during and after construction of the battery system, including during weather events?

There is a very minimal risk for oil or chemical (liquid dielectric or coolant) spills during both the construction and operation of the battery storage system and all associated equipment. We hold both our contractors and employees to the strictest standards for spill prevention and control while performing maintenance and construction activities at any of our sites. The batteries being installed at this location are fully sealed and corrosion resistant, leaving little opportunity to leak. The battery system will be monitored 24/7 and any leak or damage detected would trigger an immediate response. All equipment will be visually inspected on a regular basis and preventative maintenance will be performed to ensure the system operates safely. We maintain spill kits on-site for use and will follow all procedural and regulatory spill control, reporting and cleanup requirements in the unlikely event of a release.

Location Selection

Why did you choose the current location for the battery energy storage system?

Pepco regularly identifies and evaluates opportunities to enhance and modernize the local energy grid to maintain safe, reliable, sustainable and affordable energy service.

The installation of the battery energy storage system, a clean energy technology at Pepco's Livingston Road substation, can support area electric service reliability, and be an interim energy delivery solution that will assist customers in the Oxon Hill area while further assessment occurs on the subsequent timeframe for a new substation in the National Harbor area. That assessment will address new residential and commercial development and the capacity of the existing substation, will take stakeholder needs into consideration and lay out a draft time frame for facility design, permitting and construction.

With the placement of this battery energy storage system at the existing Livingston Road substation power source, we are advancing energy equity for the residents of the surrounding neighborhood.

What other locations were considered?

Pepco did consider four additional locations: National Harbor substation site, MGM parking lot, Gaylord Hotel parking lot and South Pointe event area. The Livingston Road location was selected for the reasons noted above and because of its optimal location relative to its proximity to the local energy grid.

Who is benefiting from the Battery Project?

The 9,800 customers served by the Livingston Road substation will benefit from the battery project. Of those 9,800 customers, 1,700 are in National Harbor and 8,100 are in the greater Oxon Hill area. These customers will benefit from having stored energy available for reducing substation load during a system emergency. The battery and associated switches will also be configured to supply electricity directly to approximately 350 nearby homes for 2 to 8 hours in the case of an outage, depending on conditions. In addition, the battery will support an increased amount of distributed solar generation on the distribution system, helping meet Maryland's goals to increase renewable energy in the state.

All customers in Pepco Maryland will also benefit from the deferral of costs associated with deferring the

construction date of a new substation near National Harbor, as well as peak load reductions and energy conservation during times of high energy use.

Will the construction of the battery energy storage facility have any impact on the value of residential property?

Pepco's Livingston Road property has been used for utility purposes as an electric substation since 1963 and the installation of the battery energy storage facility is consistent with this long-standing use. The battery system will also be screened by a masonry wall and landscaping, enhancing the aesthetics of the facility.

How does this battery energy storage system alter the look of the site or the community and how close is it to homes?

This relatively small battery energy storage facility will be contained within the fence line of our property next to the existing substation facility. As we continue to evaluate the design the project, we plan to minimize potential visual impacts. The new installation will include fencing and vegetation that will help screen this small facility from the public. The battery units will be fenced within a masonry barrier and a new fence around the property and landscaping will also be installed. The facility will be approximately 200 feet from the nearest residential building.

Project Approvals

Has this project been approved by the Maryland Public Service Commission?

As part of the 2019 Energy Storage Pilot Project Act, the Maryland Public Service Commission (PSC) established a pilot program requiring electric utility companies to install energy storage systems. In November 2020, Pepco received approval from the PSC for two projects – this project in Prince George's County and another in Montgomery County.

What other approvals are required?

This project will also require approval by the Prince George's County Department of Permitting Inspection and Enforcement and the Maryland National Capital Park and Planning Commission (MNCPPC) before construction can begin. We submitted applications for these approvals in December 2021. During the approval process, Pepco will participate in a public hearing, to be led by the MNCPPC.

Project Costs

How much does it cost and who pays for it?

The project represents a \$6.3 million investment in the energy grid serving Oxon Hill. The project is part of the hundreds of millions of dollars we put towards modernization efforts across our service area each year. The Maryland Public Service Commission will determine the specific recovery method in a future distribution regulatory rate review. The benefits of the project are expected to exceed the total costs of the project – lowering future Pepco distribution rate from what they otherwise would be.

Timeline

When will this project begin and when will it be completed?

Project construction is expected to begin in October 2022 and be completed by April 2023, following the Maryland Public Service Commission's approval in August 2022 to extend the in-service date of the system.

Keeping The Community Informed

Will local elected officials be involved in the process?

Yes. We conduct regular outreach to local officials and participate in regular community meetings. Prince George's County representatives have also actively participated in the Maryland Commission Energy Storage Working Group. We are committed to working closely with anyone in the community who has an interest in this project.

How will Pepco keep the community informed about this project?

We are committed to working closely with our customers and communities to address questions and minimize potential impacts throughout the project. We value your input and will work with you to incorporate your feedback and address your concerns, wherever possible, and will keep you informed throughout the entire project.

We will use the below methods to share updates and information on this project:

- Ongoing Community Advisory Group (CAG) meetings
- Open house community meetings
- Direct communications to customers, such as customer letters and mailings
- Updates on our social media channels, including Twitter, Facebook and NextDoor
- Updates on our website at **[pepco.com/ReliabilityProjects](https://www.pepco.com/ReliabilityProjects)**

How can I submit a question or general feedback about the project?

We have a dedicated project phone number **888-996-0003** and email address **pepcobatterystorage@pepco.com** to ensure we can respond quickly to your questions.

Learn More: [pepco.com/ReliabilityProjects](https://www.pepco.com/ReliabilityProjects) | pepcobatterystorage@pepco.com | 888-996-0003