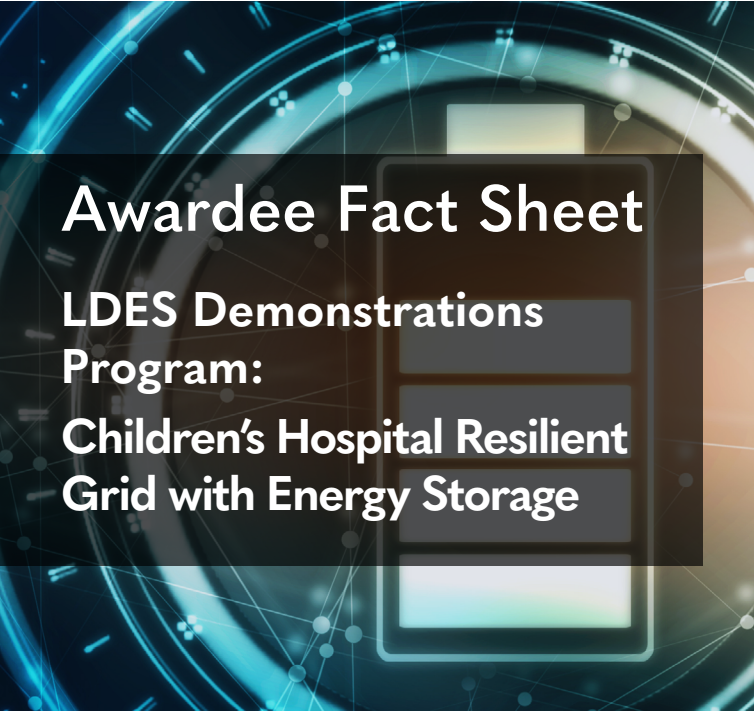




Long-Duration Energy Storage Demonstrations Program – Children’s Hospital Resilient Grid with Energy Storage

The Long-Duration Energy Storage (LDES) Demonstrations Program, managed by the U.S. Department of Energy’s (DOE) Office of Clean Energy Demonstrations (OCED), aims to validate new energy storage technologies and enhance the capabilities of customers and communities to integrate grid storage more effectively. As part of this program, OCED sought applications for LDES projects from a range of different technologies intended to overcome technical and institutional barriers to full-scale deployment of LDES systems in diverse geographies. OCED selected nine projects to begin award negotiations for a total of up to \$286 million. Following negotiations, in September 2024, OCED awarded the Children’s Hospital Resilient Grid with Energy Storage (CHARGES) project with more than \$2.8 million to begin activities in Phase 1. The CHARGES project would be located at Valley Children’s Hospital in Madera, CA.



Awardee Fact Sheet

LDES Demonstrations Program: Children’s Hospital Resilient Grid with Energy Storage

Project at a Glance

- » **Total OCED Cost Share:** Up to \$30 million
- » **Phase 1 Total Project Amount:** \$5,709,960*
- » **Phase 1 OCED Award Amount:** \$2,854,980**
- » **Phase 1 Scope of Work:** Project planning related to budgeting, permitting, procurement; community benefits and engagement activities; and other early development activities
- » **Phase 1 Timeline:** 12–15 months
- » **Recipient:** Charge Bliss, a leader in the design, engineering, construction, and operation of multi-resource microgrids that provide energy generation, storage, and innovative controls for health care facilities in North America
- » **Project Locations:** Valley Children’s Hospital, Madera, CA
- » **Start Date:** September 2024

*Represents the total project cost for Phase 1.

**Represents OCED’s cost share for Phase 1. Additional funding for this project is subject to future award negotiations at the end of each project phase.

About This Project

Charge Bliss plans to design and build a non-lithium-ion battery energy storage system at a pediatric hospital in Madera, CA. The system would use the smallest commercially available flow battery modules to build flexible and scalable systems that would provide up to 3.3 MW of power for at least 10 hours. Charge Bliss plans to integrate their microgrid controller with the battery management system to provide continuous remote monitoring of the system. The remote microgrid controller would optimize the hospital’s use of the on-site energy pod with existing power and grid-supplied energy needs to support enhanced resiliency, affordable energy, and sustainability at the hospital.

The hospital facility demonstration could significantly increase the capacity, redundancy, and reliability of backup power for essential power loads to ensure continuity of medical services, significantly decrease reliance on fossil fuel generators, and further develop and demonstrate battery and controller functionalities.

In September 2024, OCED awarded the CHARGES project more than \$2.8 million to conduct Phase 1, which is expected to last 12–15 months. During Phase 1, Charge Bliss and the project team will conduct project planning related to budgeting, permitting, and procurement. The team will also initiate community benefits and engagement activities along with other early development activities.

Children's Hospital Resilient Grid with Energy Storage Project Fact Sheet

Project Site

The CHARGES project would be located at Valley Children's Hospital in Madera, CA, where extreme weather events, rapid electrical load growth, aging generation and transmission equipment, and deferred system maintenance have increasingly strained the local electrical supply. The facility is the only children's hospital available within a 500-mile radius. Due to limited energy transmission and distribution capacity in the region, the hospital is at significant risk of repeated and prolonged power outages. While existing backup power systems are sufficient to support emergency power needs, this project would facilitate the replacement of diesel generators with cleaner, more cost-effective resources at the facility.

Community Benefits Commitments

Community benefits commitments are a key component of the CHARGES project. These commitments are informed by and developed in consultation with local communities to help maximize local benefits and mitigate any potential negative impacts. The CHARGES project plans to implement these commitments through:

- Creating a **Community Engagement Team** composed of stakeholders from the impacted project area, including a tribal liaison. This committee will assist with ensuring the use of appropriate community engagement and advisory mechanisms, assessing and ensuring equitable impacts, providing input for workforce and community plans, and assisting with public data reporting.
- **Supporting career-connected workforce development** by engaging with certified apprenticeship programs, labor unions, trade schools, and other educational institutions to understand off-site training and education needs, site-based learning and construction opportunities, and mentorship needs for LDES workers.
- Creating **equitable pathways to employment and supporting opportunities for career advancement and continuity** for underrepresented workers, including through partnerships with community-based organizations, academic institutions, government agencies, and direct engagement with underrepresented communities.

More details on the CHARGES project's community benefits commitments can be found in the [Community Benefits Commitments Fact Sheet](#).



Aerial image of Valley Children's Hospital (Photo Credit - Goalpost)

Children's Hospital Resilient Grid with Energy Storage Project Fact Sheet

LDES Demonstrations Program Goals

More than 335 million residents in the United States depend on our energy grid to reliably generate an average of 4 trillion kilowatt hours of power annually. During times of high demand, especially during inclement weather when it's more difficult to generate power, it's essential to have energy stored that can be deployed to meet demand, keep prices down, and ensure the lights stay on. Long-duration energy storage is one key option, storing energy that can be discharged over long periods of time that's ready for dispatch when needed. DOE defines LDES as systems capable of delivering electricity for 10 or more hours. The LDES Demonstrations Program features projects with a range of intraday (10 to 36 hours) and multiday (36 to 160+ hours) storage solutions, which can minimize the frequency and length of power interruptions caused by events such as severe weather or cyberattacks on the grid. These projects will help effectively demonstrate the commercial viability of innovative LDES technologies and facilitate wider commercial adoption. Through these projects, OCED envisions the technology eventually being replicated all over the country, providing flexibility and reliability to the power system without creating emissions, supporting a more renewable-heavy future.



Artist's rendering of aerial view of Valley Children's Hospital solar farm and microgrid
(Photo Credit - Goalpost)

Contact

Program Email: OCED_LDES@hq.doe.gov

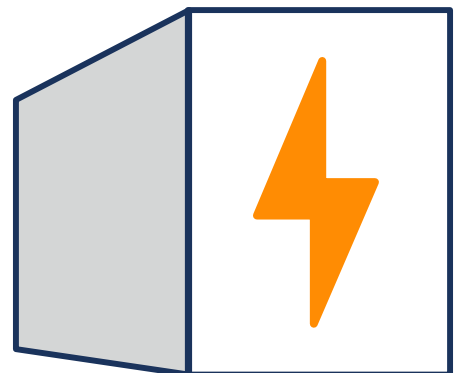
Site-Specific Email: CHARGES_LDES@hq.doe.gov

OCED Media Email: OCEDNewsroom@hq.doe.gov

More Resources

Website: energy.gov/oced/LDES

Office of Clean Energy Demonstrations: energy.gov/oced



The U.S. Department of Energy established OCED to help scale the emerging technologies needed to tackle our most pressing climate challenges and achieve net-zero emissions by 2050. OCED's mission is to deliver clean energy demonstration projects at scale in partnership with the private sector to accelerate deployment, market adoption, and the equitable transition to a decarbonized energy system.