

# Secure, Dynamic Interoperability of Microgrid Assets



**CREDC**  
CYBER RESILIENT ENERGY  
DELIVERY CONSORTIUM

*Optimized control  
of microgrid  
components for  
enhanced  
resilience and  
security*

Microgrids are emerging as a means to advance power and cyber-physical resiliency in future grid systems. However, interoperability of various components is presently ad hoc, with suboptimal and cyber-insecure operation and dispatch. This project develops a distributed framework for optimizing the management of microgrid assets to maintain stable operation in the face of adverse events, including attacks against microgrid controls.

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## **KEY TAKEAWAYS**

- Establishes a secure framework for interoperability of microgrid assets and develops robust control designs for dynamically managing microgrid components
- Builds an intelligent collaborative defense against malicious cyberattacks
- Designs an autonomous system with a secure dispatch mechanism

## OUTCOME

The framework developed in this project enables plug and play operations for microgrid assets, improving system efficiency and reliability. This enhances grid independence and control during microgrid islanding instances, mitigating the economic impacts of power disruptions.

## PARTICIPANTS

## ROLE



The CREDC performs multidisciplinary research and development that focuses on the cybersecurity of energy delivery systems. The central project goal is to create an ecosystem where research results lead directly to the development of applications and methodologies, which are then validated in realistic contexts.



Leads research, development, and testing

## CONTACT INFORMATION

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**CREDC Total Award Value:** \$28,099,258

DOE Share: \$22,476,290

Cost Share: \$5,622,968

### CYBERSECURITY FOR ENERGY DELIVERY SYSTEMS (CEDS)

CEDS projects are funded through DOE CESER, which aims to enhance the reliability and resilience of the nation's energy infrastructure by reducing the risk of energy disruptions due to cyberattacks.

Website: <https://www.energy.gov/ceser>

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