



ENERGY SYSTEMS  
INTEGRATION FACILITY

U.S. DEPARTMENT OF ENERGY



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## National Fuel Cell Technology Evaluation Center

The National Fuel Cell Technology Evaluation Center (NFCTEC) at NREL's Energy Systems Integration Facility (ESIF) plays a crucial role in NREL's independent, third-party analysis and validation of proprietary technologies in real-world operation. The NFCTEC is designed for secure management, storage, and processing of proprietary data from industry. Access to the off-network NFCTEC is limited to NREL's Technology Validation Team, which analyzes detailed data and reports on technology status, progress, and technical challenges.

### Laboratory Specifications

NREL partners submit operational, maintenance, safety, and cost data to the NFCTEC on a regular basis, typically every three months. NREL's Technology Validation Team uses an internal network of servers, storage, computers, backup systems, and software to efficiently process raw data, complete quarterly analysis, and digest large amounts of time series data for visualization.

### Application Scenarios

NFCTEC analysts currently generate results for durability, reliability, maintenance, costs, operation, utilization, range, efficiency, safety, and end user trends using the NREL Fleet Analysis Toolkit (NRELFAT). NRELFAT has processing and analysis capabilities for a variety of applications, including:

- Fuel cell, hybrid, and plug-in electric vehicles
- Fuel cell buses
- Material handling equipment (forklifts)
- Laboratory data
- Backup power
- Stationary power
- Fueling infrastructure

While the raw data are secured by NREL to protect commercially sensitive and proprietary information, individualized data analysis results are provided as detailed data products (DDPs) to the partners who supplied the data.

Individual system, fleet, and site analysis results are aggregated into public results called composite data

products (CDPs) that show the status and progress of the technology without identifying individual companies or revealing proprietary information.

Since 2004 NREL has produced around 200 CDPs for these hydrogen and fuel cell technology validation projects:

- Hydrogen Fuel Cell Vehicle and Infrastructure Learning Demonstration
- Early Fuel Cell Market Demonstrations
- Fuel Cell Technology Status

View published CDPs online at [www.nrel.gov/hydrogen/proj\\_tech\\_validation.html](http://www.nrel.gov/hydrogen/proj_tech_validation.html).

### Partner with Us

Work with NREL experts and take advantage of the state-of-the-art capabilities at the ESIF to make progress on your projects, which may range from fundamental research to applications engineering. Partners at the NFCTEC include:

- Government agencies
- Vehicle manufacturers
- Transit agencies
- Hydrogen suppliers
- Fuel cell developers
- Hydrogen and fuel cell organizations

### Contact Us

If you are interested in working with the National Fuel Cell Technology Evaluation Center, please contact:

**NREL's Technology Validation Team**  
[techval@nrel.gov](mailto:techval@nrel.gov)

### Major Laboratory Equipment

- Secure lab space with 24/7 controlled badge access
- Internal server network for storing and processing data
- Secure conference room for collaboration
- Dedicated computer processing
- Data backup system
- MATLAB

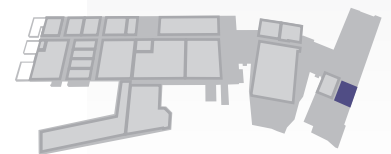


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