



Storm Damage Estimate Prediction and Recovery Tool (Storm-DEPART)

Capability predicts post-incident critical infrastructure damage and estimates recovery support needs

Power utility storm team works to restore power after outages from a hurricane.

Each year hurricanes and tropical storms in the United States damage critical infrastructure assets and disrupt the services they provide. The recovery time from these events impacts millions of people as they try to carry on with their daily lives. Each new weather event increases the need for rapid and accurate prediction and recovery estimations for critical infrastructure. To meet this need, Idaho National Laboratory and Entergy developed the Storm Damage Estimate Prediction and Recovery Tool, or Storm-DEPART, to improve decision-making and efficiency while preparing for severe weather events.

OVERVIEW

Storm-DEPART combines critical infrastructure inventory data with weather forecasts to predict weather-related damages to a utility service provider's assets. It also estimates recovery support that will be needed to restore normal operations, including time, materials and resources.

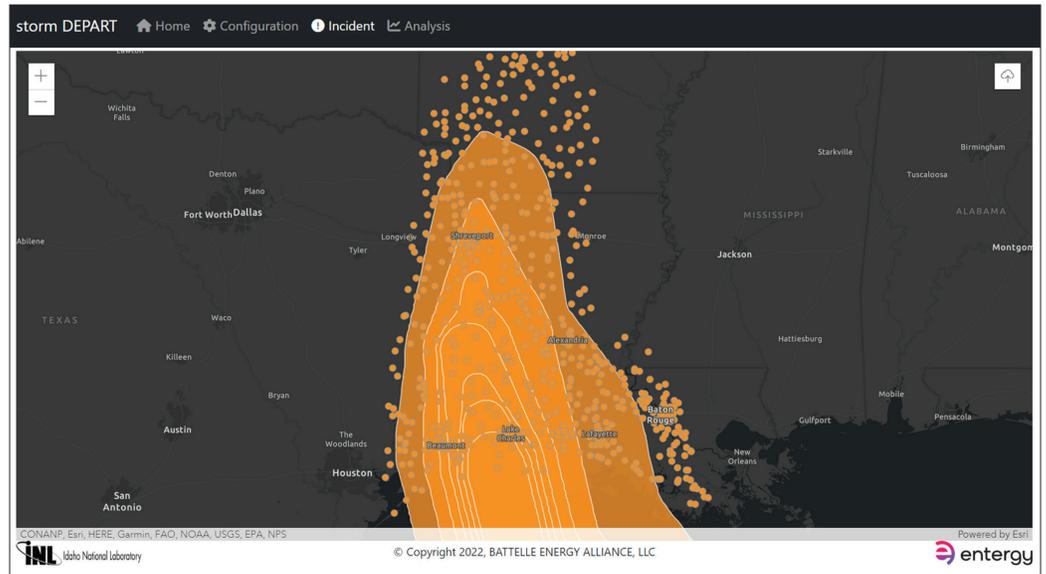
In addition to actual weather forecasts, the tool can model major weather events where storms have not been experienced recently, or at all, by allowing a utility service provider to apply a planning scenario and model expected damage to inform infrastructure restoration needs. In the

event of a severe storm, this innovative solution assesses potential wind damage to power generation capacity, transmission grids and distribution networks. More effective predictions allow organizations to efficiently allocate resources and optimize recovery efforts for the critical electricity service customers depend on.

DATA

Leveraging weather data from the National Hurricane Center and infrastructure asset data provided by utility service providers, Storm-DEPART provides an organization with more accurate damage predictions, resource deployments and restoration estimates.

A Storm-DEPART visualization shows a power utility's assets in the path of a storm.



FOR MORE INFORMATION

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IMPACT

The Storm-DEPART capability evolves with increased data collection, real-world post-incident validation and verification, and new techniques emerging from research and development.

In the short term, the tool provides immediate and comprehensive analysis of weather-related damage predictions and recovery support. This allows organizations to make informed decisions on resource allocation and logistics before major weather incidents hit.

Long-term development impacts include the ability to better prepare for and respond to disruptive events, increasing the resilience of a utility service provider's infrastructure assets.

FUTURE

The INL team is working on the evolution of Storm-DEPART focusing on:

- Material, logistics and resource modifications
- Integration of actual distribution damages
- Ice event damage prediction framework

As demonstrated through the successful collaboration between INL and Entergy, Storm-DEPART could revolutionize the way utilities approach prediction and response across our nation.

WORK WITH INL: INL RESILIENCE OPTIMIZATION CENTER

What are your options, and at what cost? Work with INL to identify your options before you incur costly storm damage. INL prepares government and private industry assets to be more resistant to disruption, faster, less expensive and more informed. We will help:

- Rapidly assess resilience gaps
- Define how current resilience posture affects your operational success
- Map and validate system interdependencies
- Explore options for mitigation
- Leverage existing best practices from public and private entities

Battelle Energy Alliance manages INL for the U.S. Department of Energy's Office of Nuclear Energy.

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