
Framework for a Resilience Handbook

*Recommendations for the
U.S. Department of Energy*

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EAC
ELECTRICITY ADVISORY COMMITTEE 

Framework for a Resilience Handbook

Introduction

In March 2019, the Electricity Advisory Committee (EAC) provided several recommendations to the Department of Energy (DOE) in its “Policy and Research Opportunities for Grid Resilience” work product. Among those recommendations was that DOE develop a resilience handbook that details the process by which a state or region can develop resilience standards. In response to this recommendation, DOE asked the EAC to develop a framework for this handbook. The EAC proposes the following framework for the recommended handbook.

Approach

EAC Members developed this framework based on their experience and knowledge, as well as on developments in the industry. EAC Members also consulted with DOE staff to understand the activities DOE is currently undertaking in this area, and thus ensure their recommendations are appropriate.

Recommendation

The EAC recommends this framework for the handbook:

- I. What is resilience in power systems?
 - a. Definition of resilience as seen by customers and how that definition relates to transmission, generation, and distribution
 - b. Design resilience vs. operational resilience
- II. Who is responsible?
 - a. Role of NERC, PUCs, FERC, ISO/RTOS, utilities, other infrastructure providers
 - b. What are best practices and what are regional differences?
- III. When is it appropriate to increase resilience?
 - a. What level and which investment are appropriate?
 - i. Investor vs. societal benefits
 - ii. Geographic influences?
 - iii. Reliability vs. resilience—cost/benefit and best investment?
 - iv. Risk considerations and quantification with uncertainty
 - v. Sample questions and weighting methodology
 - vi. What about the intersection of electricity with other infrastructure?
 - vii. How do we consider alternatives to legacy technologies, such as distributed energy resources and other flexible grid concepts?
 - viii. Where are the gaps?
 - b. What are the standards and metrics? What should DOE propose?
 - c. What is the appropriate decision matrix?
 - d. How should the appropriate (optimal) investment be determined?
 - e. What are best practices for design?
 - f. What decision/design tools are available/dependable? How will the North American Energy Resiliency Model (NAERM) assist in this context?
 - g. Funding mechanisms in different regulatory areas
 - i. Market areas (PJM, MISO, Southwest Power Pool [SPP], Electric Reliability Council of Texas [ERCOT], New England, New York)
 - ii. Bundled utilities (e.g., Southern Company, Duke Energy)
 - iii. Hybrids
- IV. What are the best practices for regulatory review?
 - a. Tools for review
 - b. Appropriate treatment
 - c. Case studies
 - d. Minimizing conflict between State and Federal authority

Conclusion

This recommendation is meant to serve as a framework for the resilience handbook recommended by the EAC in March 2019. The handbook would answer fundamental questions about resilience and discuss different types of resilience investments, how they are funded, and best practices for resilience review.