

2nd Stakeholder Meeting Information

Motivation

Recent extreme weather events, natural disasters, and cyberattacks have demonstrated the vulnerability of the electric power system. This is problematic because the electric grid is central to the functioning of the economy and is a foundational requirement for the web of interconnected systems that serve the community during times of extreme disruption. Nearly every service that citizens require – from medical treatment to dry shelter – depends on electricity. The project team seeks to understand and quantify the threats to the power system in North Carolina and the negative economic and societal impacts that flow from them. Equipped with an understanding of these issues and an analysis of potential solutions, the team will recommend pathways for prioritizing investments in electric infrastructure improvements that allow North Carolina to minimize the impact of disasters on its residents and the economy.

Stakeholder Session Purpose Statement

To achieve its stated goals, the project team must develop a complete understanding of the threats faced by the power grid in North Carolina and the impact that these threats can have on the residents and the economy. These threats and their consequences are different in each region. Furthermore, there are at least three major models for power distribution in the state, including vertically integrated investor owned utilities, rural electric cooperatives, and municipal electric providers. During this session, the team seeks (1) to understand the threats faced by the electric power grid in the different regions of North Carolina; (2) to understand the consequences of these events in the different regions of the state; (3) to gather insights on known vulnerabilities in the different regions; and (4) to harvest inputs on certain specific solutions known to be needed in various regions.

Breakout Sessions

There will be two breakout sessions during the December 3rd stakeholder meeting. Each breakout session will focus on a different part of North Carolina. During the first session, the facilitator will focus on understanding the threats in each region. During the second session, discussion will turn to potential solutions.

First Breakout Session: Understanding Regional Threats

During the first breakout session, participants will be asked to identify themselves and their organization and to identify the resilience dimension from Table 1 that they consider to be most important for their region. These dimensions were taken from a community resilience framework developed by NIST.¹ The team has selected these dimensions because they provide a useful way to think about the ways in which electric power is foundational to the functioning of a community after any major event.

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https://www.researchgate.net/profile/Amy_Frazier/publication/284507306_Framework_for_defining_and_measuring_resilience_at_the_community_scale_The_PEOPLES_resilience_framework/links/565e082408ae1ef92983a0ea/Framework-for-defining-and-measuring-resilience-at-the-community-scale-The-PEOPLES-resilience-framework.pdf

During the discussion, facilitators will seek to understand more about the top three issues and understand how electric power relates.

Table 1: The Dimensions of Resilience

Dimension	Community Vulnerability	Power System Vulnerability
Population and Demographics	<ol style="list-style-type: none"> 1. What is the social vulnerability of the population, and how does this impact your response to disasters? 2. Are there vulnerabilities associated with the ability of your population to bounce back? For example, historically disenfranchised groups can be more negatively impacted by disasters because of a more general feeling of hopelessness. 	<ol style="list-style-type: none"> 1. Are there large demographic groups that remain after storms that need power for essential services? For example, shelters, child care, etc. 2. Will a loss of power impact your ability to provide medical services, or will restoration exacerbate demographic issues?
Environmental and Ecosystem	<ol style="list-style-type: none"> 1) Are there particular threats to the environment that impact your community (i.e. threats to agriculture from storms, wastewater runoff, etc.) 	<ol style="list-style-type: none"> 1) Is there a strong relationship between power and the ability to protect the environment (i.e. wastewater treatment facilities). Are there vulnerabilities to providing diesel for backup at key locations?
Organized Governmental Services	<ol style="list-style-type: none"> 1) Are there vulnerabilities to your ability to provide emergency services following a disaster? 2) Are there vulnerabilities associated with services such as medical treatment, social services, elderly care, etc.? 	<ol style="list-style-type: none"> 1) Is there a specific concern about getting diesel for back up generators, for instance? Do you not have adequate backup? 2) How does a loss of electric power impact essential social services?
Physical Infrastructure	<ol style="list-style-type: none"> 1) Are there particular infrastructure vulnerabilities that your community faces (i.e. impacts from flooded roads, limited redundancy in electric power infrastructure, etc.) 	<ol style="list-style-type: none"> 1) Are there specific threats to your power infrastructure or your ability to get fuel for long periods?
Economic Activity	<ol style="list-style-type: none"> 1) Are there specific vulnerabilities to your economy, i.e. do you have a high dependence on 	<ol style="list-style-type: none"> 1) Without electric power, is your economy threatened in some way?

	tourism that leaves after a disaster?	
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Second Session: Developing Regional Solutions

During the second breakout session, the discussion will focus on potential solutions. The primary questions are the following:

- 1) Based on the previous conversation, are there specific solutions that you want to consider?
Examples:
 - Electric System Improvements – substation improvements, system hardening, fault detection, smart metering, alternative fuel supplies, etc.
 - Critical Infrastructure Capacity Building (central hub for community services, shelters, emergency supply centers, food distribution facilities) – on-site back up power, fuel supply redundancy, microgrids, EE improvements, load demand reduction methods, CHP, etc.
- 2) What are the biggest challenges to achieving solutions?
 - Local
 - State
 - Utility
 - Federal
- 3) Can this group help you plan next steps for your community?