

Guide to Impacts

Introduction

Impacts describe the effects that threats have on power system infrastructure, systems, or processes. The identification of impacts associated with each threat is an important step in assessing vulnerabilities. Every threat could impact the power system in multiple ways. For example, strong winds from tornadoes could cause transmission poles and lines to fall—resulting in power outages, additional costs for repairs, and financial loss due to decreased generation requirements. For more information on impacts, refer to the presentation at the end of this section.

To identify power system impacts:

- Identify impacts to the power sector
- Identify impacts to the end user

Key Terms

Before identifying impacts, it is helpful to clarify a few key terms in relation to power sector resilience.

Threats—anything that can expose a vulnerability and, either intentionally or accidentally, can damage, destroy, or disrupt the power system. Threats can be natural, technological, or human caused. Threats are not typically within the operator's control. They can include wildfires, hurricanes, storm surges, cyberattacks, and more. For additional information on threats, refer to the *Threats* section of this guidebook.

Impacts—the extent to which a threat affects power sector infrastructure, systems, or processes (e.g., a tornadoes causes wind damage to transmission lines).

1. Identifying Impacts on the Power Sector

Threats can impact the power sector in many ways and are not limited to physical effects on infrastructure. Different types of impacts include:

- **Effect on delivery of power**—the percentage of service disrupted, effects on power quality, etc., due to impacts on generation, transmission, or distribution.
- **Effect on capital and operating costs**—additional costs incurred during a power disruption and costs to resume or maintain the reliable operation of the power system.

2. Identify the Impacts on the End User

Threats also impact the various end users of the power system in different ways. These impacts include health and safety impacts to the population and environmental effects, such as the release of toxic materials, effects on biodiversity, changes to an area's ecosystem, impacts on historic sites, and others. End users include the general population, communications industry, transportation, government infrastructure, and medical services.