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KEY OPPORTUNITIES

Understanding, assessing, and comparing physical climate risk assessment frameworks. EPRI's standardized characterization template helps utilities understand third-party framework capabilities, strengths, and weaknesses in terms of utility needs.

Guidance for physical climate risk assessment and management. The template provides guidance for developing grounded assessment approaches for informed decision-making.

Informed engagement. The template facilitates informed conversations with stakeholders (internal and external) and framework providers.

This brief is based on P201E research: *An Initial Approach for Characterizing Third-Party Physical Climate Risk Assessment Frameworks for Utility Applications, 3002031389.*

A Template for Understanding Third-Party Physical Climate Risk Assessment Frameworks for Utility Applications

By Bailie Neary, Steven Rose, and Erik Smith

A tool for characterizing, assessing, and comparing corporate physical climate risk assessment frameworks

Growing interest in corporate climate risk assessment and management plus increasing demands for climate risk disclosure have led to a proliferation of third-party physical climate risk assessment frameworks designed to meet these needs. However, it is difficult to readily comprehend their capabilities, strengths, and weaknesses.

EPRI researchers have proposed a characterization template to describe and summarize framework capabilities for electricity, gas, and transmission and distribution utility applications. The template elucidates each framework's basic functionality, including types of assessments supported (hazard, exposure, vulnerability, and risk), and details about each assessment type (scientific underpinnings, assumptions, and uncertainty characterization).

The template facilitates understanding and comparison, as well as informs utility framework development and provider and stakeholder engagement. This initial characterization approach is available now to inform assessment discussions and for application to frameworks. Revisions are expected with use and suggestions for improvement are encouraged. In the future, a living library of assessments could be created based on this template. An illustrative example for the First Street Foundation's framework is currently included.

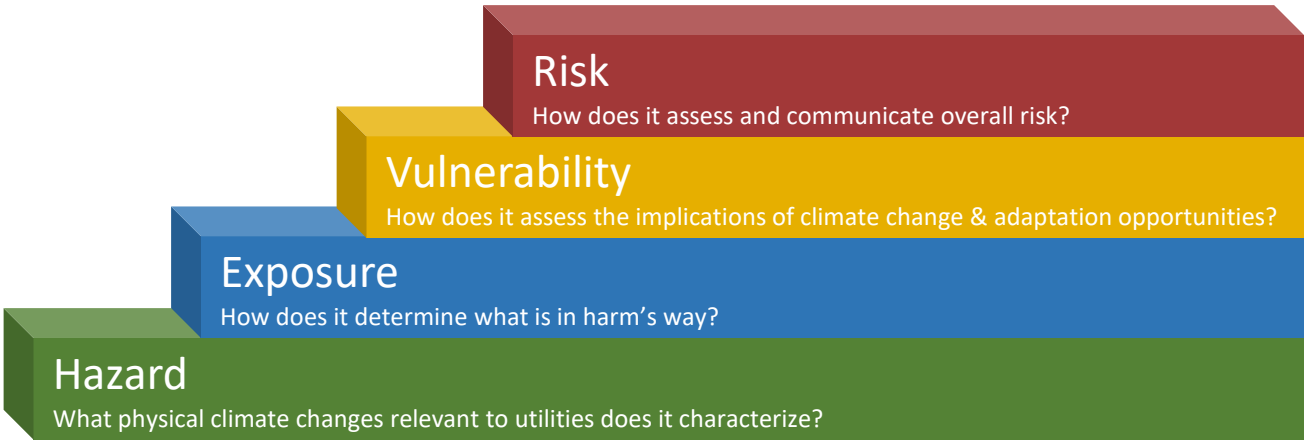

Figure 1. Visualization of how the characterization template builds understanding of a physical climate risk assessment framework's capabilities through a series of hazard, exposure, vulnerability, and risk assessment questions.

Building on foundational research on the structure and needs of physical climate risk assessments, the template characterizes a framework's capabilities with respect to each of the component assessments: hazard, exposure, vulnerability, and risk (Figure 1).[1,2] A hazard assessment describes potential physical climate-related changes relevant to utilities. An exposure assessment describes infrastructure, operations, and services in harm's way of the physical changes. A vulnerability assessment describes the potential exposure implications and adaptation opportunities. Risk assessment describes the overall likelihood and consequences given risk preferences and risk management.

The template helps a user determine which component assessments are included in a framework and uses structured questions to construct a standardized characterization of each component assessment's capabilities in terms of its structure, resolution, inputs/drivers, outputs for current and potential future conditions, uncertainty considerations, and supporting science.

Use of the template contributes to improved methods, refinements, a novel resource, and informed dialogue. The template provides guidance for developing grounded assessment approaches and informed decision-making. Applications of the template facilitate future improvements and the creation of a living library resource cataloguing framework capabilities that grows with time. The template also facilitates informed conversations with stakeholders (internal and external) and framework providers.

Contact us for assistance or guidance (email below). We welcome opportunities to advise applications, review results, and discuss methodological choices.

1. *Grounding Climate Risk Decisions: Physical Climate Risk Assessment Scientific Foundation and Guidance for Companies – Initial Key Company-Level Insights, Technical Principles, and Technical Issues*. EPRI, Palo Alto, CA: 2022. 3002024246.

2. EPRI Climate 101 series (specifically *Climate Hazard, Exposure, and Vulnerability Assessment 101*, Modules 4–6).

FOR MORE INFORMATION

Access the template and companion document: *An Initial Approach for Characterizing Third-Party Physical Climate Risk Assessment Frameworks for Utility Applications.* 2025. EPRI, Palo Alto, CA. 3002031389.

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