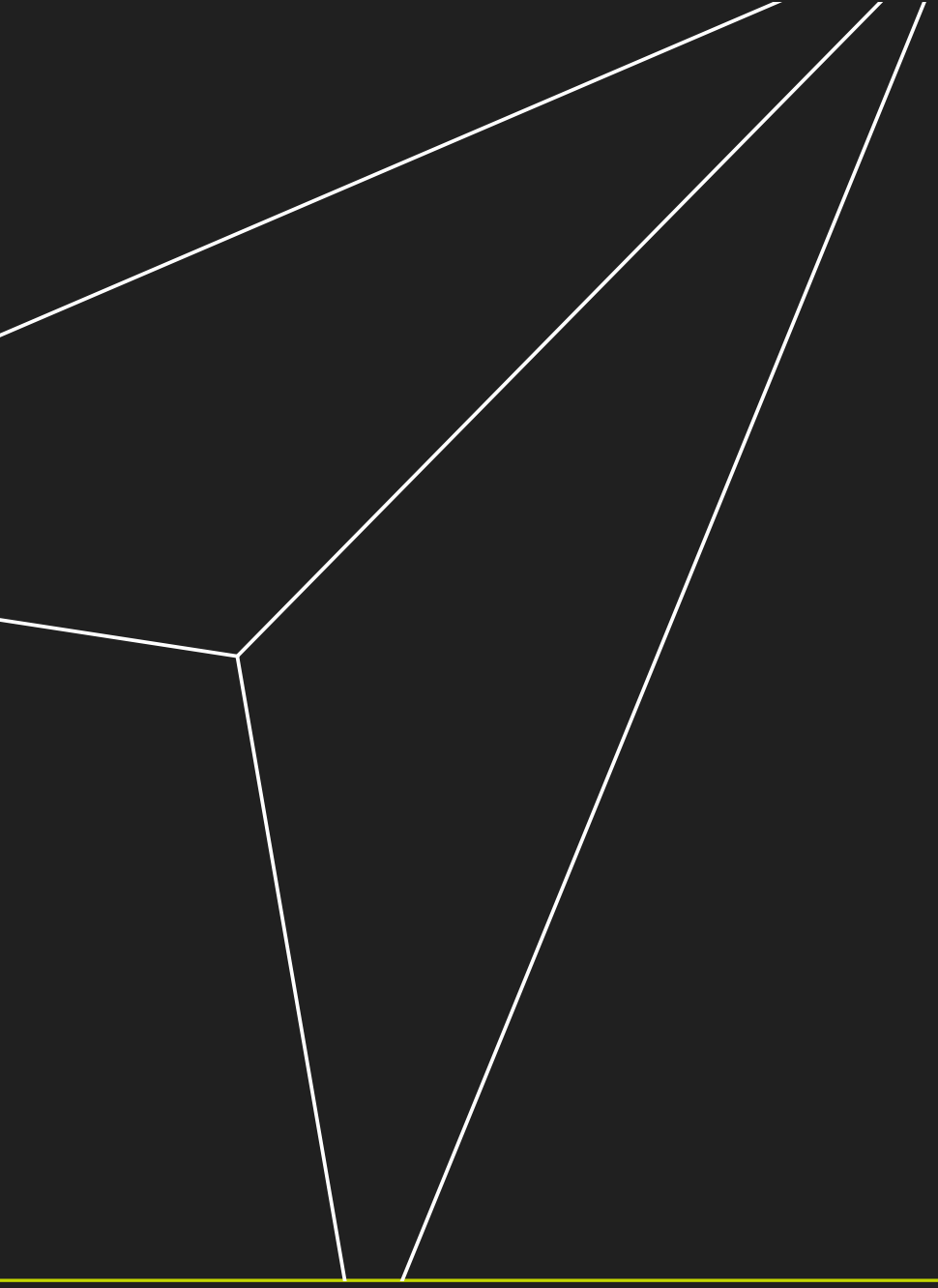
OEB Electricity Distribution Vulnerability Assessment and System Hardening

July 2024 Stakeholder Meeting

Agenda

VASH Overview **30 Minutes**	Discuss project goals and guiding principles and provide an overview of the VASH approach with a focus on weather event severity considerations.
RPQR Working Group Survey Results **20 Minutes**	Discuss key findings from the system hardening section of the RPQR survey and takeaways for the VASH project.
Timeline and Discussion **1.5 Hours**	Review timeline and engage in guided open discussion.



VASH Overview

Project Goals & Guiding Principles

Outcome: A VASH Report that will provide a standard framework that prioritizes customer value to allow LDCs to develop and evaluate climate resilience adaptive actions, whether proactive or responsive, and make investment decisions in a consistent manner.

The VASH Report will,

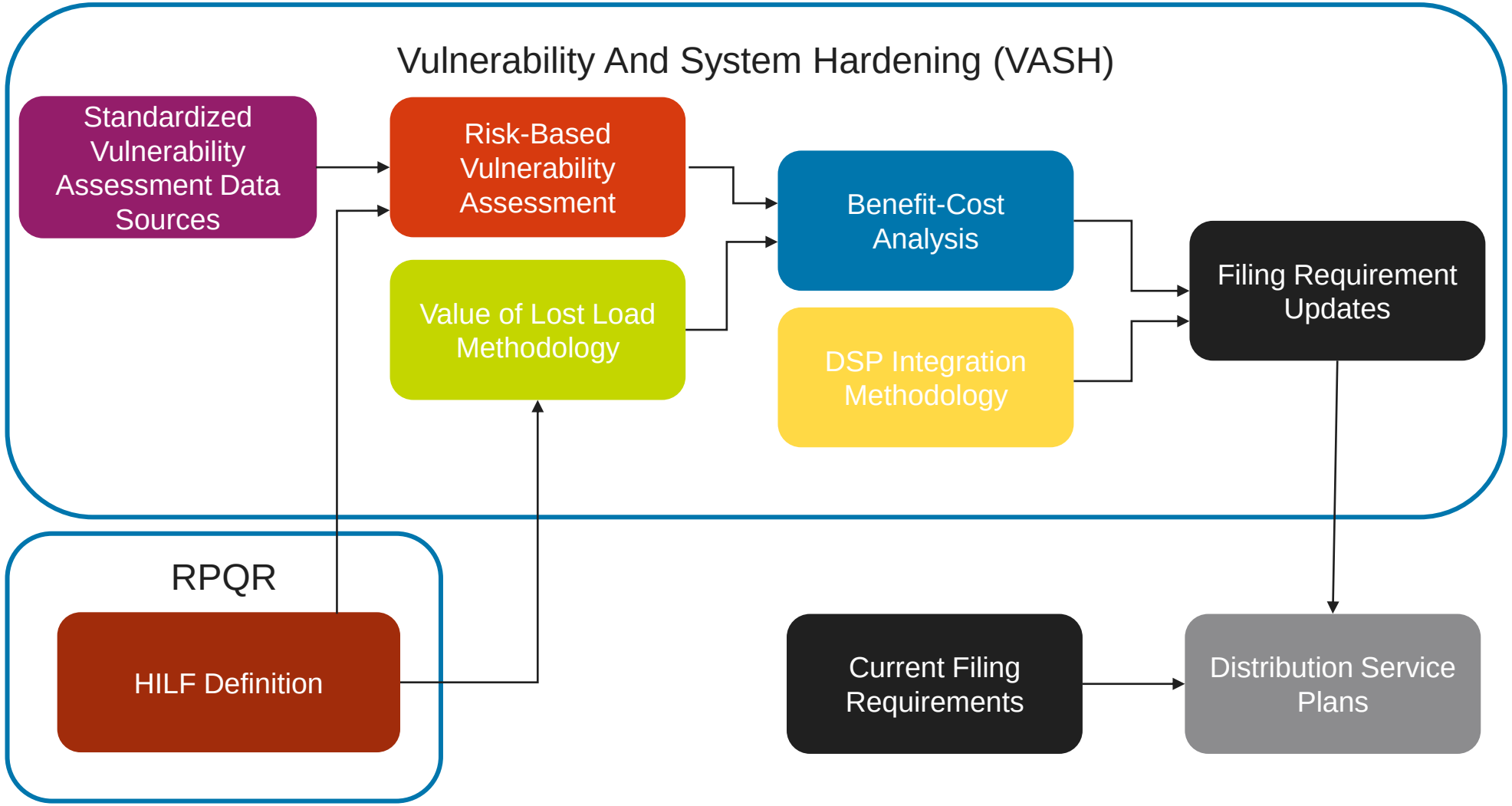
- **Focus on Customer Value:** Maximizing long-run benefits of distribution service to customers as a whole, including the value of lost load.
- **Provide LDCs Guidance to Consistently Integrate Resiliency Investments into Distribution System Planning:** All LDCs are expected to integrate resiliency investments that address severe weather events into their DSP filings with a level of detail commensurate with the load they serve.
- **Provide a Consistent Standard of Evaluation for Adaptive Actions:** All parties to the rate filing process should be aware of the expectations of satisfactory LDC resilience planning actions.
- **Be Immediately Usable for Distribution Planning by LDCs:** The filing requirements based on the VASH Report should provide LDCs with the information required to complete a satisfactory resilience plan to accompany any rate filing submitted in Year 2026 (for 2027 rates) or later.

Scope Parameters

To deliver the VASH Report in adherence to the project goals and guiding principles the OEB, with input from this stakeholder group, will,

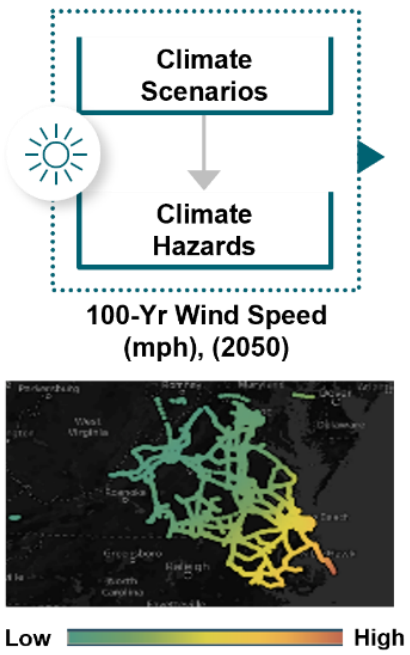
- **Define a standard framework** for the assessment of risk and value so that LDCs can implement adaptive actions through relatively simple and repeatable calculations. Also provide benefit and cost streams that could be included in cost tests.
- **Provide a standard set of data for assessing vulnerability** to define severe weather events while allowing for use of unique sources and identifying where assumptions have been required to address gaps in publicly available climate, vulnerability, and value of lost load data.
- **Identify opportunities for alignment of resilience adaptive actions** with other investment requirements of LDC DSPs acknowledging that specific integration with every case is beyond the scope of a framework document.
- **Provide direction to LDCs for the VASH approach** and undertake such research as required to meet the needs specific to their DSP and service territory for a cost of service application.

VASH Scope and Approach

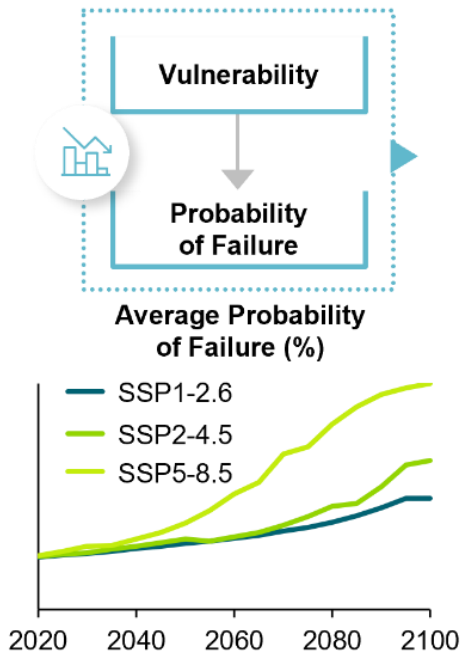


Resiliency Risk Analysis and Investment Development

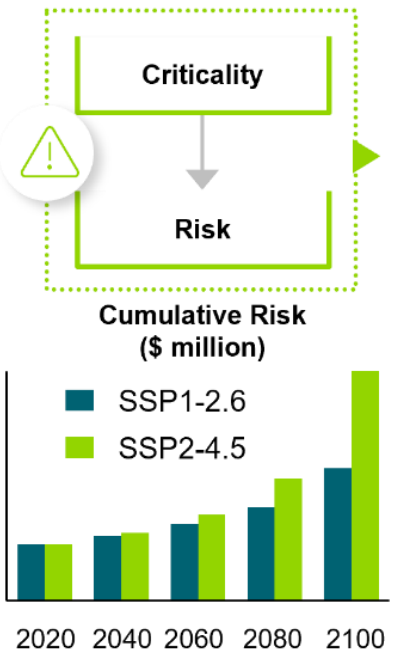
Objective system asset resiliency risk analysis includes four stages increasingly performed by distributors in the face of observed changes in the frequency and severity of severe weather events.



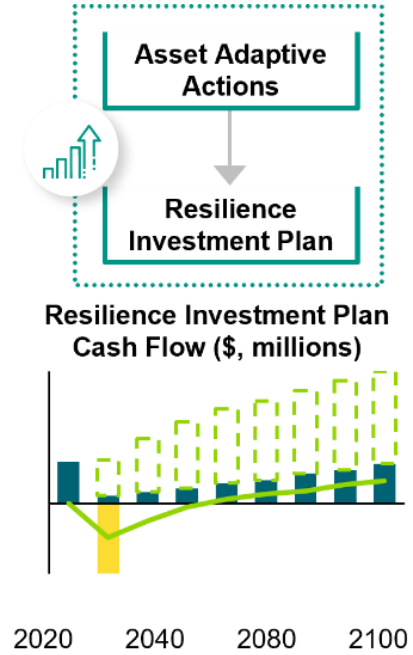
Climate forecast for a broad range of climate hazards and scenarios (SSPs) for screening of assets.



The vulnerability assessment defines the level at which an asset would fail due to a climate hazard and per climate scenario.



The risk forecast combines the probability of failure with the cost of the asset's failure.



Implement adaptive actions by assessing programmatic investments to mitigate the risk from climate hazards.

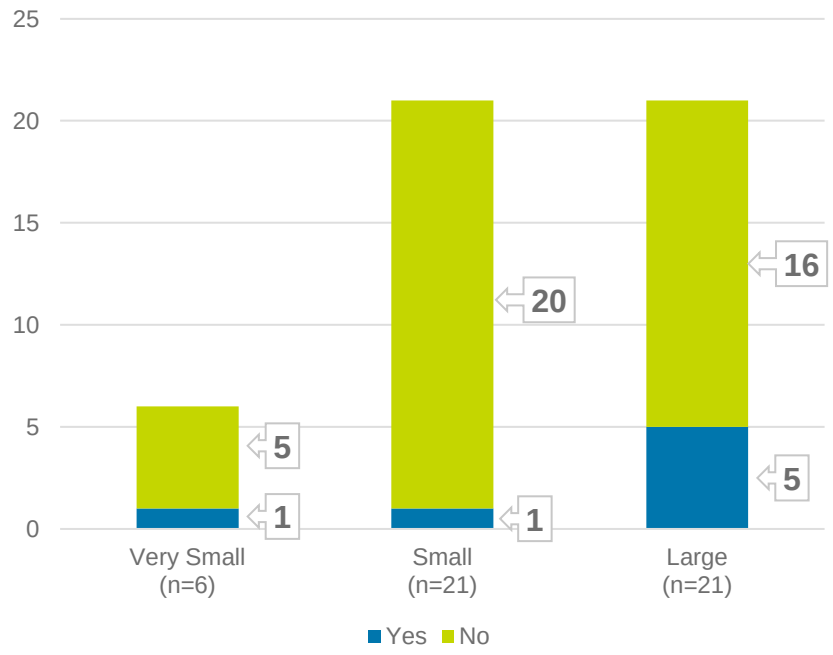
- Investments
- Resilience Savings
- Cumulative Risk
- Net Cash Flow

RPQR Working Group Survey Results

RPQR Survey Results

Climate Vulnerability Assessment

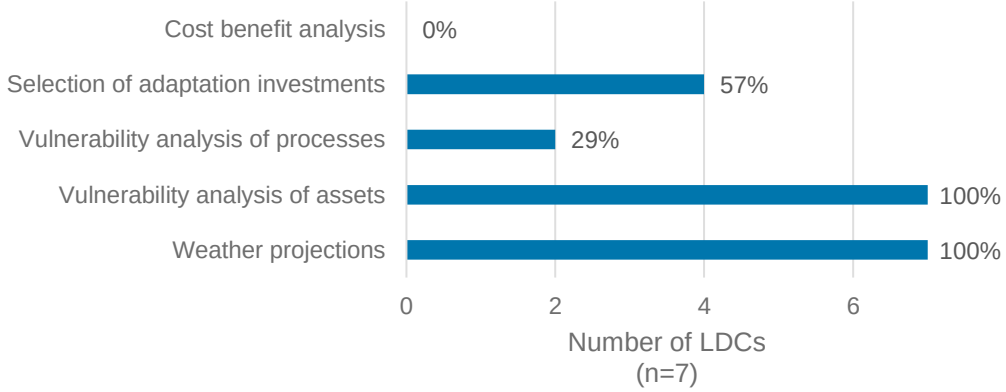
7 out of 48 LDCs (15%) have indicated that they have completed a climate vulnerability assessment within last five years



Type of Assessment

Qualitative evaluation and planning (e.g., future change in heat characterized relatively as “high,” “medium” or “low”)	**3**
Quantitative assessment and/or modeling (e.g., developing specific climate projections, asset sensitivity thresholds and impacts)	**0**
Both qualitative and quantitative analysis	**4**

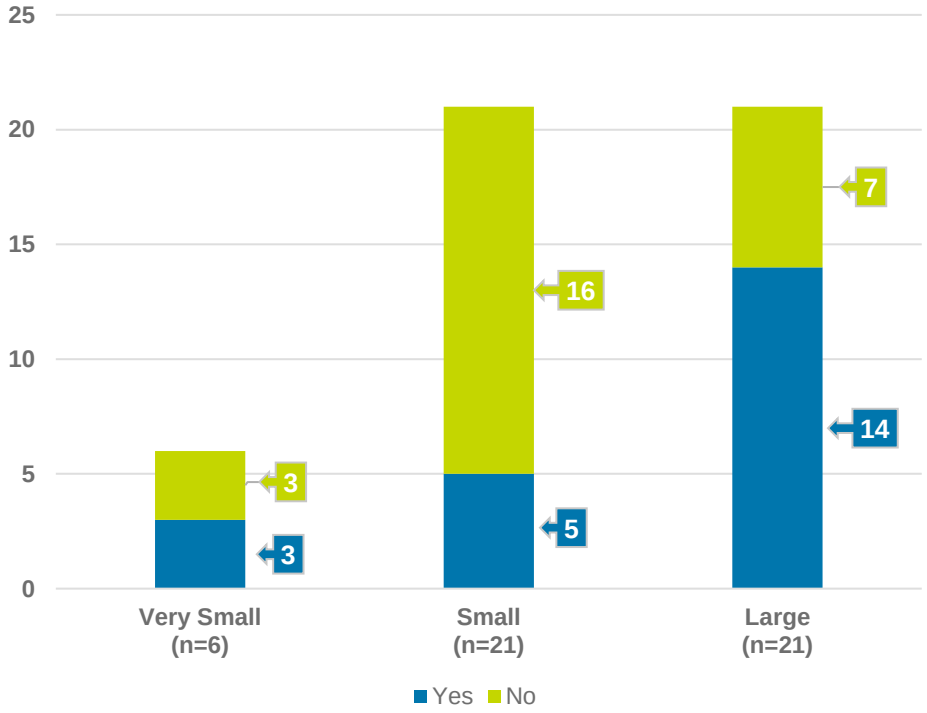
Elements in Climate Vulnerability Assessment



RPQR Survey Results

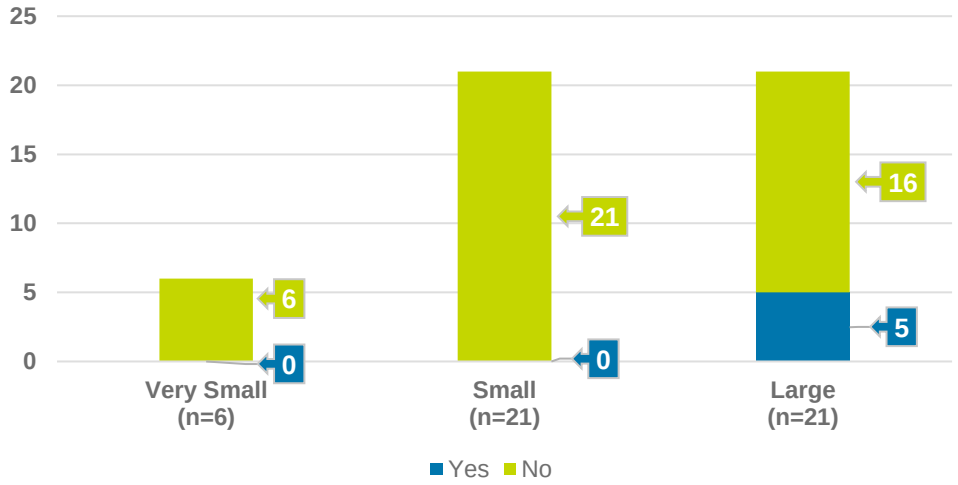
Incorporating Resilience in System Planning

22 out of 48 LDCs (46%) stated that they currently incorporate resilience into their system planning as one of the investment drivers



Incorporating Value of Lost Load (VoLL) in Cost Benefit Analysis

5 out of 48 LDCs (46%) stated that they currently use VoLL studies to evaluate the cost and benefits of their investment plans related to reliability or resiliency

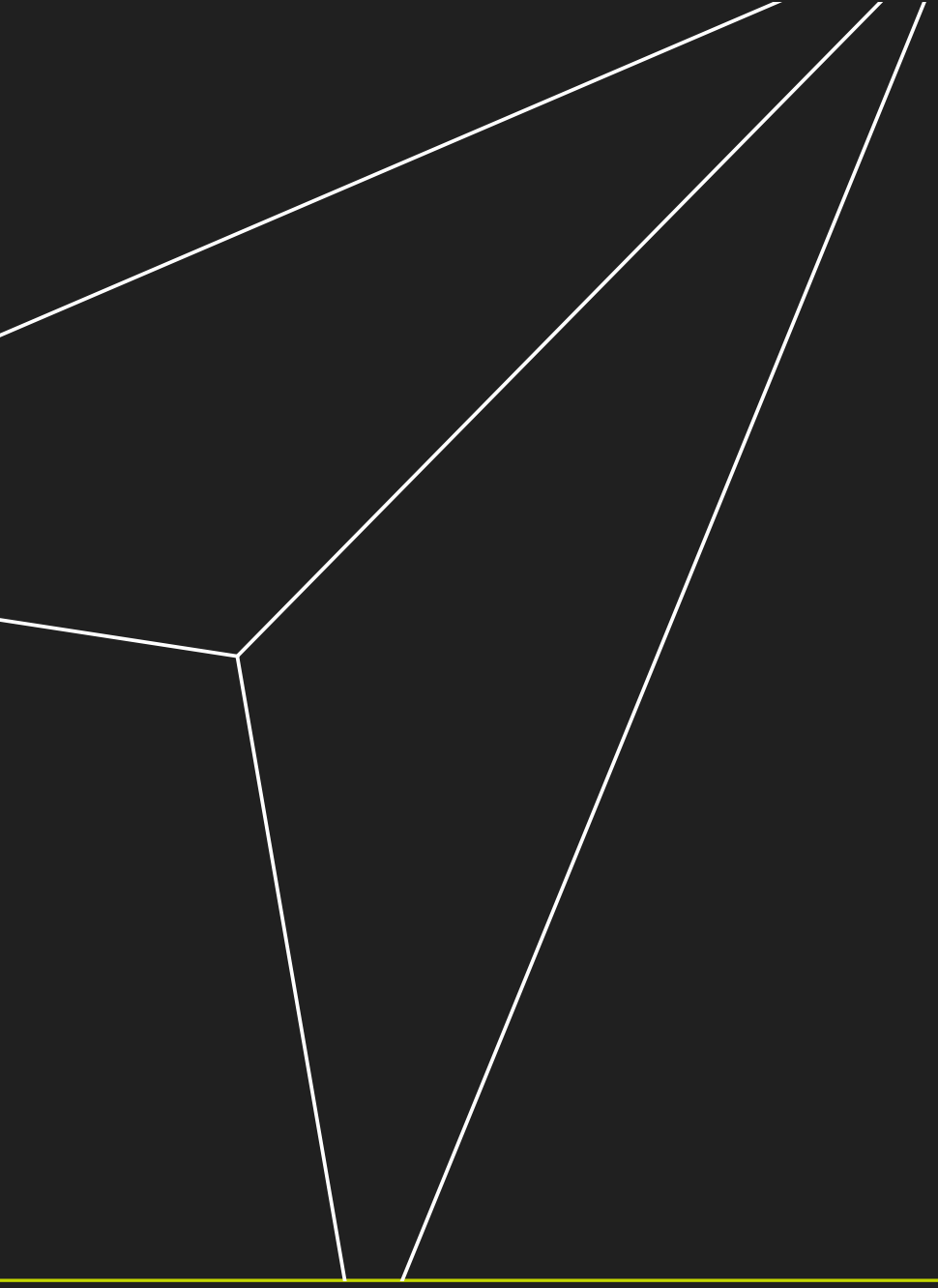


LDC used sources for VoLL

Department of Energy
CEATI Value of Service
Options Analysis Report by 3rd Party
Calculation based on Customer Surveys

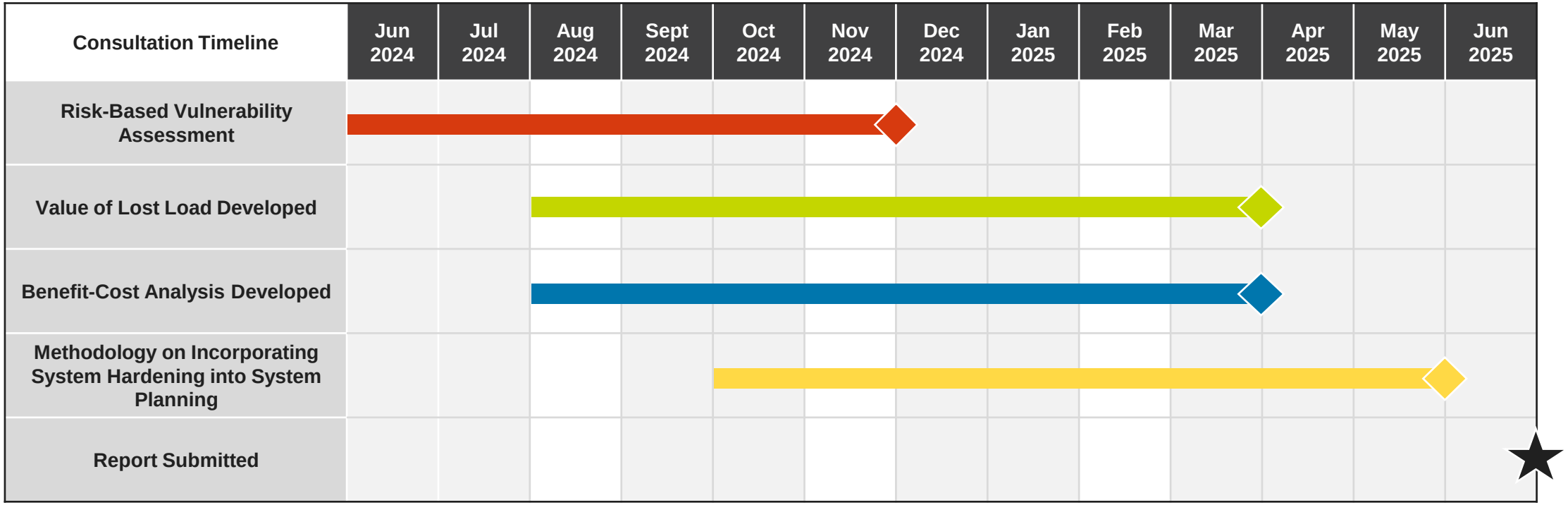
Event Severity

Interruptions caused by weather events range from low impact, high frequency (LIHF) to high impact, low frequency (HILF). The severity of event required for VASH consideration is one of the elements that will need to be discussed.



Timeline and Discussion

VASH Report Development Timeline



For up-to-date VASH timeline and activity tracking, please visit the OEB Engage with Us site.

Open Discussion

Key Discussion Topics for feedback:

- Survey results discussion:
  - When planning for resilience, what area of the event severity spectrum does your organization consider?
- For those currently not undertaking vulnerability, VoLL, or BCA studies, what are your main challenges and how can VASH be structured to support you in resiliency planning?
- Should resilience investments target HILF, all weather-related major events, or all severe weather events?
- In the context of a cost of service application, is the VASH approach suitable for demonstrating addressing resilience and justifying investments?
- Other questions for discussion

Your guides

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