



Advisory Group Meeting

Framework Development Workshop



31 October – 1 November 2024



CONVERGE
STRATEGIES

Day 1 Agenda

01

Workshop Objectives

03

**Energy Risk and
Criticality**

02

**Executive Summary +
User Guide**

04

Restoration Priorities

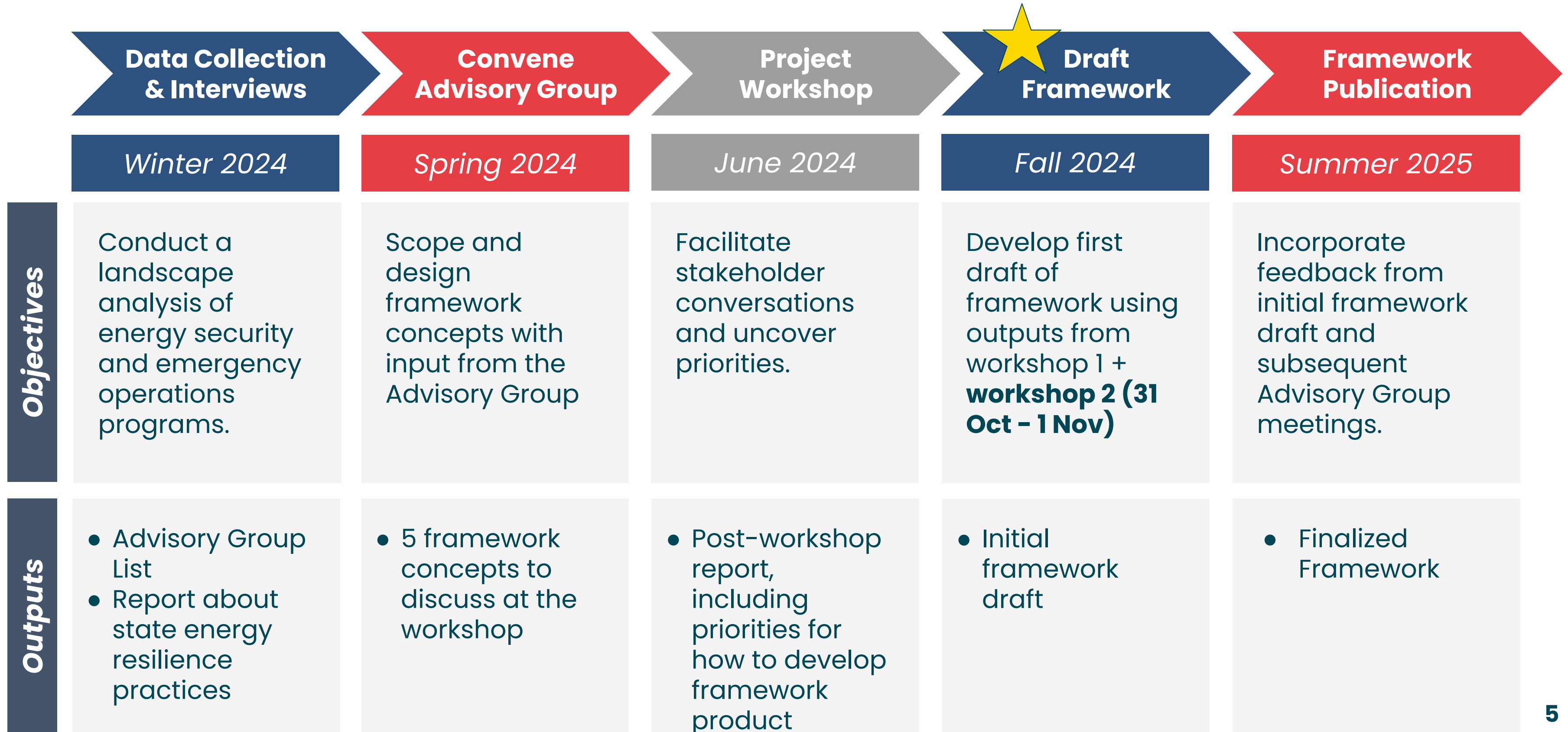
Welcome + Introductions

Workshop Agenda

Day 1 Thursday 31 October	
Time	Description
1:00 – 1:15 PM	Welcome/ Introductions
1:15 – 1:45 PM	Introduction Section
1:45 – 3:00 PM	Risk + Criticality
3:00 – 3:15 PM	Break
3:15 – 4:45 PM	Restoration Priorities
4:45 – 4:50 PM	Closing Remarks
5:30 PM	Evening Reception

Day 2 Friday 1 November	
Time	Description
8:00 AM	Continental Breakfast Available
8:30 – 8:45 AM	Welcome/ Day 1 Recap
8:45 – 9:30 AM	Interdependency Planning
9:30 – 10:15 AM	Resource Adequacy
10:15 – 10:30 AM	Break
10:30 – 11:15 AM	Design + Integration
11:15 AM – 12:00 PM	Closing Discussion

Effort Milestones | Past, Present, + Future



Workshop Objectives

CONTINUE DEVELOPING THE FRAMEWORKS



1. Energy Risk + Criticality
2. Restoration Priorities
3. Interdependency Planning

4. Design + Integration
5. Resource Adequacy

TEST FRAMEWORKS



Work through a series of decision-making exercises and scenarios to determine how best to support energy resilience, equity, and economic development.

BUILD TRUST



Improve interregional resource integration and planning. Build a shared understanding of existing and future energy infrastructure capabilities, requirements, and gaps.

Housekeeping + Introductions

Ground Rules



Be Present. Please try not to check your email or cell.



Be Respectful. Respect the timer, additional participants, and the team.



Make Space. Encourage participation of the full group.



Think BIG. Ask clarifying questions and collaborate creatively.

Popcorn Introductions

Instructions

1. Introduce yourself (name, role, org)
2. What do you want to get out of this document?



Executive Summary + User Guide

Executive Summary | Objectives



SUPPORT ALIGNMENT

This framework will help align Governors' policy, regulatory, planning, operational, and legislative capabilities to support energy strategy goals for states. Share information about their organizational protocols (e.g., response plans or communication channels).



MAXIMIZE IMPACT

Improve energy policy decision-making to support energy resilience, equity, and economic development. Prioritize public and private infrastructure investments to support energy security goals for states.



BUILD TRUST

Use this framework to improve interregional resource integration and planning. Build a shared understanding of their existing and future energy infrastructure capabilities, requirements, and gaps.

What “pain points” will this resource address?

Purpose



Understand the different priorities that feed into energy security planning among and between states



Enhance existing energy security processes, plans, and policies in both government and industry



Align energy security policy goals through a more holistic approach to emergency operations planning

Our Stakeholders + Region

- **States.** Statutory and regulatory authorities for rate design, security planning, and consequence management
- **Utilities.** Infrastructure planning and operational requirements for serving customers and maintaining systems
- **Grid Operators.** Oversight of real-time grid performance, energy markets, and regional/interregional planning of infrastructure to support reliability and efficiency

Framework Overview

1

Problem Statement + Gaps

What energy security challenges and gaps do states face?

2

Framework User Guide

Guidance on navigating the resource and applying it to your organization

3

Resources and Stakeholders

What organizations, policies, plans, data, and processes should be considered?

4

Energy Strategy Crosswalk

What is the primary policy driver behind your state energy security strategy? (E.g., diversification of resources, economic development, resilience)

5

Dimensions of Energy Risk

What types of risk guide how you assess and mitigate risk? (e.g., geographic scale, outage duration, affected population, cross-sector impact).

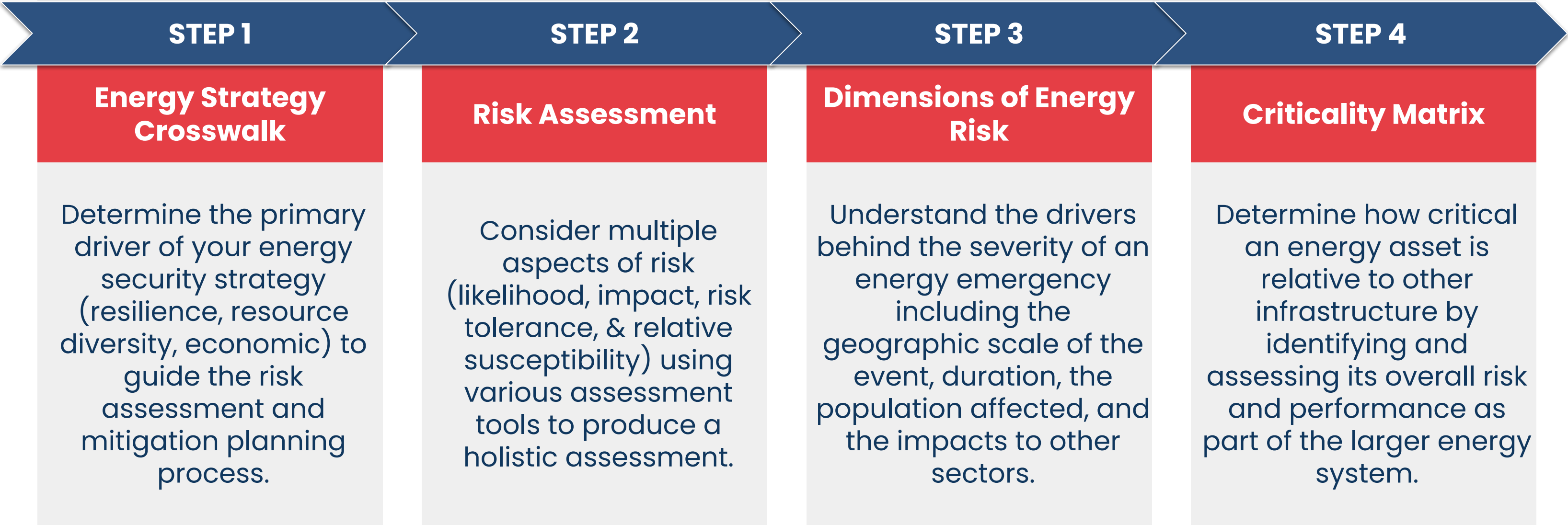
The framework is designed to align with the FEMA Emergency Management Cycle as it pertains to energy security to maximize compatibility with multiple processes.

FEMA Emergency Management Cycle



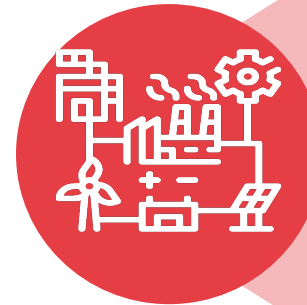
Energy Risk + Criticality

Challenge: There is no uniform method for assessing risk and vulnerabilities of energy infrastructure assets. The Consolidated Risk Spectrum is a multi-step process that integrates several public and private sector methodologies and plans to help evaluate risk and determine the relative criticality of assets and systems.



Step 1: Energy Strategy Crosswalk

**Consolidated
Risk
Spectrum:
What does
your state
prioritize?**



Diversification

Understand the energy resources available to your state and assess their ability to meet your energy security needs. Determine how risk can inform the potential benefits of energy resource diversification.



Economic

The nexus between energy security and economic stability can inform risk mitigation strategies by prioritizing investment in infrastructure and/or specific energy sources to reduce the potential economic impacts of energy emergencies.



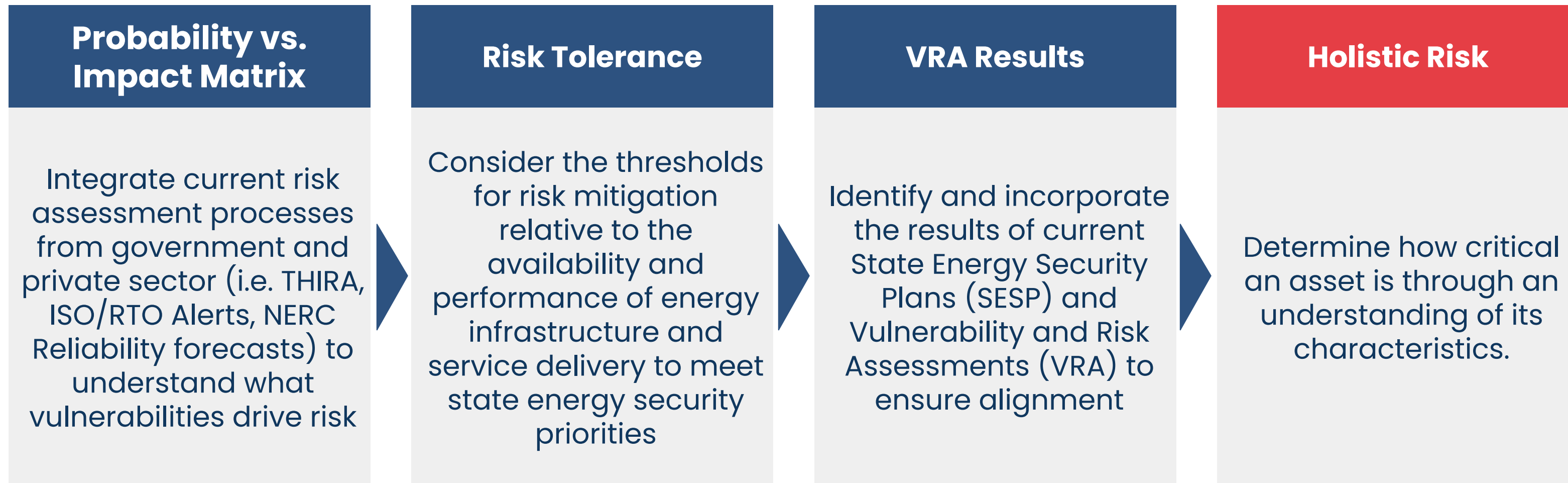
Resilience

Resilience promotes the use of innovative technologies to reduce risk and enhance the security of the system. The identification of facilities and capabilities essential to mitigating human impacts from energy emergencies can inform infrastructure planning and prioritization.

Step 2: Risk Assessment

Builds off existing resources to help users consider multiple aspects of risk:

- Determine what risks to prioritize as a function of likelihood and impact
- Identify the thresholds of acceptable risk to establish mitigation targets
- Integrate current government and private sector plans to maximize compatibility



Step 3: Dimensions of Energy Risk

Dimensions of Energy Risk

Geographic Scale: Risk increases proportionally to the scale and type of infrastructure assets and energy systems impacted in an event.

Duration. Establish thresholds for time-driven disruptions resulting in cascading impacts to people and interdependent systems

Affected Populations. Understand the severity of impact based on tiers: 1) Vulnerable populations, 2) Public Health/Safety, 3) Potential for permanent relocation/ mass migration

Cross Sector Impact: Crosswalk of FEMA Community Lifelines to assess extent of multi-sector impacts



Scenario Example – Cold Snap

Scale	Local T & D	BES	Regional
Duration	<24 hours	24-72 hours	72 + hours
Population	Vulnerable	Health/Safety	Mass Migration
Cross-Sector	1-2 Lifelines	3-4 Lifelines	5+ Lifelines

Risk Level = Medium

Step 4: Criticality Matrix

Susceptibility to Risk

What was the outcome of the risk assessment? An asset with a high likelihood of experiencing a risk that you can't reasonably tolerate should be rated as highly critical.

Risk Assessment Output

Dimensions of Energy Risk

Risk Drivers

What is the primary aspect of risk? Does the asset serve a densely populated area? Is it an important regional asset? Would it take a long time to repair or replace?

What makes
an asset
"critical?"

Historical Performance

What is this asset's historical performance? What stage of lifecycle is this asset in? Think about what risks an aged asset poses to system operations.

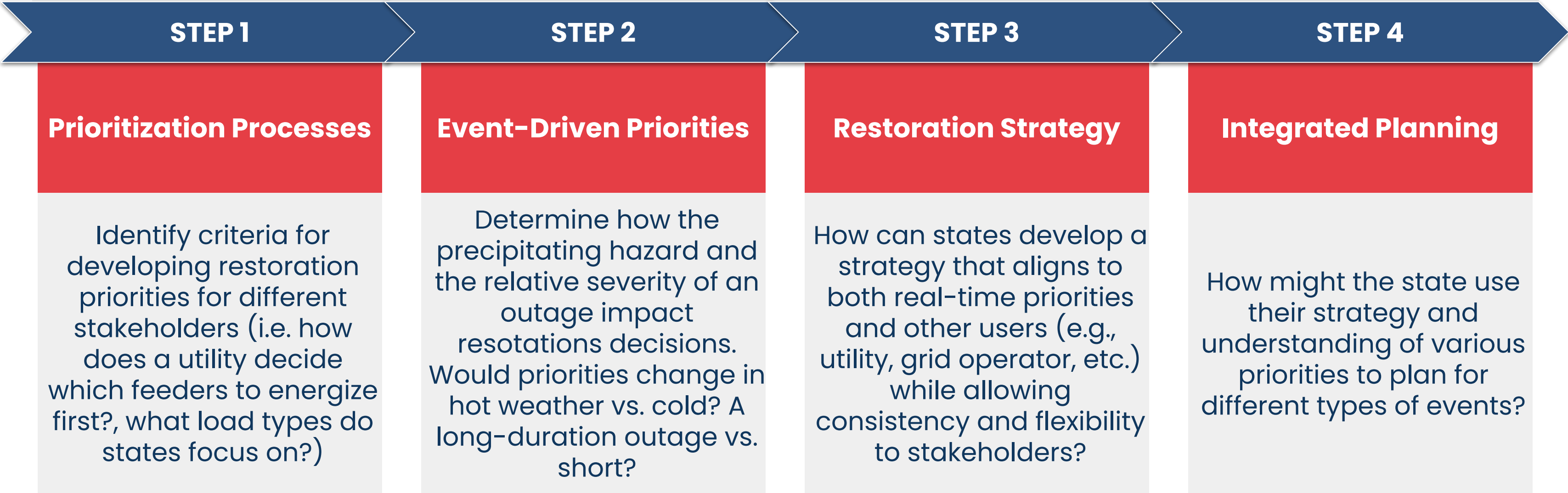
Single Point of Failure

Can the functions on this asset be supplemented or replaced by another resource, asset, or capability with minimal impact?

Redundancy

Rate of Failure

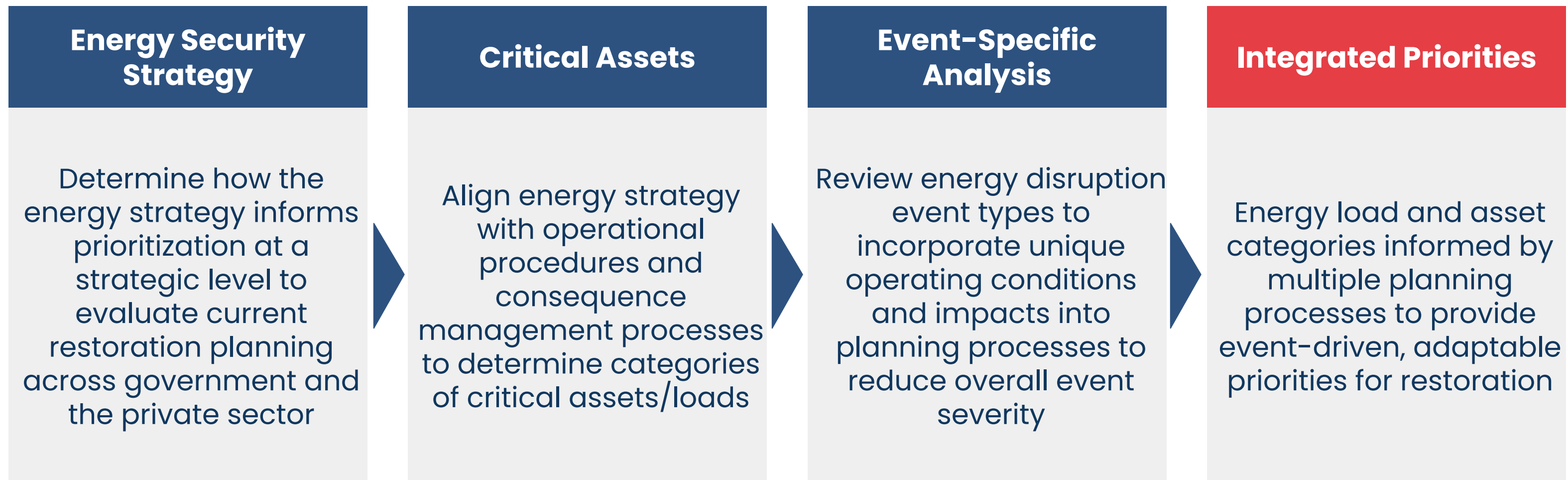
States, RTOs, and utilities use emergency response processes to set restoration priorities, which can adapt to the type or severity of an outage. While organizations often set internal restoration priorities, external variables may impact their plans including input from government officials, customers, and changing conditions. This framework will share insights for building a common prioritization method, incorporating both successful resource planning and emergency response.



Step 1: Holistic Risk Integration

The outputs of the risk assessment and criticality matrix will inform the restoration process to ensure priorities maximize risk reduction benefits.

- Understand risk and criticality as drivers for decision-making during event response
- Incorporate unique impacts of different events to adapt processes for changing conditions



Step 2: Variable Crosswalk

Energy Strategy Selection. How does the state strategy affect identification and selection of energy loads for restoration?

Asset/Load Categorization. Which critical assets are essential to maintaining functionality/operability of the identified priorities?

Risk Dimensions. Considerations for the geographic size, anticipated duration, impacted populations and cross-sector impacts of the event on identified assets.

Event-Driven. How does the precipitating event support the last tier of prioritization?

Step 3: Scenario Development



Strategy	Economic	Load Identificaiton	Asset Types	Risk Dimensions	Impact Assessment
	• Communications for support of financial sector and connectivity • Transportation for movement of goods and availability of services		• 911/PSAP • LTE switching • Fiber relay facilities • Gas stations and fueling		• Regional outage • Expected duration 24-48 hours • Vulnerable populations • 1-2 Lifelines



Updated Priorities
• Warming centers for displaced population • Home heating (electricity and natural gas) • Emergency medical dispatch • Water pumping/treatment freeze offs

Other Project Concepts | Next Steps

Interdependency Planning

1. **Identify + prioritize critical assets** – how do these change depending on scenario, comfortability with risk, and other dimensions of risk?
2. **Share best practices** – how to develop interdependency mapping methodology
3. **Recommendations for how to develop resilience requirements** – Analyze existing resources to generate a list of best practices.

Design + Integration

1. **Paint a picture of existing standards** – How are infrastructure design criteria aligned or not?
2. **Highlight economic/ policy factors may influence design** – Consider how rate design will affect design criteria. Consider real-world regulations and authorities (e.g. NESC Codes, USDA Rural Utilities Service).

Resource Adequacy

1. **Better understand how capacity is able to support the critical energy needs of identified state load priority** – use of capacity markets to ensure power is available when needed.
2. **Examine the ways in which transmission capacity and interregional transfers align with in-state capacity resources** – Improving connections and conversations around interregional transfers.
3. **Help states build strategy** – After understanding the mechanics of load priority and what they can do to optimize capacity, states may use the dimensions of risk to build their future state strategy.

Next Steps + Action Items

Next Steps

Events + Tasks

1. December Advisory Group: 5 December 2024; 1-2PM EST

Requests for You

1. Who from your organization should be included in future meetings?
2. Please read the draft prior to the Workshop.

