Advisory Group Meeting

MGA Workshop
Summary, Outcomes, & Next Steps

11 July 2024

Agenda

Workshop Summary

Workshop Objectives

CONVERGE STRATEGIES

GAP ANALYSIS

Identify and articulate the areas of need within each of the framework concepts.

PROCESS ALIGNMENT

Find opportunities to reduce redundancies and maximize coordination.

FRAMEWORK DEVELOPMENT

Generate ideas and concepts to coordinate and manage stakeholders and resources.

CONVERGE STRATEGIES

Organizations Engaged & Represented | Overall Effort

STATES

FEDERAL

FEMA

INDUSTRY

MISO

pjm

AMERICAN ELECTRIC POWER

evergy

SPP Southwest Power Pool

OTTER TAIL POWER COMPANY

Workshop Agenda

CONVERGE STRATEGIES

Day 1 | Monday June 17	
Time	**Description**
1:00 - 1:15 PM	Welcome/ Introductions
1:15 - 2:00 PM	Program Timeline
2:00 - 2:30 PM	Guest Speaker
2:30 - 3:30 PM	Panel Discussion
3:30 - 3:45 PM	Break
3:45 - 5:15 PM	Concept Breakout Groups Discussion 1. Restoration Priorities 2. Energy Risk and Criticality
5:15 - 5:30 PM	Closing Remarks
5:30 PM	Evening Reception

Day 2 | Tuesday June 18	
Time	**Description**
8:00 AM	Continental Breakfast Available
8:30 - 8:45 AM	Welcome/ Day 1 Recap
8:45 - 9:45 AM	Plenary Concept Area Discussion
9:45 - 10:15 AM	Keynote Speaker
10:15 - 10:30 AM	Break
10:30 AM - 12:00 PM	Concept Breakout Groups Discussion 1. Resource Adequacy 2. Design and Integration
12:00 - 12:30 PM	Closing Remarks

Objectives | Workshop + Effort

Workshop - Information Sharing

Program Overview. Learn more about the project background, efforts, and next steps, including Advisory Group participation.

Speakers and Panel. Gain new perspectives on pressing contemporary issues in the Midwestern energy space.

Breakout Group Exercise. Build shared understanding of concept area topics by sharing knowledge and experience with other subject matter experts through small group discussion.

Future - Collaboration

Advisory Group. Identify specific next steps, roles and responsibilities, and timelines, including engaging between the local, regional, state, and federal levels.

Framework. Socialize work among the entire group and gather input.

Framework Overview

Framework Development Plan

Restoration Priorities

Summer 2024

Energy Risk and Criticality

Summer 2024

Interdependency Planning

Fall 2024

Resource Adequacy

Winter 2025

Design & Integration

Winter 2025

Note: The MGA project will include frameworks for all five topics. At the workshop, participants voted to build out the frameworks for three blue topics first. Full definitions for all five framework concept can be found in ***Appendix A.***

Restoration Priorities

Summary

Restoration priorities determine how, when, and to whom energy will be restored, considering available emergency response resources and risk analysis tools. States, RTOs, and utilities have different prioritization and response plans, some of which are dependent on one another. This framework will share insights for building a common prioritization method, incorporating both successful resource planning and emergency response.

Gap 1

Unknown Unknowns

Organizations may not be aware of how other restoration priorities and plans affect them. The framework will:

1. Recommend what to incorporate into asset/load criticality categories (e.g., public safety, medical)
2. Discuss how criticality affects load shedding and restoration.
3. Give considerations on what impact types (economic, human, etc.) may affect load prioritization category.

Gap 2

No Standard for Determining Restoration Priorities

Even within the same organization, priority levels change depending on circumstances. The framework will:

1. Suggest processes for identifying available options, equipment, and gaps.
2. Map out steps for responding to different types of outages (e.g., range of severity and causes).

Best Practices/ Resources

1. Utility and ISO/RTO processes for forced load shedding and identification of critical distribution feeders and transmission corridors.
2. Emergency Operations Plans and FEMA Community Lifeline models for identifying critical infrastructure and assets.
3. State Energy Security Plans that identify priority loads and assets.

Next Steps

1. Analyze existing methods to identify/develop a common set of variables. This analysis will help users determine priorities prior before an event takes place.
2. Leverage industry and government processes and establish energy emergency “phases” or “THREATCON” levels. These may aid in rapid decision-making around prioritization.

Interdependency Planning

Summary

Interdependency planning helps regions develop robust emergency response plans. Energy is critical to other critical lifelines (e.g., gas or communications). Understanding how these sectors interact with one another is key to achieving regional resilience. This framework will help users establish resilience requirements within their organization and suggest methods for interdependency mapping with external parties.

Gap 1

Visibility

There is a lack of shared knowledge related to critical facility and generation asset reliability. The framework will suggest how to:

1. Use systemic interdependencies to mitigate risk & balance fuel assurance and restoration prioritization issues.
2. Navigate how utilities, states, & regulatory entities view emergency (response) efforts & their roles during emergencies.

Gap 2

Many Dependencies Exist, Making Prioritization Efforts Difficult to Standardize

At the workshop, stakeholders brought up many dependencies, including gas/electric; propane, diesel, & gas fuels; telecommunications & realtime data; water/wastewater; and transportation. The framework will take into account different nuances and will:

1. Consider how unique risks affect the ability to manage the energy system.
2. Focus on energy security.

Best Practices/ Resources

1. Texas bill S.B. 3: Designates critical facilities and set weatherization requirements for facilities, implemented after Winter Storm Uri
2. Federal Power Act (FPA) Section 202(c): Gives DOE authority to control energy facilities and generation during emergencies

Next Steps

1. Provide guidelines to develop a comprehensive interdependency mapping methodology that assists in the identification and prioritization of critical assets.
2. Analyze existing resources to generate a list of best practices that empower stakeholders to establish resilience requirements.

Energy Risk & Criticality

Summary

Energy risk is the potential for energy infrastructure to be impacted by natural and man-made hazards. Its criticality is determined by its susceptibility to hazards, impacts of its disruption on connected systems, presence or lack of redundancy, and the asset's historical performance. The framework will suggest how organizations can develop a shared, standardized risk assessment methods to address system-level risk.

Gap 1

No Single Method for Assessing Risk

Different organizations calculate risk differently. The framework will:

1. Recommend ways organizations can work together to create a standardized risk assessment process.
2. Explain how organizations can define risk for their own critical infrastructure.
3. Share ideas on what organizations can do after assessing critical infrastructure risk.

Gap 2

Uncertainty of Service for Critical Functions

This gap leaves many questions to be answered. The framework will share steps for how organizations can:

1. Understand the differences between system-level vs individual risks.
2. Navigate various risk tolerances across multiple entities & assets.
3. Improve outdated methods of identifying and mitigating risk, esp. regarding interregional connections.

Best Practices/ Resources

1. National Institute of Standards and Technology (NIST) Cybersecurity Framework
2. Organizational frameworks: NERC CIP, FEMA THIRA

Next Steps

1. Review existing risk resources such as VRAs, THIRAs, and utility processes for to create a consolidated risk "spectrum" that captures ranges of risk based on asset types and critical functions.
2. Develop impact "tiers" to better quantify and understand the impacts of events relative to the number of critical assets impacted.

Resource Adequacy

Summary

Resource adequacy is the mix of available generation assets (e.g., wind power) that increases grid reliability, especially during stress events. This can be based on energy resilience priorities and the generation capacities. The framework will create a shared definition and mechanism for understanding resource needs (e.g. increasing regional transfers vs. building new power plant) to meet changing load profiles.

Gap 1

Need for Common Approaches

Resource adequacy can be a function of availability vs. performance (e.g.,. not requiring use of certain energy types, just meeting capacity needs appropriately). The framework will:

1. Help users determine resource needs & attributes between utilities, RTOs, & state levels.
2. Share methods of incentivizing the maintenance or replacement of certain assets.

Gap 2

Transmission

RTOS need to have conversations about resource adequacy and benefits of interregional transfers. The framework will include guidance on the following:

1. How to ensure there is enough generation capacity and mix in an area to meet load needs.
2. Steps for eliminating generator queue issues through media messaging & upgrading existing assets instead of building new ones.

Best Practices/ Resources

1. Use of capacity markets to ensure power is available when needed.
2. Improving connections and conversations around interregional transfers.

Next Steps

1. Outline concepts related to generation resource attributes to better understand how capacity is able to support the critical energy needs of identified state load priorities and how they are impacted by different types of stress events.
2. Examine the ways in which transmission capacity and interregional transfers align with in-state capacity resources.

Design & Integration

Summary

Design & integration is the ability of the infrastructure planning process to meet or closely align both state needs, regulations, and utility and ISO/RTO priorities. These shape properly scaled T&D infrastructure design and performance requirements. The framework will provide guidelines to build uniform infrastructure design criteria that considers multiple disparate organizational priorities.

Gap 1

No Uniform Design Guidelines Currently Exist

Design criteria is determined by resource attributes, independencies, & energy risk levels. The framework will outline:

1. How design affects resilience (or vice versa) will be relative to a specific state's circumstances (i.e. system, location, & utility company).
2. Ways to form design criteria considering: policy, technical, economic, & a combination of all three.

Best Practices/ Resources

1. Consider how rate design will affect design criteria
2. Consider real-world regulations and authorities (e.g. NESC Codes, USDA Rural Utilities Service)

Next Steps

1. Analyze existing infrastructure design criteria and regulations for States, ISO/ RTOs, and utilities to identify areas of alignment or contradiction
2. Develop a framework with policy, technical, and economic consideration for design requirements

Next Steps

Effort Milestones | Past, Present, + Future

	Data Collection & Interviews	Convene Advisory Group	Project Workshop	Draft Framework	Framework Publication
	Winter 2024	*Spring 2024*	*June 2024*	*Fall 2024*	*Summer 2025*
Objectives	Conduct a landscape analysis of energy security and emergency operations programs.	Scope and design framework concepts with input from the Advisory Group	Facilitate stakeholder conversations and uncover priorities.	Develop first draft of framework using outputs from workshop and Advisory Group meetings.	Incorporate feedback from initial framework draft and subsequent Advisory Group meetings.
Outputs	• Advisory Group List • Report about state energy resilience practices	• 5 framework concepts to discuss at the workshop	• Post-workshop report, including priorities for how to develop framework product	• Initial framework draft	• Finalized Framework

Next Steps

CONVERGE STRATEGIES

From the MGA Team

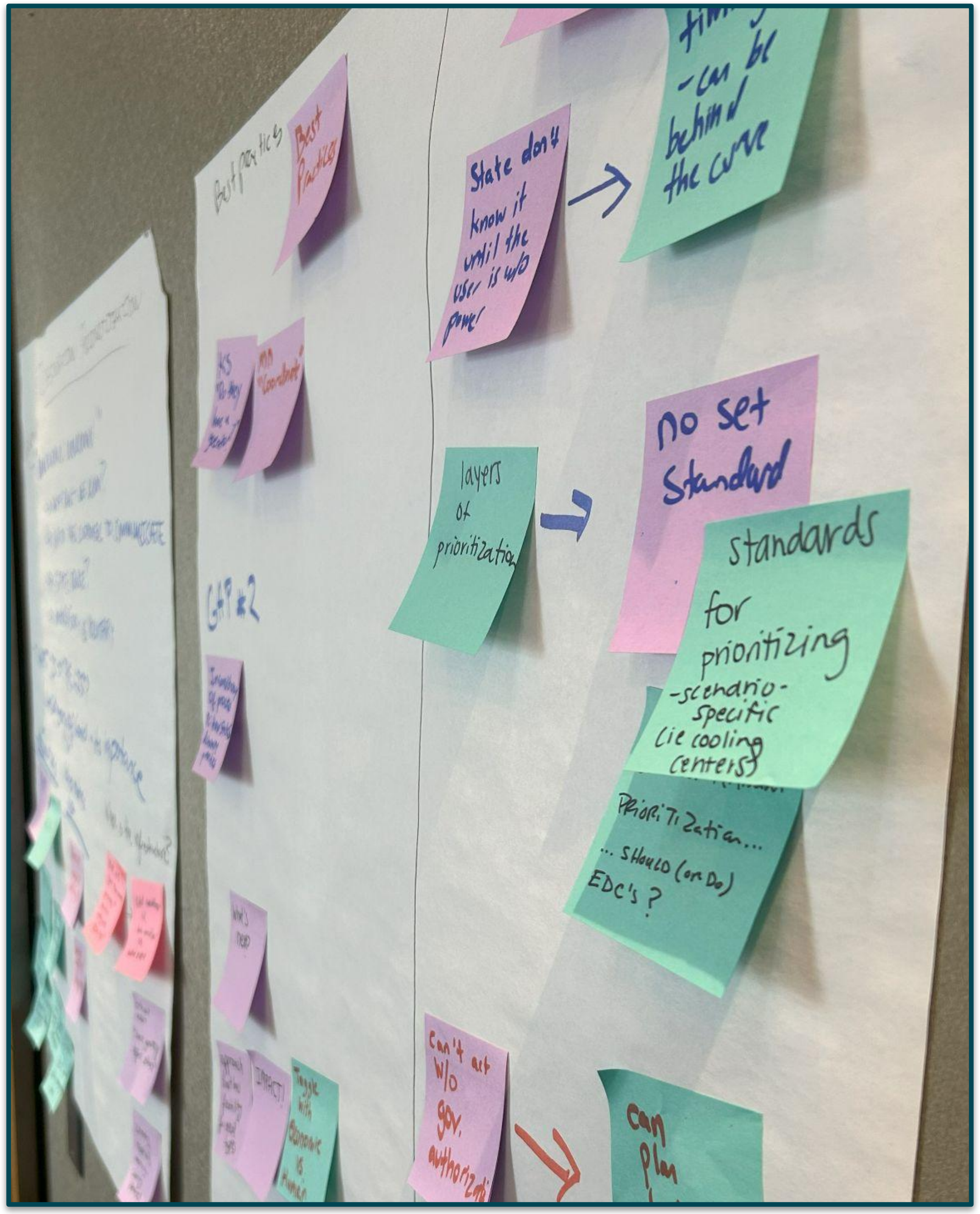
1. Follow up information from the workshop
   - Survey
   - Advisory Group Meeting Slides

Events + Tasks

1. Today- Monthly Advisory Group Meeting
2. 8 August- Monthly Advisory Group Meeting to review outline for selected frameworks

Requests for You

1. You can drive communication and next steps. Do you want to continue the discussions from the workshop?
2. Who from your organization should be included in future meetings?



Contact Information

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CONVERGE STRATEGIES

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Appendix A
Framework Presentation Slides

Definition | Restoration Priorities

CONVERGE STRATEGIES

Restoration Priorities

Determining **how, when, and to whom energy will be restored,** when considering

- Available emergency response resources
- Risk analysis tools

Framework | Restoration Priorities

Restoration Priorities

1 Needs

- Review how state agencies, utilities, and ISOs/RTOs share and coordinate response resources and efforts.
- Identify best practices in pre-planned and real-time integrated energy emergency response.
- Identify and align disparate energy restoration prioritization assessments across entities.

2 Examples

- Utility may prioritize restoring a critical electric node rather than an asset serving a certain area of the city, which the state has given restoration priority.
- MISO Power System Restoration Plan.
- Indiana Emergency Operations Plan .

3 Challenges

- How to better understand energy response needs and coordination.
- Achieving alignment with existing multi-sector emergency operations plans (EOPs).

Definition | Energy Risk and Criticality

CONVERGE STRATEGIES

Energy Risk

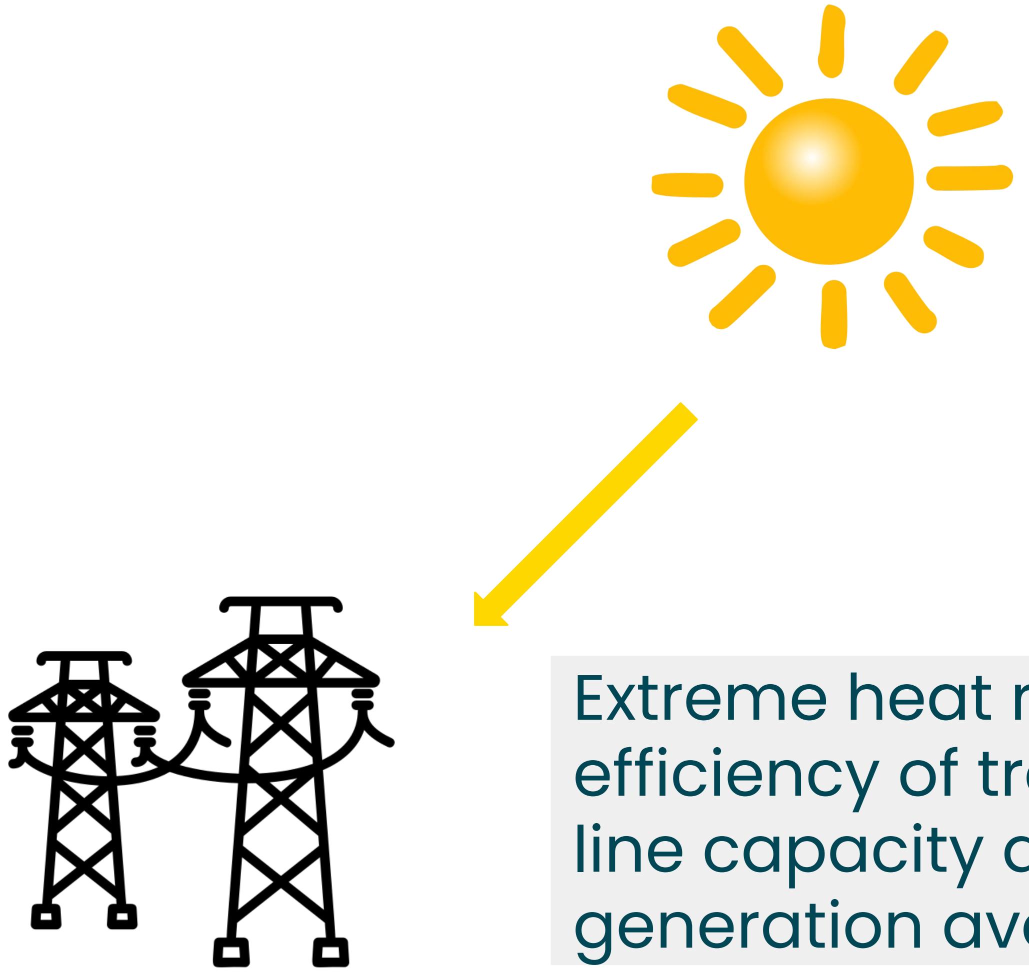
The **potential for energy infrastructure to be impacted by natural and man-made hazards,** as determined through:

- Comprehensive analysis of Interdependencies
- Threat and hazard identification
- Consequences of asset loss.

Criticality

The **criticality of an energy infrastructure asset** is determined by:

- Its relative susceptibility to hazards
- The impacts of its disruption on connected systems
- The presence or lack of redundancy
- The asset's historical performance



Extreme heat reduces efficiency of transmission line capacity and impacts generation availability

Homes, businesses, and critical infrastructure potentially experience loss of power or reliance on backup generators

Framework | Energy Risk and Criticality

Energy Risk and Criticality

1 Questions

- What processes exist for determining how "critical" an energy infrastructure asset is? How do these processes vary among state agencies, utilities, and ISOs/RTOs?
- How are emergency response needs and resources determined and communicated?
- How does risk inform planning and investment?

2 Components

- How states, utilities, and ISOs/RTOs determine risk
- Prioritization of consequences: economic losses, loss of service/infrastructure, and threats to human health and safety
- Understanding how interdepencies in a given area can raise risk levels

3 Challenges

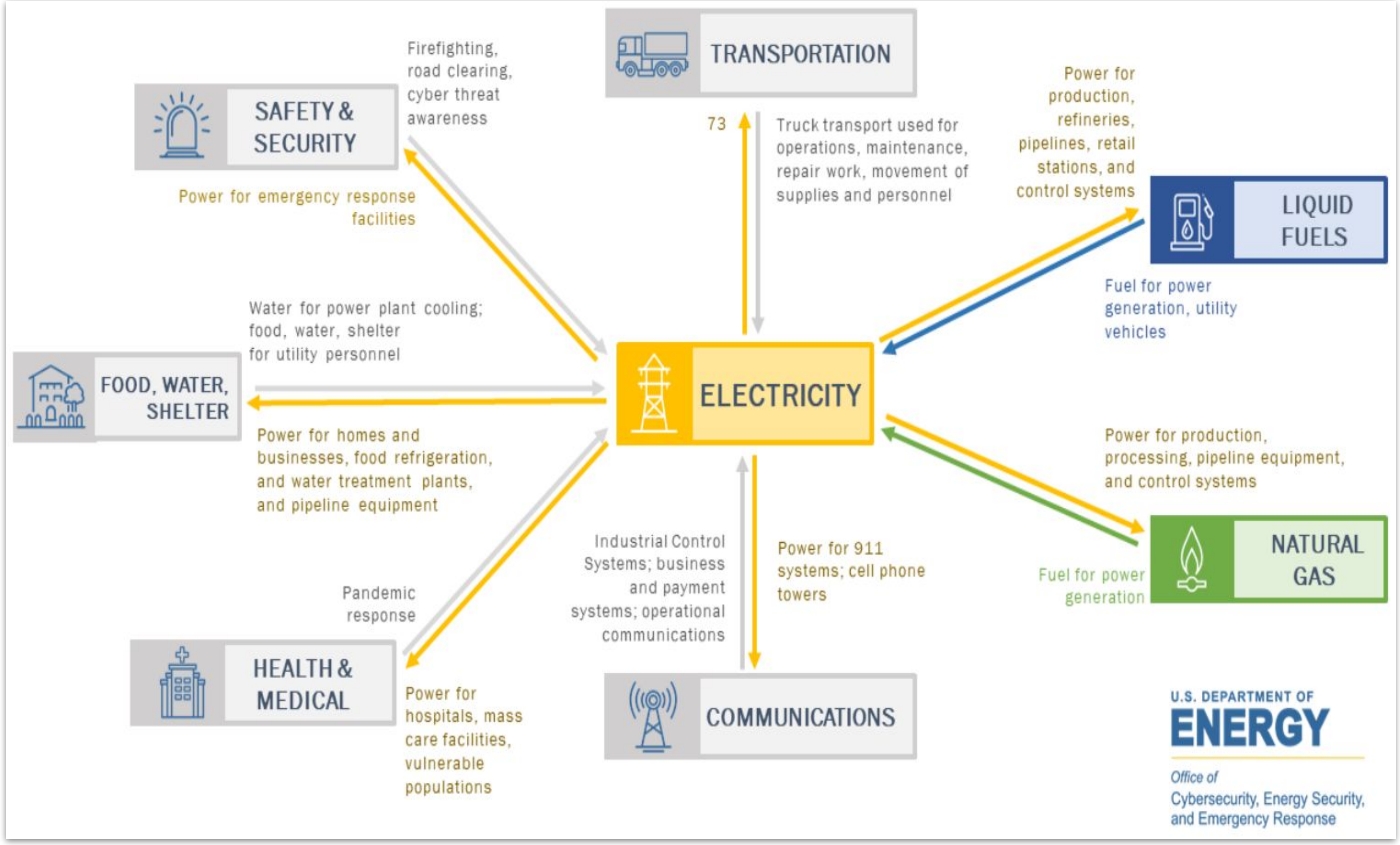
- Determining priorities: understanding how to identify and integrate multiple process to adapt planning, investment, and response to energy emergencies

Definition | Interdependency Planning

Interdependency Planning

Leaders develop more robust emergency response plans **by understanding the relationship between the energy sector and other sectors (e.g., gas, communications, etc.)**. Successful plans:

- Identify how risk impacts infrastructure different.
- Build an understanding of the cascading effects of disruptions to the energy infrastructure.



Framework | Interdependency Planning

Interdependency Planning

1 Requirements

- Identify areas of need for cross-sector coordination for emergency response.
- Identify areas of alignment for mitigating risk in cross-sector infrastructure planning.

2 Examples

- Determine how the consequences of a power outage can impact response efforts and priorities.

3 Challenges

- Cross-sector interdependency planning isn't formalized.
- Need to understand how energy sector risk can cause cascading impacts in other sectors.
- Reconciling relationship between restoration priorities, interdependencies, and response efforts.

Definition | Resource Adequacy

CONVERGE STRATEGIES

Resource

The mix of available generation assets (e.g., wind power or nuclear energy) **that increase the grid's reliability,** in accordance with energy resilience priorities

Adequacy

The ability of generation capacities to meet load demand during stress events. These are driven by:

- Uniform needs assessments.
- Procedural alignment between states, utilities, and ISOs/RTOs.

States and utilities have differing processes for determining generation needs.

States → Energy policies that align with federal priorities

Utilities, ISOs, & RTOs → Integrated Resource and Long-term Transmission Plans

These processes may drive diverging goals

Ex: State energy policies dictate keeping a coal plant online for emergency back-up that the utility planned to retire.

Framework | Resource Adequacy

CONVERGE STRATEGIES

Resource Adequacy

1 Capacity

- How much capacity is needed and how is this informed by other energy planning processes?
- How to properly account for variable energy resources?
- What is the right balance for generation assets versus transmission and distribution enhancements?

2 Examples

- Xcel Energy (MN) plans to install small combustion turbines, utility-scale solar+storage, and improve transmission lines instead of building a natural gas combined cycle plant. [1]
- MISO Update to MOPSC acknowledged need for improving regional planning transparency.[2]

3 Challenges

- Significant variance in how states identify and communicate their resource adequacy needs
- How to reconcile interstate resource needs (like a transmission line) with intra-state energy planning priorities

Definition | Design and Integration

CONVERGE STRATEGIES

Design

The concepts set forth by states, utilities, and ISOs/RTOs **that shape** specific, properly scaled T&D infrastructure design and performance requirements.

Integration

The ability of the infrastructure planning process **to meet or closely align** both state needs, regulations, and utility and ISO/RTO priorities.

Framework | Design and Integration

Design and Integration

1 Requirements

- Determine which planning considerations should be included and prioritized.
- Decide how to mitigate risks from gaps in planning processes or requirements.
- Processes for understanding how utility plans can address state needs and risks.

2 Examples

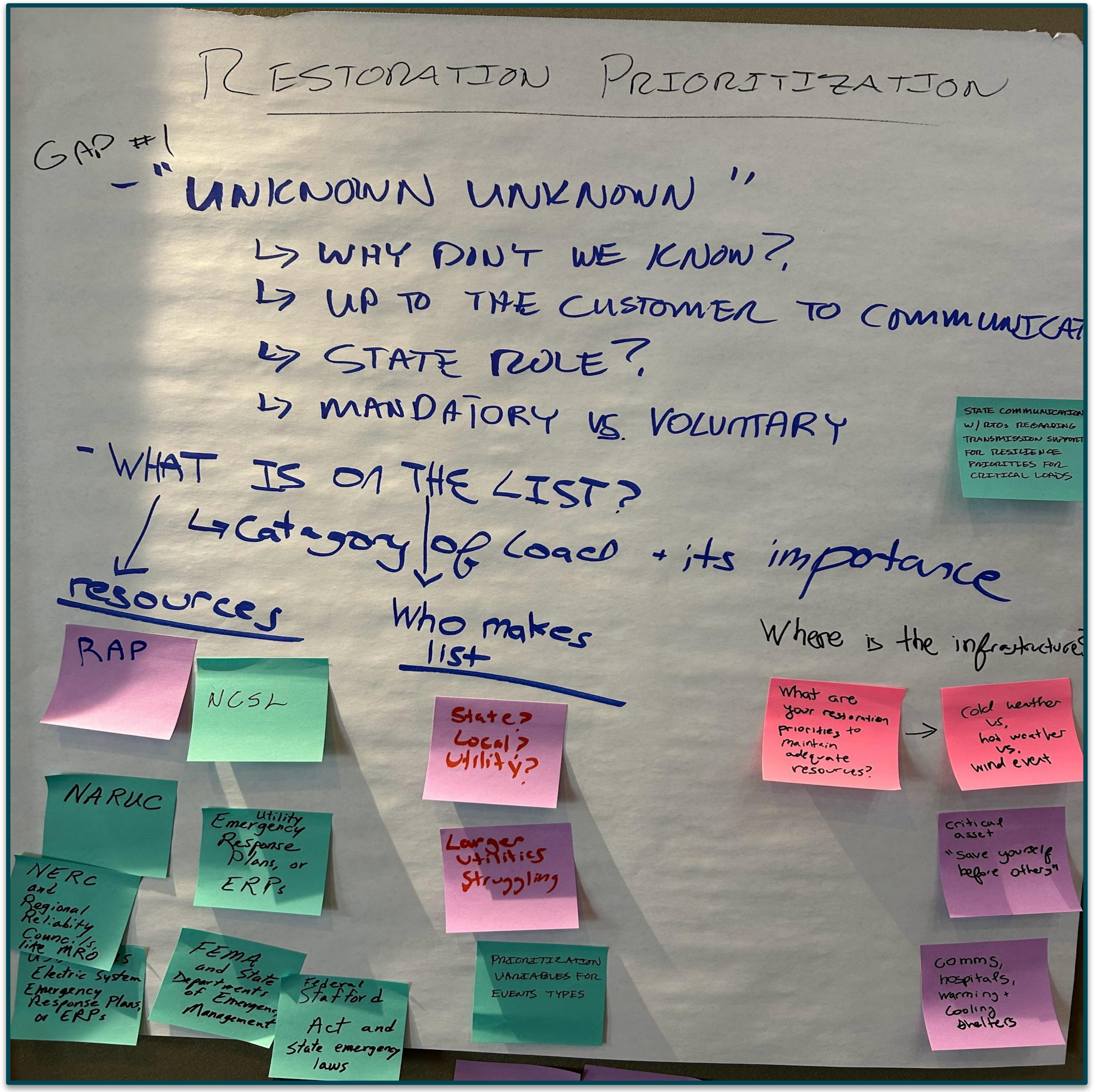
- State Hazard Mitigation Plans.

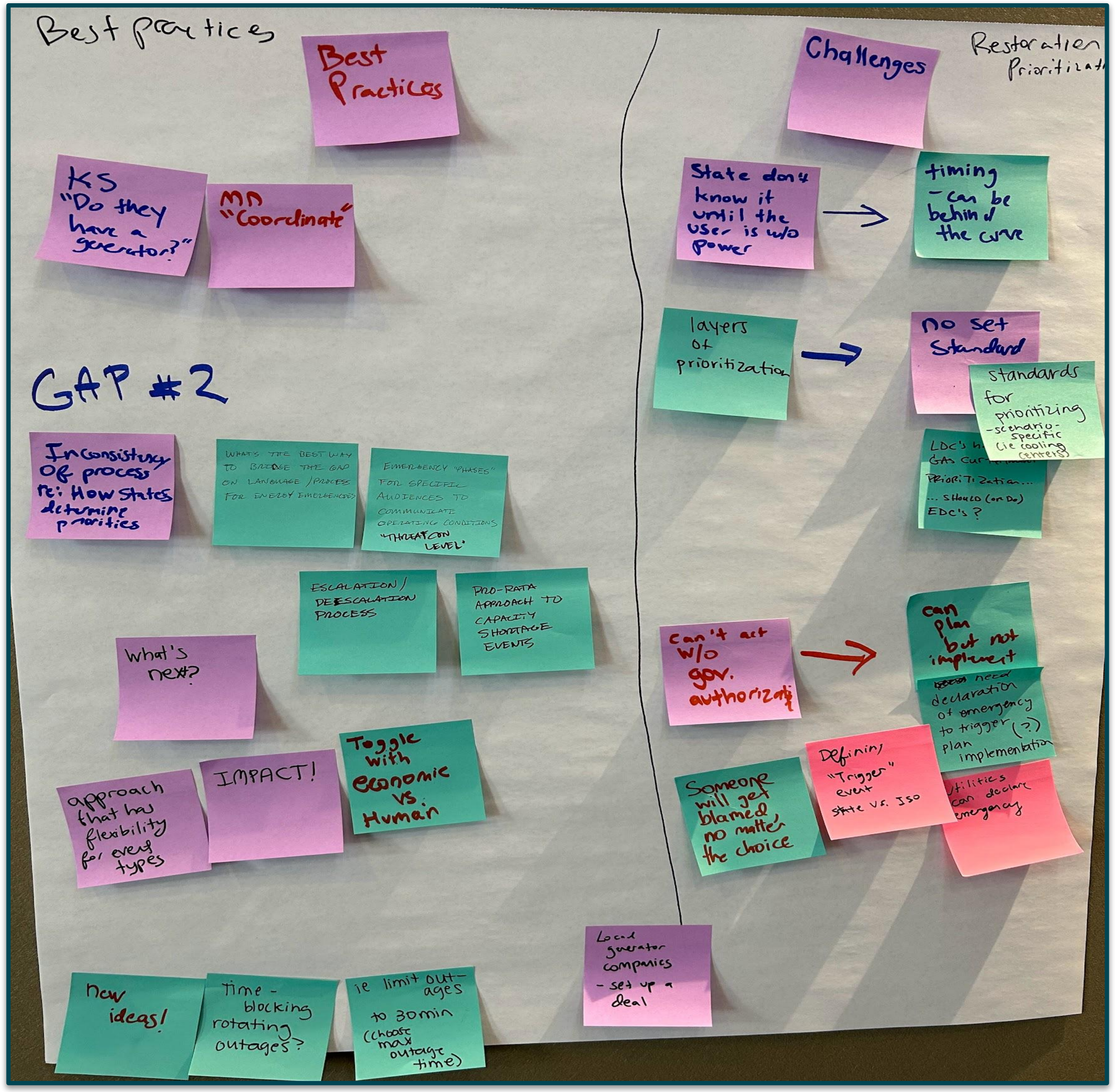
3 Challenges

- Understanding how states and utilities adapt and communicate infrastructure planning in a risk-driven approach to investment.
- Align design processes for infrastructure projects that cross state boundaries and have differing priorities.

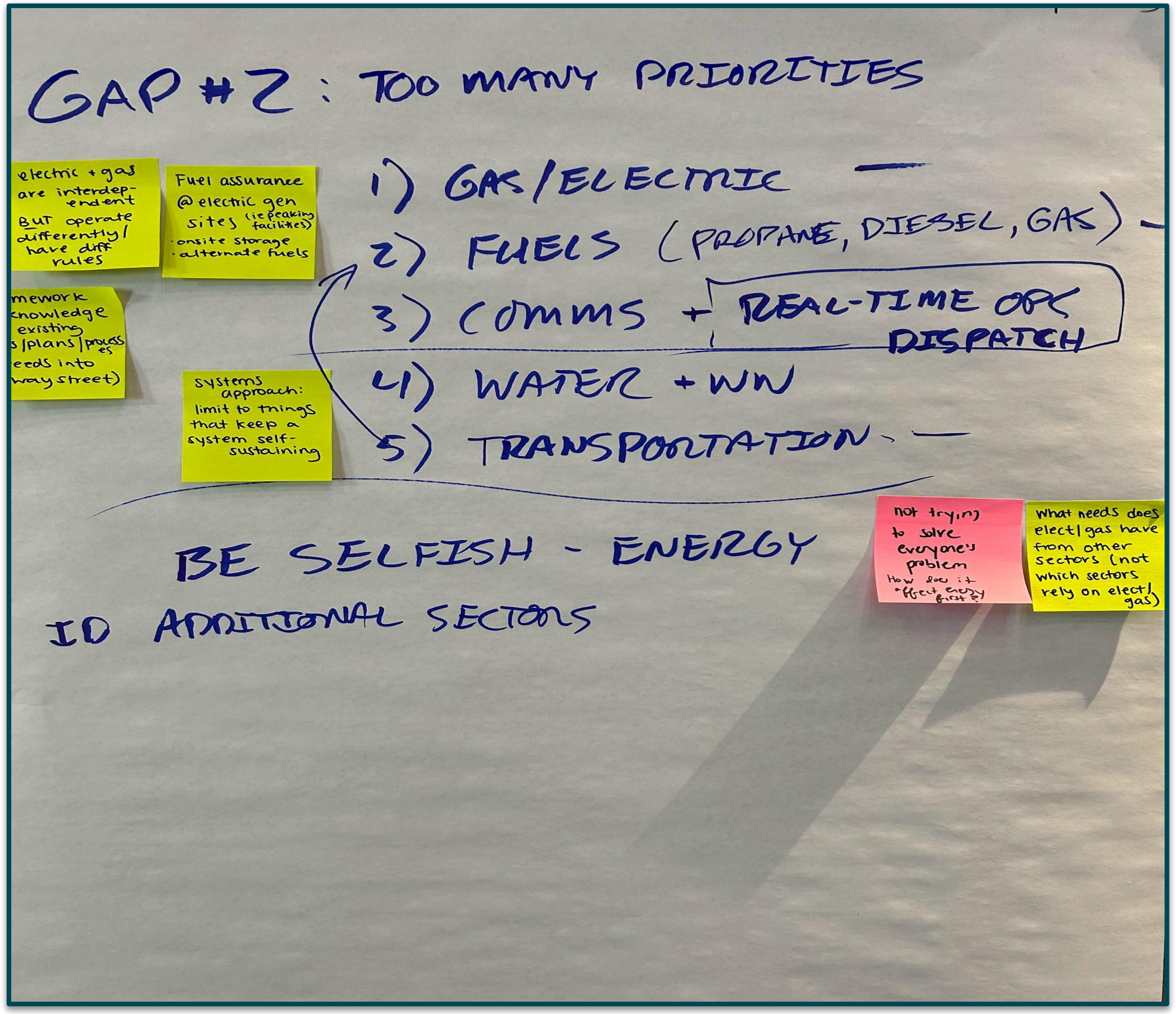
Appendix B
Breakout Group Flip Charts

Restoration Priorities

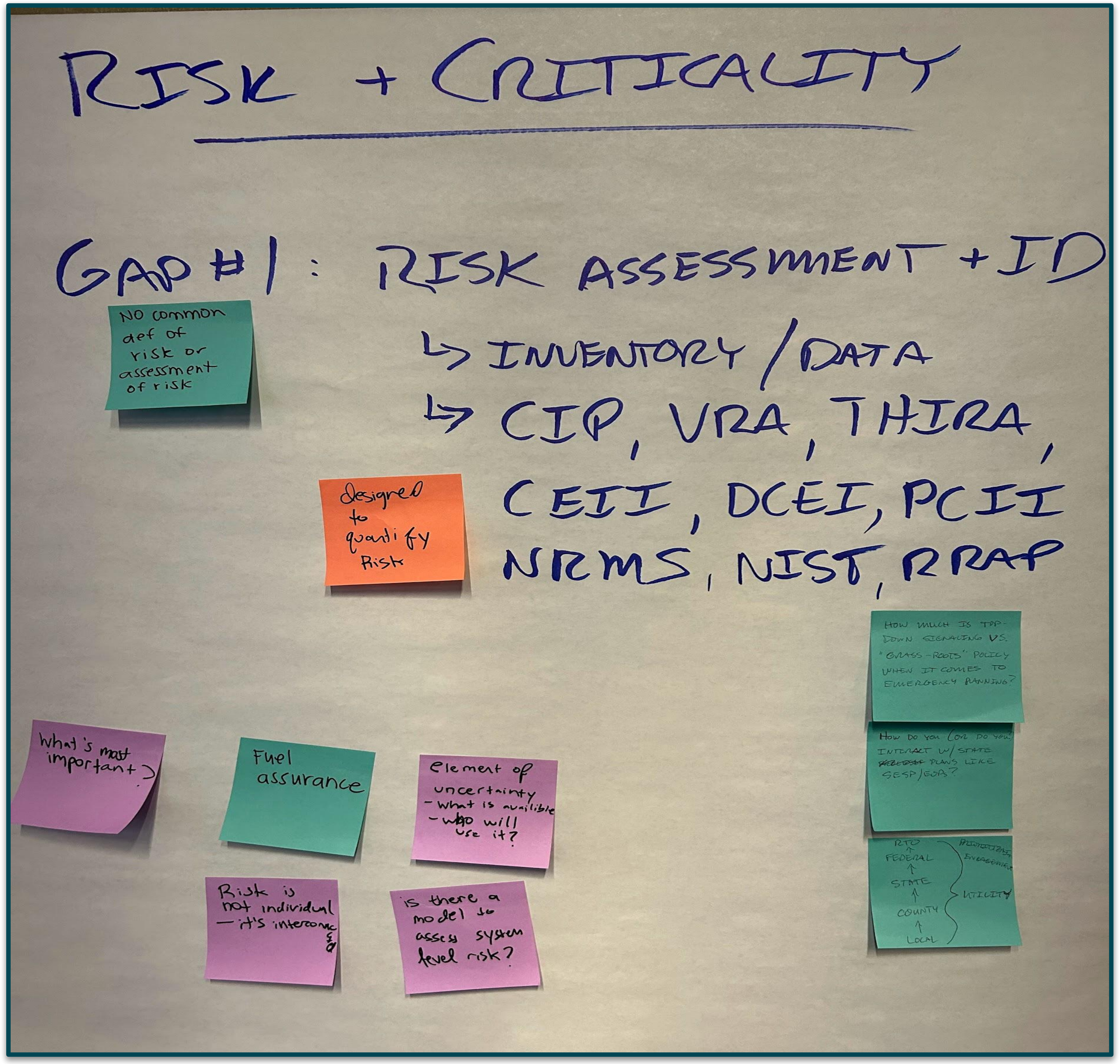


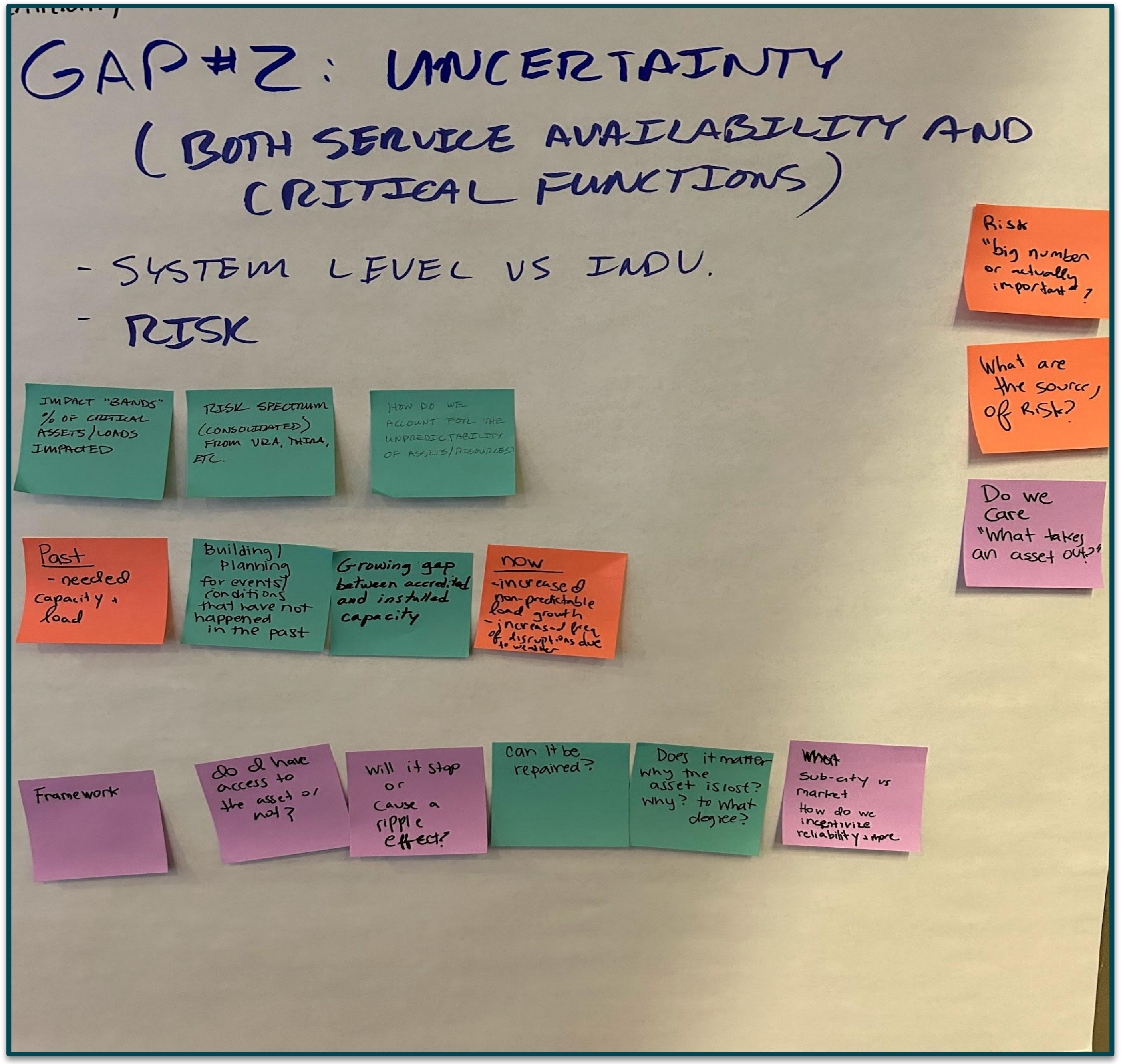


Interdependency Planning

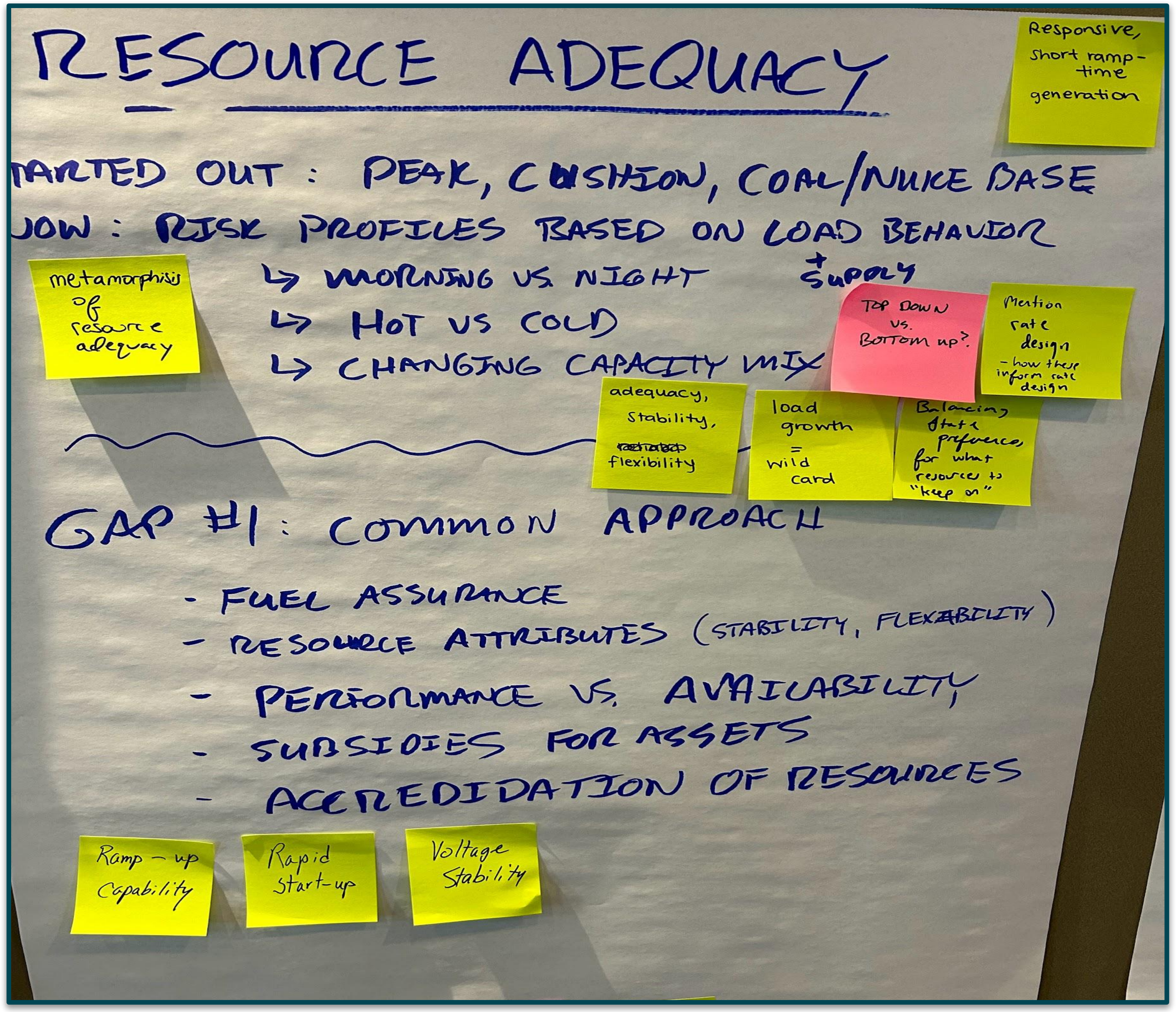


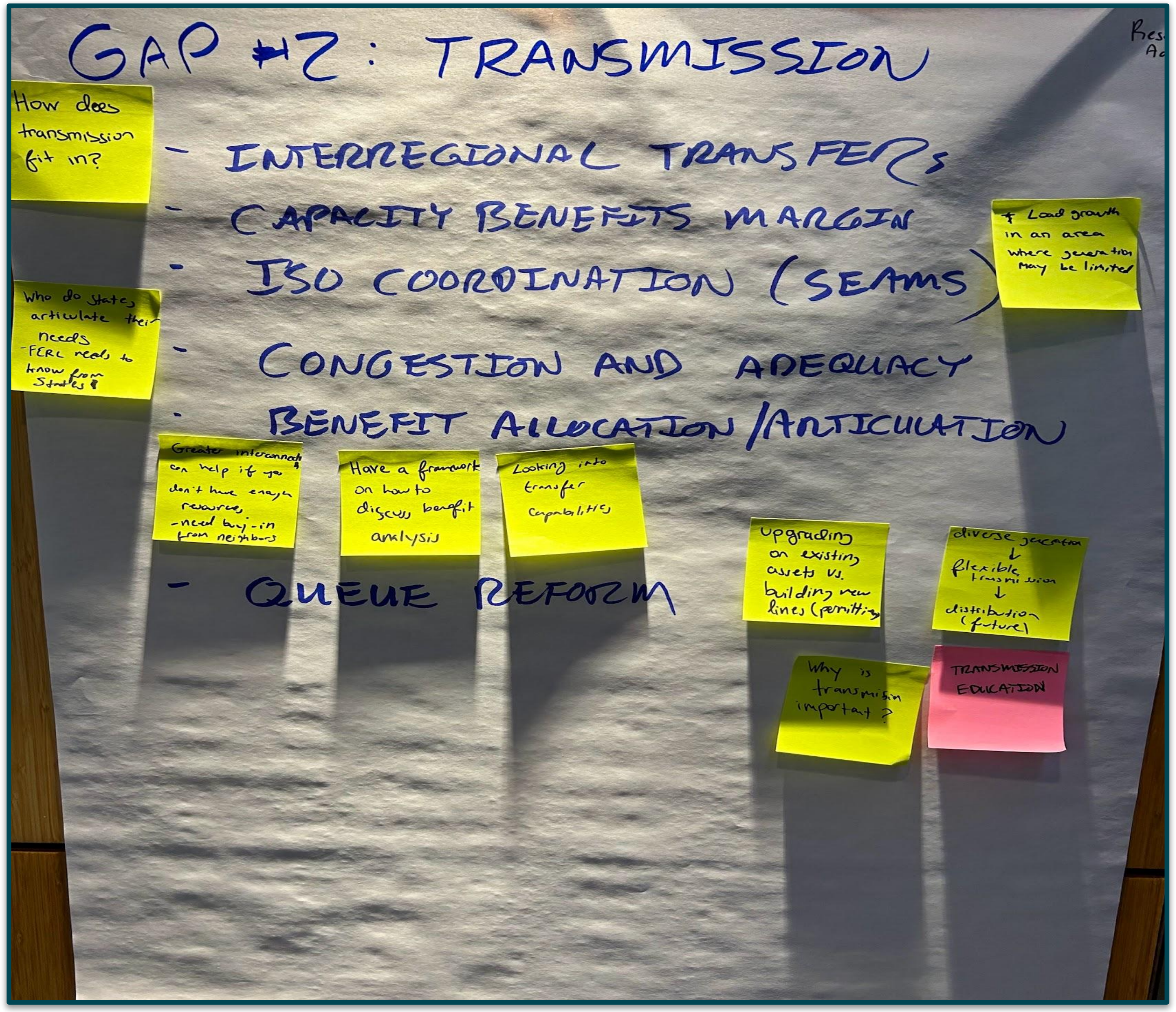
Energy Risk & Criticality



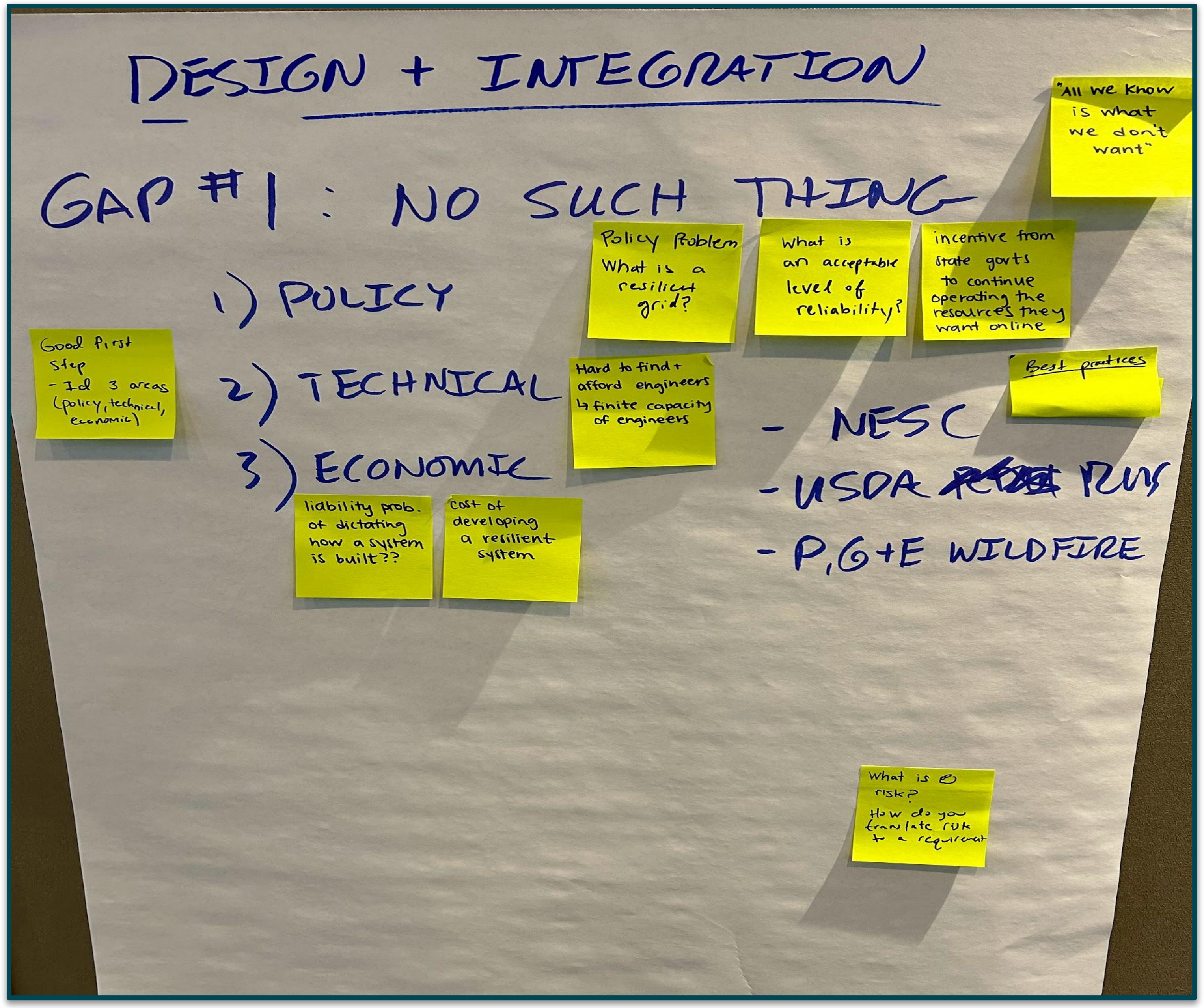


Resource Adequacy





Design and Integration



Appendix C
Panel + Speaker Highlights

Speaker Highlights | Panel

Communication Best Practices

- With Public: Avoiding jargon when issuing energy alerts.
- With States: Need for state to communicate energy needs and risks.

Future Opportunities

- Managing load growth and customer costs.
- Improve interstate infrastructure planning processes with RTOs.
- Continue to gain an understanding of how single vs multi/interstate jurisdiction operators differ.

Pictured | Panelists, Tim Burdis (PJM), Jillian Janik (SPP), and Mike Deising (MISO). Thank you to Chairman Doug Scott (IL Commerce Commission) for moderating the panel.

Speaker Highlights | Carrie Zalewski & Megan Levy

Ms. Carrie Zalewski

Transmission & Electricity Markets

- How might we use market indicators to understand capacity requirements.
- Discussion on increasing reliability and removing barriers to building power generation.
- Develop energy policy that supports the goals of a variety of states.

Megan Levy

SLTT Program

- Ability of DOE to support state initiatives and emergency planning efforts.
- Importance of inter- and intrastate risk mitigation and regional coordination.