Activity: Resilience Solution Prioritization

Goal of this Activity

In this activity, you will prioritize power sector resilience solutions, identified in previous activities, by their impact and effectiveness. Prioritizing these solutions will lay the foundation for future collaboration on targeted planning, policy programs, and/or projects for all participants. This may enable participants to develop strategies for solutions under their authority.

Introduction

The last step in the workshop process is to prioritize the solutions developed. Resilience solutions often include some combination of diversity, redundancy, decentralization, transparency, collaboration, flexibility, and foresight considerations. However, there may be many different implementation solutions that must be considered, which focus on diverse concerns, and fall into different power sector systems. Prioritizing these solutions by their impact and effectiveness for power sector resilience helps participating jurisdictions and governmental entities build consensus; become informed about related activities, interdependencies, and vulnerabilities; and advance with implementation of the highest-priority resilience solutions.

Prioritization also lays the groundwork for future collaboration on targeted planning, policy, programs, or projects. This may allow participants to move forward with solutions that fall within their statutory and/or financing authority. Other solutions will rely on regional collaboration across jurisdictions or vertically among local, state, and federal agencies[1].

Prioritization begins with identifying relevant solutions and their relationships. These can then be prioritized by cost, complexity, and the relative impact and effectiveness in increasing power sector resilience. Impact refers to the extent that the strategy may have long-term, sustained changes in power sector resilience. Effectiveness relates to the level to which the solution will improve power sector resilience. There is no single way to evaluate impact and effectiveness, and all power sectors will have to determine an acceptable approach. Although some solutions may be complex in terms of implementation, they could have a positive impact and should not be ruled out based solely on complexity.

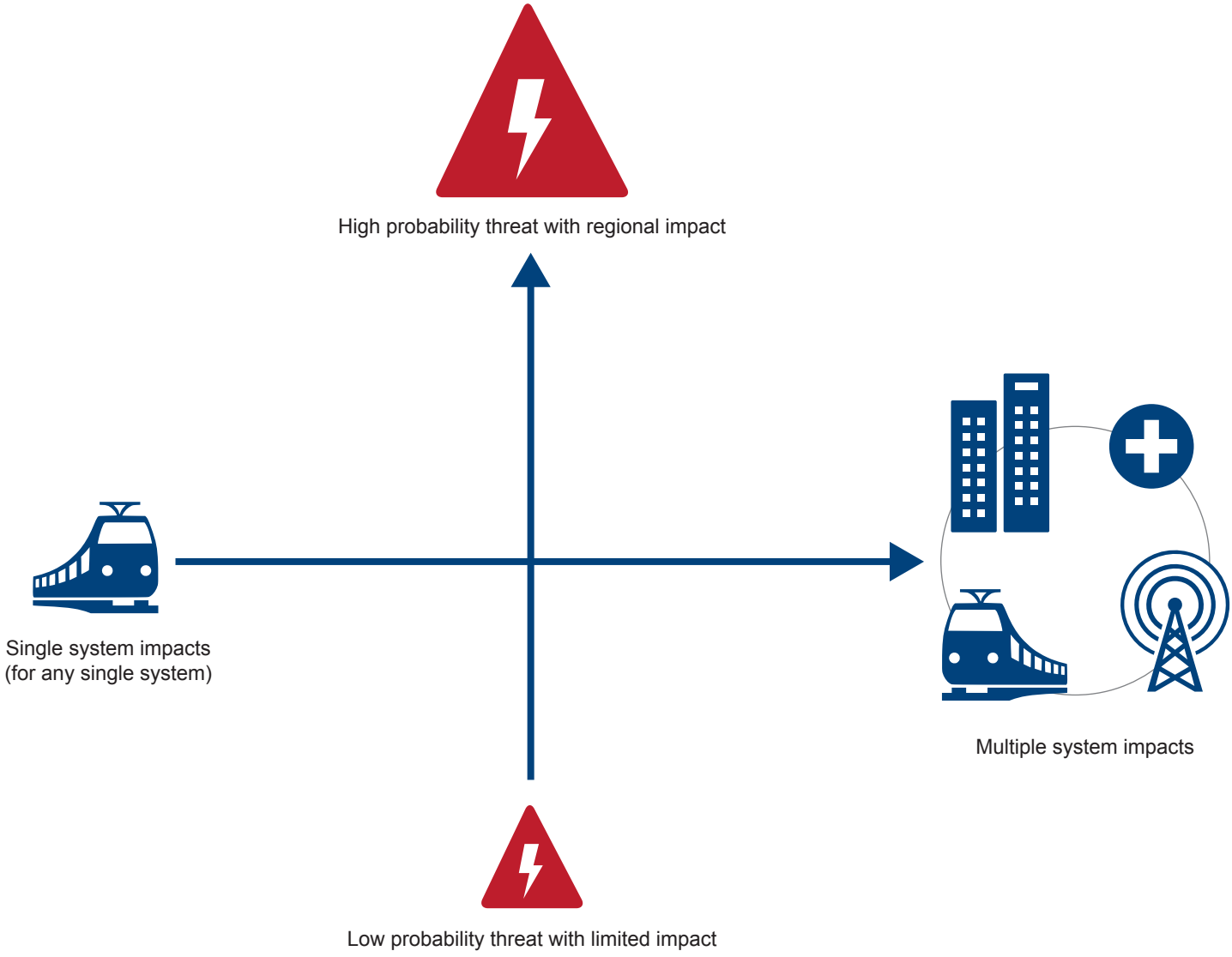
To guide the discussion, consider the following questions and complete the exercises on prioritizing solutions for power sector resilience. These can be completed as part of a group workshop or by individual organizations.

Discussion Questions

1. Which power sector solutions have been identified (at city, national, or regional/multinational scales)?
2. Do these solutions fall into Long-Term Planning, Regulations & Policies, Programs, or Capital Projects categories?
3. Are there any relationships between these solutions? If so, how are they related?
4. Which strategies support a specific site or critical infrastructure operation versus broader power sector resilience?
5. Where should the focus be placed on the implementation of these identified solutions?

Exercise 1: Where should focus be placed on the implementation of identified solutions?

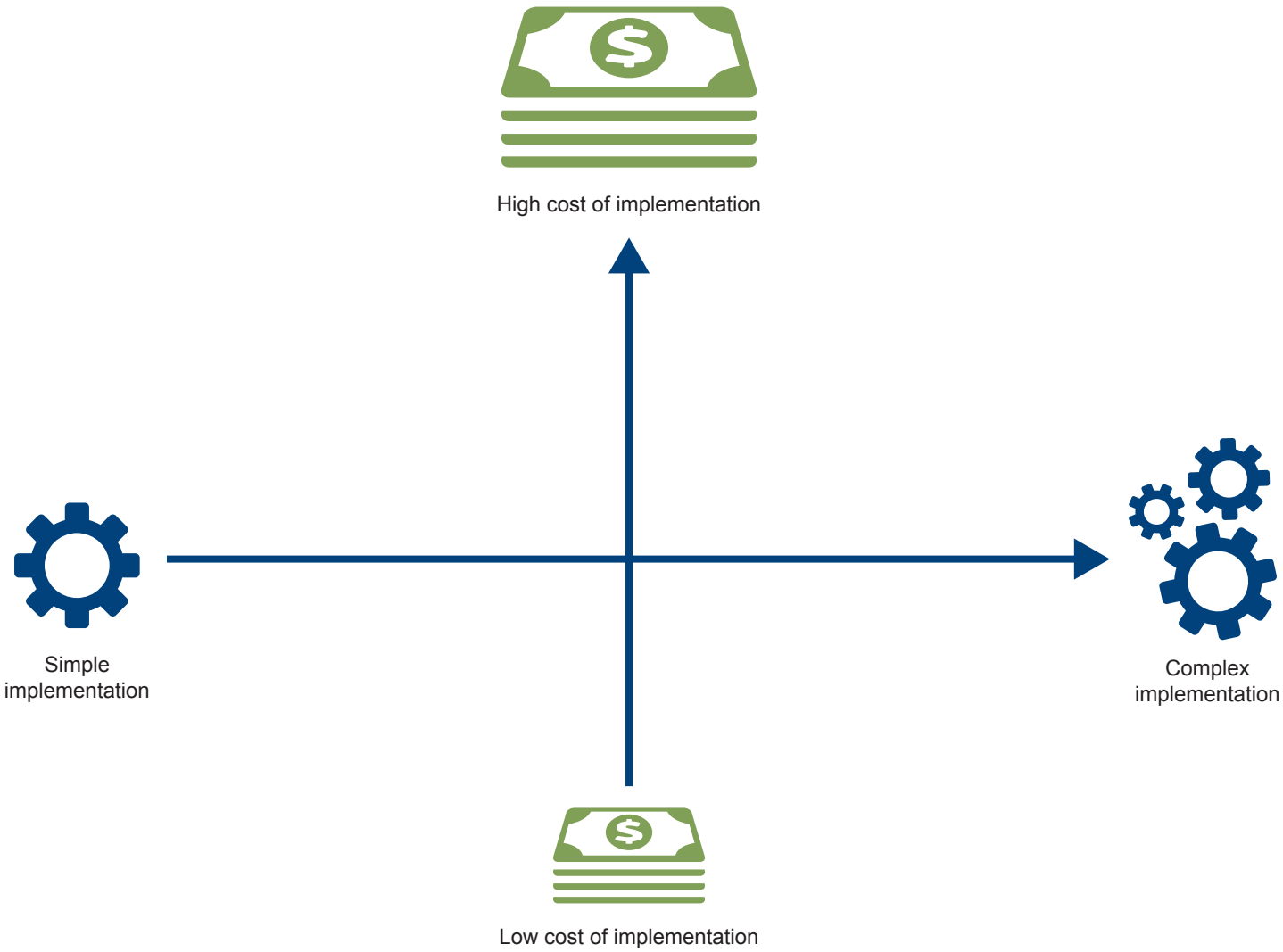
Use the chart below to map priority risks by likelihood and scale of hazard against the scope of the impact. Use this chart to select risks to prioritize for resilience action.



Note: This is a training exercise. For a comprehensive power system resilience assessment, a full cost-benefit analysis is necessary. These exercises are based on those created for NREL's resilience roadmap: https://www.nrel.gov/resilience-planning-roadmap/

Exercise 2: How challenging and costly will your resilience solutions be?

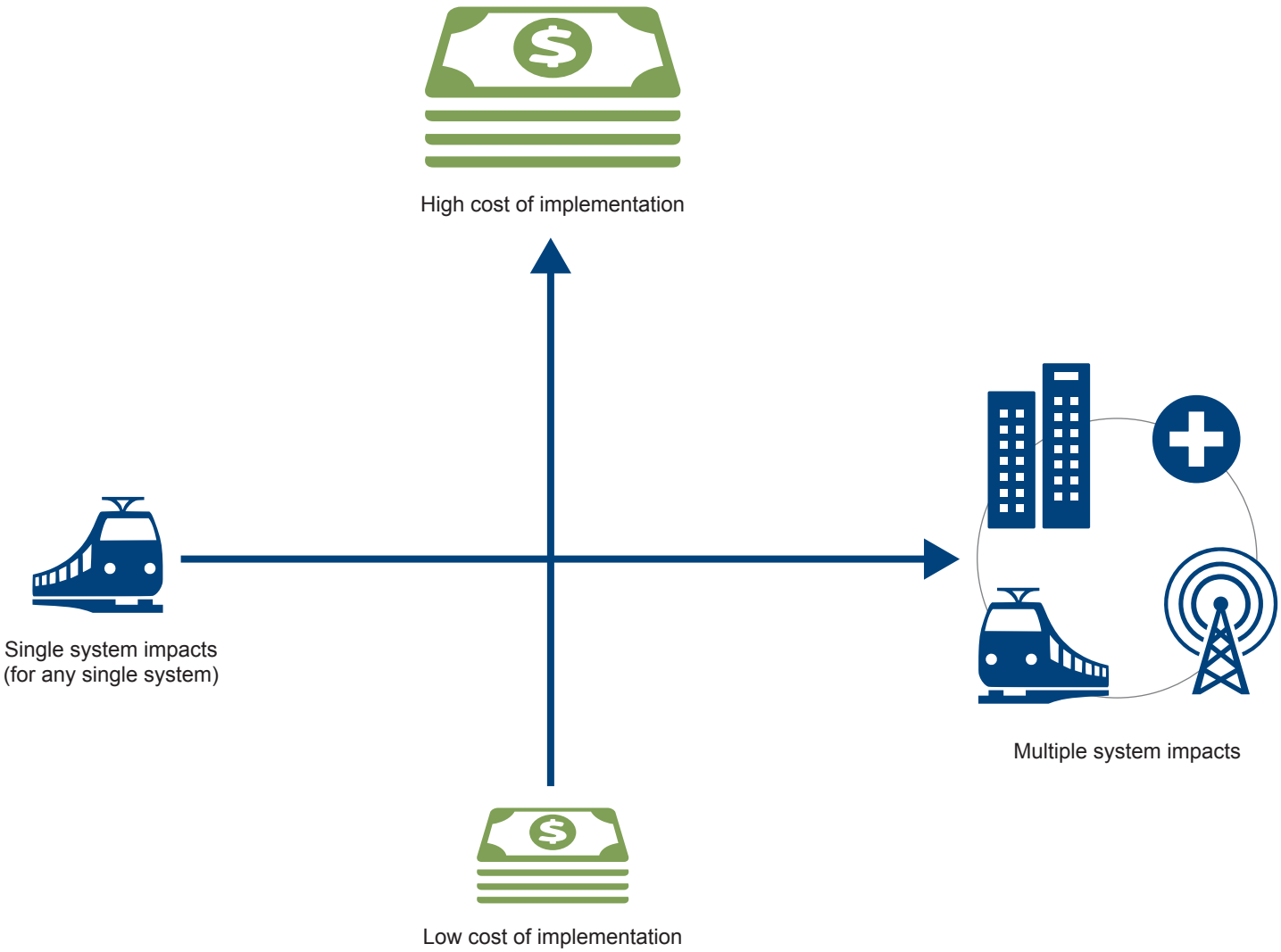
Use the chart below to map the relative cost of your possible resilience actions against the complexity of implementation. This will define the overall difficulty of implementation. This will help you choose solutions that comply with financial and capacity constraints.



Note: This is a training exercise. For a comprehensive power system resilience assessment, a full cost-benefit analysis is necessary. These exercises are based on those created for NREL's resilience roadmap: https://www.nrel.gov/resilience-planning-roadmap/

Exercise 3: How many systems will have added resilience based on your solutions?

Use the chart below to map the relative cost of your possible resilience actions against the number of system vulnerabilities addressed. This will define the overall impact of the solutions. Use this to prioritize solutions that reduce the greatest number of vulnerabilities relative to cost of implementation.



Note: This is a training exercise. For a comprehensive power system resilience assessment, a full cost-benefit analysis is necessary. These exercises are based on those created for NREL's resilience roadmap: https://www.nrel.gov/resilience-planning-roadmap/

Exercise 4:

Using the charts above, list your top five resilience solutions based on cost and vulnerabilities addressed.

Resilience Solution	Lead Organization	Supporting Organization	Policy or Regulatory Considerations	Cost Implications	Timeline	Vulnerabilities Addressed
1.						
2.						
3.						
4.						
5.						