



Comprehensive Electricity Planning in an Era of Load Growth

The National Association of Regulatory Utility Commissioners (NARUC) and the National Association of State Energy Officials (NASEO), in partnership with the U.S. Department of Energy, have provided a forum for the development of state-led pathways toward a more resilient, efficient, and affordable grid that accommodates load growth.

Electricity Planning for a Growing 21st Century Power Grid

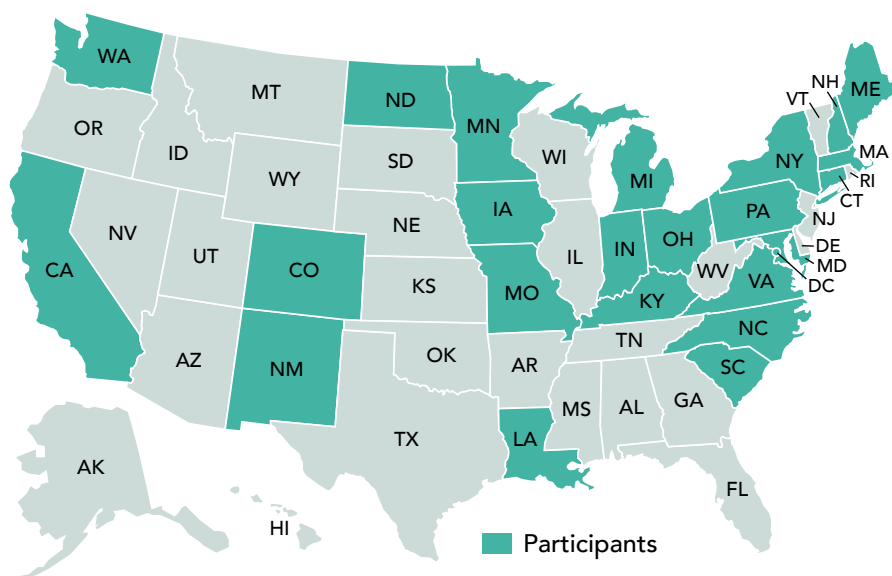
For the first time in decades, utilities are projecting significant load growth due to rising power requirements from data centers, manufacturing facilities, transportation, and buildings. Emerging technologies, evolving cost profiles, consumer preferences, energy provider options, and state and local efforts are driving the need for a variety of electricity sources and responses.

Capital expenditures will be significant to meet growing needs. Ensuring investments are right-sized and consider all cost-effective approaches such as demand-side solutions, innovative technologies, and resilient supply-side resources will be critical to maintaining reliability and customer affordability. Comprehensive electricity planning that considers customer, distribution system, resource, and transmission needs and capabilities will lead to higher value outcomes at lower costs.

With Greater Alignment of Planning Processes, States and Utilities Could:

- Improve grid reliability and resilience
- Optimize use of existing and emerging energy resources
- Improve affordability by avoiding unnecessary costs to ratepayers
- Support state policy priorities
- Increase the transparency of grid-related investment decisions

25 Participating States and Territories



In 2025, NARUC and NASEO launched an initiative to support members in describing their best-in-class visions of comprehensive electricity planning, building from prior work. Through trainings, virtual events, and in-person workshops with peers and experts, members from 25 states and territories articulated their priorities for better aligned distribution, resource, and transmission planning.

The resulting flowcharts and roadmaps are intended to be accurate, practical, and reflective of current and emerging industry best practices that any state can use.

Each roadmap includes:

- A flowchart of the entire integrated or aligned planning process
- Brief descriptions and explanations of each section of the flowchart
- A color key—outlining each box in the flowchart—to allow for comparison with other cohort roadmaps.

Planning Categories

- Establish expectations and assumptions
- Develop scenarios
- Develop load forecasts
- Identify system needs
- Identify solutions
- Evaluate solutions
- Finalize plan

Developing Diverse Approaches Relevant to Any State

Initiative members are diverse and broadly representative of the nation based on their geography, market models, planning approaches, and state goals. Members articulated their planning priorities in multi-state cohorts, based on their market and regulatory structures and the planning processes they sought to align. The roadmaps available now are:

1. **Emerald:** Vision for *integrated distribution system planning* and connections with bulk power system planning for states with *utilities within organized markets* that do not own generation assets (restructured states)
2. **Jasper:** Vision for *integrated distribution, generation, and transmission planning* for states with *utilities in organized markets* that own generation assets (vertically integrated within RTOs/ISOs)
3. **Topaz:** Vision for *fully integrated transmission, generation, and distribution* planning for states with *utilities outside of organized markets* that own their own generation and transmission assets (vertically integrated outside of RTOs/ISOs)

Envisioning Aligned Planning

Each of the three roadmaps is designed to reflect a best-in-class vision for comprehensive electricity planning, shown in flowcharts that have a common key. Across the three roadmaps, common themes emerged, including the need to incorporate stakeholder engagement, establish coordination checkpoints between planning processes, and create comprehensive solution sets:

Stakeholder Engagement: Meaningful and robust stakeholder engagement is a common element across all roadmaps. Stakeholders will be involved at multiple stages throughout the planning process (marked with stars in the flowcharts), where their input will be most valuable for supporting effective planning outcomes.

Coordination Checkpoints: All roadmaps include coordination checkpoints to improve alignment between transmission, resource, and distribution planning. These checkpoints occur at multiple stages throughout the planning processes, including during the development of planning assumptions and forecasts. Information sharing across planning scopes can improve efficiency and maximize overall system value.

Comprehensive Solution Sets: All roadmaps reflect the importance of identifying and evaluating solution sets that span planning scopes and consider both traditional infrastructure investments and alternative solutions. Emerging best practices encourage developing combined resource portfolios, rather than evaluating options solely within individual planning scopes. By considering a comprehensive range of solution sets, planners can identify lower risk, higher value options across a variety of futures.

Additional Resources

- Presentations and recordings are available from the NARUC-NASEO Comprehensive Electricity Planning Initiative virtual learning series.
- Later in 2026, NARUC and NASEO will release a companion comprehensive electricity planning library, filterable to match the planning steps of the roadmaps.

Find more information and all three roadmaps at: bit.ly/4dYFPgQ. ►



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