Policy Opportunity Brief: Interrogating Integrated Resource Plans

> "The portfolios prioritized in resource planning eventually [translate into] costs that affect customers' bills. In 2020, [generation] accounted for 47% of customers' bills [while transmission and distribution accounted for 38%]. As options for investment in transmission and distribution become increasingly integrated with resource planning processes, resource planning may present an opportunity to influence 85% or more of future bills."
>
> Source: Dyson, Shwisberg, and Stephan 2023, p. 16.

Background

Integrated resource plans (IRPs) are long-term strategies developed by electric utilities that detail how they will provide power at lowest cost through a selected portfolio of generation and demand-side resources over the next 10 to 30 years while "mitigating risk and meeting policy objectives" (Antal, et al. 2025; Biewald, et al. 2024; Dyson, et al. 2023, p. 1). IRPs can be used to inform investment decisions by the utility and approval of those investments by the utility regulatory commission (Antal, et al. 2025; Dyson, et al. 2023).

Most IRP requirements were developed in the 1980s – many originating as "least-cost planning requirements" – in response to concerns about fuel price volatility and electric system reliability. The U.S. electricity sector has changed dramatically since then. Rapid technological advancements, shifting energy resource costs, evolving state and federal policy objectives, growing electricity demand, changing consumer preferences, and increasing concerns about energy affordability combine to add "urgency and complexity to the IRP process" (Dyson, et al. 2023, p. 9).

Key Elements of an IRP

Typically set by administrative rules and/or statute, IRP requirements vary by state. In general, IRPs provide the following, as outlined by Antal, et al. (2025):

1. Load Analysis and Forecast: Foundational to IRPs, an analysis of historic load (consumption of electricity by end users) and a forecast of expected load growth are the primary sources used to inform capital investments by the utility.
2. Demand-Side Resource Analysis: An evaluation of energy efficiency and other demand-side management programs and technologies. IRPs should evaluate these resources "equally and fairly in relation to supply side resources" (p. 31).
3. Supply-Side Resource Analysis: A quantitative and qualitative examination of the supply-side resources (typically generation) that "the utility can reasonably expect to use, develop, implement, or acquire" (p. 32).
4. Scenario and Uncertainty Analysis: Scenario analyses examine how changes to the utility's existing portfolio impact costs and system performance. Scenarios should be developed using different variations of supply- and demand-side resources and timing of resource acquisition. Uncertainty analyses are risk assessments designed to assess the performance of different scenarios "under a broad range of future conditions" (p. 36).
5. Cost and Rate Analysis: Most cost and rate analyses are not very detailed and are provided confidential treatment.
6. Resource Adequacy Analysis: Ability to balance minute-by-minute variability between supply and demand.
7. Resource Acquisition Strategy: Selecting, and justifying the selection, of a preferred portfolio.
8. Action Plan: Describes the tasks and milestones that are necessary to implement the preferred plan in the near term.
9. Progress to Date: A report on the utility's progress implementing its last IRP.

10. Transmission and Distribution System Analysis: Most IRPs exclude this evaluation or treat it as an afterthought. Some states are updating IRP guidelines to require this analysis. States with separate transmission and distribution system planning requirements should ensure that IRPs incorporate findings from these plans.

Interrogating Your Utilities' IRPs

Policymakers should be prepared to ask probing questions to understand how vital energy infrastructure is being planned and to ensure that the IRP that is being developed by utilities is consistent with state policy. It may not be necessary to reform IRP requirements to improve outcomes. Rather, policymakers can place expectations on utilities to deliver the information and data that they need to make informed decisions. This can be accomplished by undertaking an interrogation of IRPs that asks relevant questions that better reflect today's system and policy issues. This can also prompt utilities to incorporate additional considerations into their IRPs. An initial set of questions to ask of IRPs follows.

IRPs can enable utilities, regulators, other policymakers, and stakeholders to:

1. Understand the energy needs of households, communities, and businesses now and in the future.
2. Challenge past assumptions and assess future uncertainties.
3. Evaluate best possible solutions and investment decisions that avoid higher than necessary electricity bills.
4. Assess the benefits, costs, and uncertainties associated with newer technologies.
5. Consider the interaction between electric transmission, distribution, generation, and the natural gas system.

Sources: Antal, et al. 2025; Biewald, et al. 2024; Cooke 2021; Dyson, et al. 2023.

1. How does the plan identify resource options to meet future needs reliably and safely? How does the plan evaluate different resource options (demand-side, supply-side, storage, transmission, and distribution)? (Antal, et al. 2025)
2. How does the plan assess emerging technologies and their benefits and costs? How does the plan identify how these technologies can be leveraged to meet future needs?
3. How does the plan keep costs low? How does the plan address affordability and economic development?
4. How does the plan advance my state's policy objectives? How does the plan meet the public interest?
5. How does the plan address existing or future constraints and gaps in the transmission and distribution systems?
6. How does the plan balance competing policy objectives?

References

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