

A Bright Future

Overview of TVA Draft 2025 Integrated Resource Plan

Energy is a critical part of everyday life. We use it to turn on our lights. Charge our smart phones. Heat or cool our homes. Do our work. And so much more.

The Tennessee Valley Authority (TVA) provides power used by approximately 10 million people across the seven-state region. Periodically, TVA takes a broader look at how we'll meet the region's future energy needs.

With input from stakeholders and the public, TVA is developing its 2025 Integrated Resource Plan (IRP) – a plan that will help shape TVA's energy system through 2050 and ensure that people have affordable, reliable, resilient and increasingly cleaner energy for decades to come.

TVA initiated the 2025 IRP based on movement in the key signposts identified in the 2019 IRP. The region's population and industry are growing and energy demand is increasing. Policies and regulations are changing. Industrial companies are electrifying their operations. And new, cleaner technologies are emerging.

TVA is also preparing an Environmental Impact Statement (EIS) to evaluate the potential impacts associated with the IRP.

WHY IT'S IMPORTANT

The planning direction established by the IRP will guide what power-generation resources and approximately how much of these resources will be needed to power homes and businesses across the Tennessee Valley region for years.

The planning process is detailed and rigorous, but a major key to its success is simple: we need your input.



As of draft IRP publication. Public input on the draft IRP and EIS will be incorporated into the final analysis and recommendations.

STAKEHOLDER AND PUBLIC INVOLVEMENT

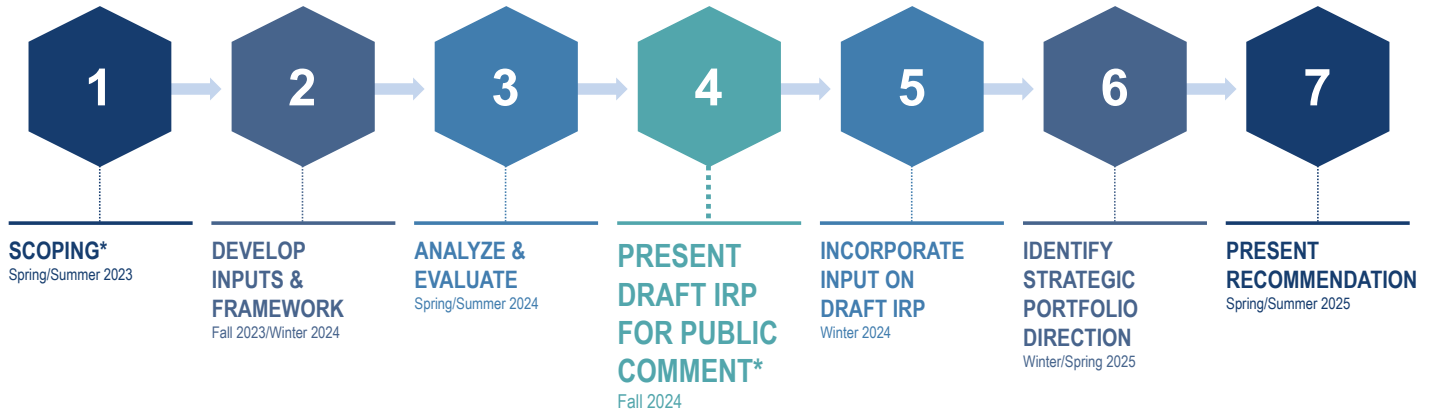
Before the IRP began, TVA led a Utility of the Future Information Exchange to provide a forum for a diverse set of stakeholders to discuss the IRP process and broad issues they believed should be considered in the upcoming IRP. In May 2023, TVA published a Notice of Intent in the Federal Register. That initiated a 45-day public scoping comment period. During that time, TVA gathered public input that helped frame the IRP effort.

We established the IRP Working Group, a diverse group of stakeholders who are meeting regularly to provide comprehensive feedback on the IRP. The Regional Energy Resource Council (RERC), a federal advisory committee that provides formal advice to the TVA Board of Directors, also is engaged in the process.

Public participation is vital, and TVA has received comments during quarterly TVA Board listening sessions, at RERC listening sessions and during informational IRP webinars. Our IRP website (tva.com/irp) provides up-to-date IRP information, including FAQs and responses to questions asked during public webinars.

We are now entering the next phase of the process, with the draft IRP and EIS published on Sept. 23, 2024. To further explain what’s in the documents and gather your input, we are holding two webinars and 10 in-person meetings across the region during the public comment period, which runs through Dec. 11, 2024.

We want to hear from residents and communities around the region. Your insights and opinions are critical to the process as we plan how TVA will meet future power demand.



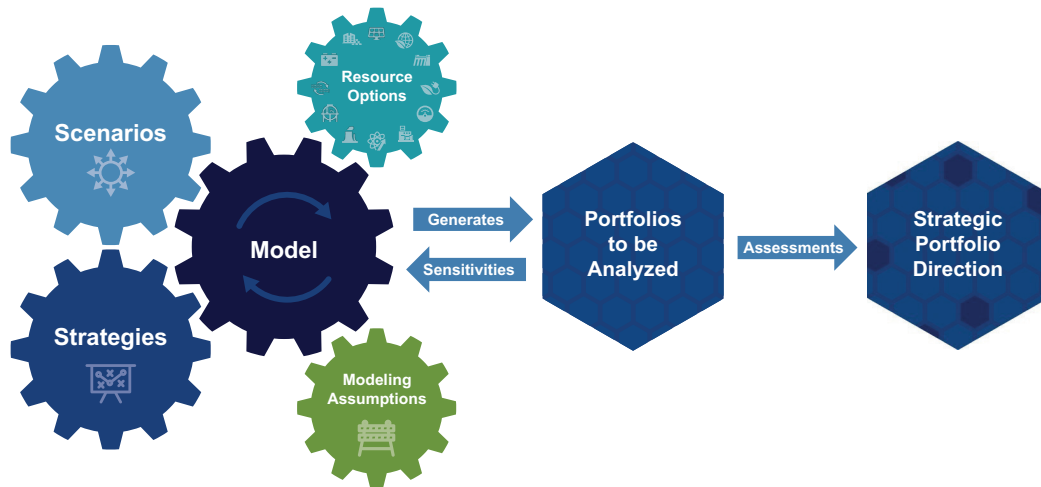
**Opportunity for public feedback during 45-day scoping and 75-day draft IRP and EIS public comment periods.*

DETAILS ABOUT LONG-TERM PLANNING

TVA’s integrated resource planning is grounded in fundamental least-cost principles: low cost, risk informed, environmentally responsible, reliable and resilient, diverse and flexible.

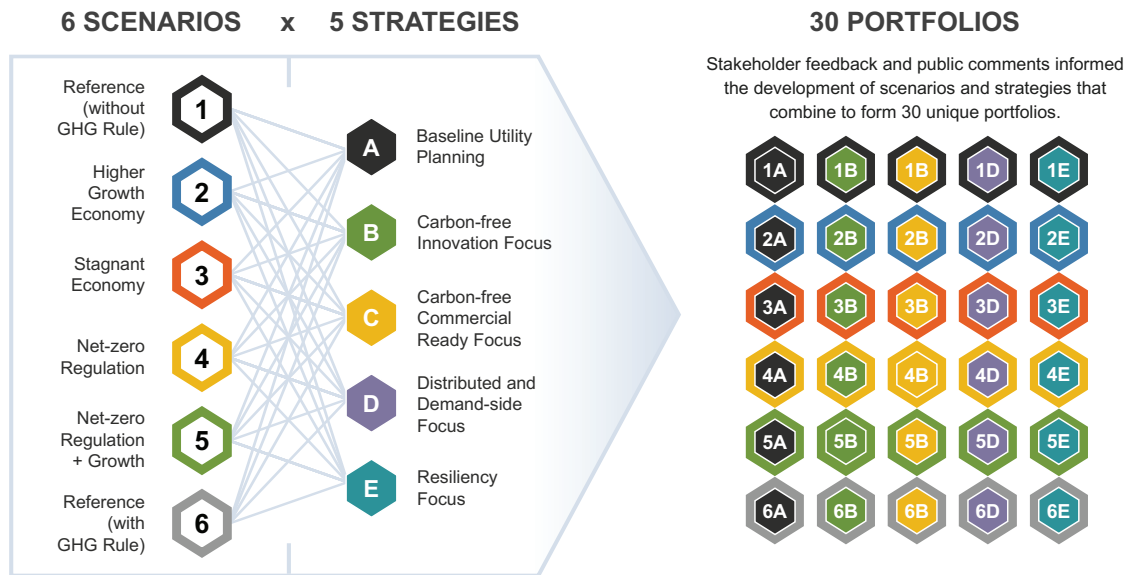
Long-term planning entails considering future energy demand, evolving regulations, current power generation resources and new resource options, then determining what new power resources would work best to fill future capacity needs.

As more renewable resources such as solar and wind are added to the system, firm resources that can generate power at any time will also be needed to maintain system reliability and flexibility. For example, natural gas units can provide energy when renewable resources are not generating, and they can ramp up and down as solar and wind generation varies. The IRP helps identify the optimal mix of resources to meet the region’s future energy needs.



THE PROCESS, TO DATE

Together, TVA and the IRP Working Group spent months identifying IRP “scenarios” (possible futures TVA could find itself operating in between now and 2050) and “strategies” (alternative business approaches to help meet electricity demand in these futures).



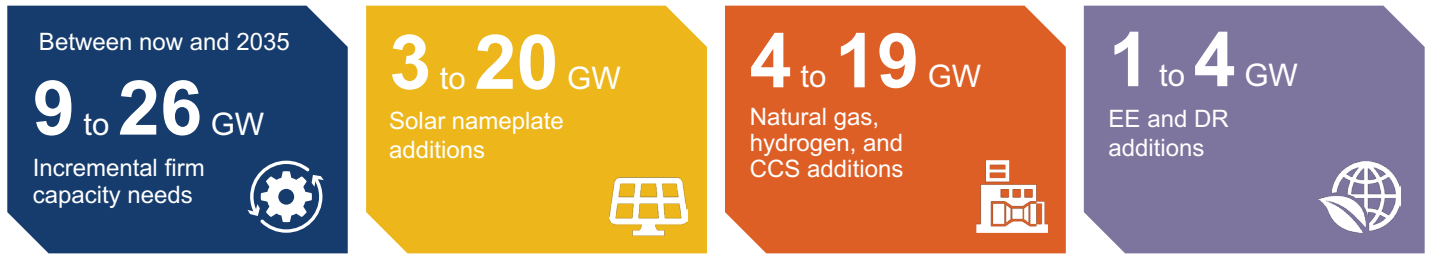
To ensure the draft considered the latest information, when TVA learned in spring 2024 that the Environmental Protection Agency would imminently be releasing its final Greenhouse Gas Rule, TVA paused the IRP publication date to allow for additional analysis that incorporates the finalized rule into the IRP.

TVA and the IRP Working Group developed a list of power generation resource options for the IRP that includes mature technology options such as nuclear, hydro, coal, gas, renewables, storage, energy efficiency (EE) and demand response (DR) technologies. The IRP also considers emerging technologies such as small modular reactors, carbon capture and sequestration, hydrogen blending and advanced chemistry batteries.

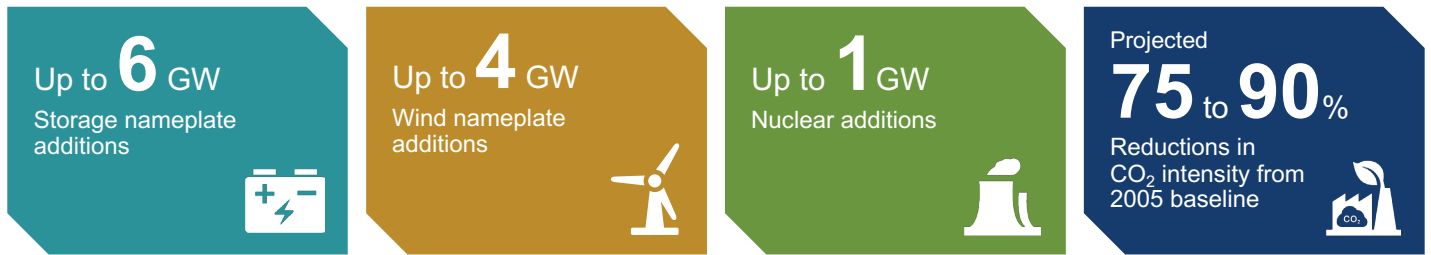
TVA modeled the five strategies in the six scenarios. The modeling generated 30 unique potential resource “portfolios” – the power supply mix that results from assessing a particular strategy in a particular scenario. Based on least-cost planning principles and with input from the IRP Working Group, TVA developed a set of metrics to assess how each strategy performs in each scenario.

INITIAL RESULTS

The draft IRP analyzes potential ways the resource portfolio might evolve between now and 2035 and from 2035 to 2050. Insights gained from evaluating the entire planning horizon will inform portfolio direction between now and 2035. Looking across all portfolios through 2035, the draft IRP results suggest:

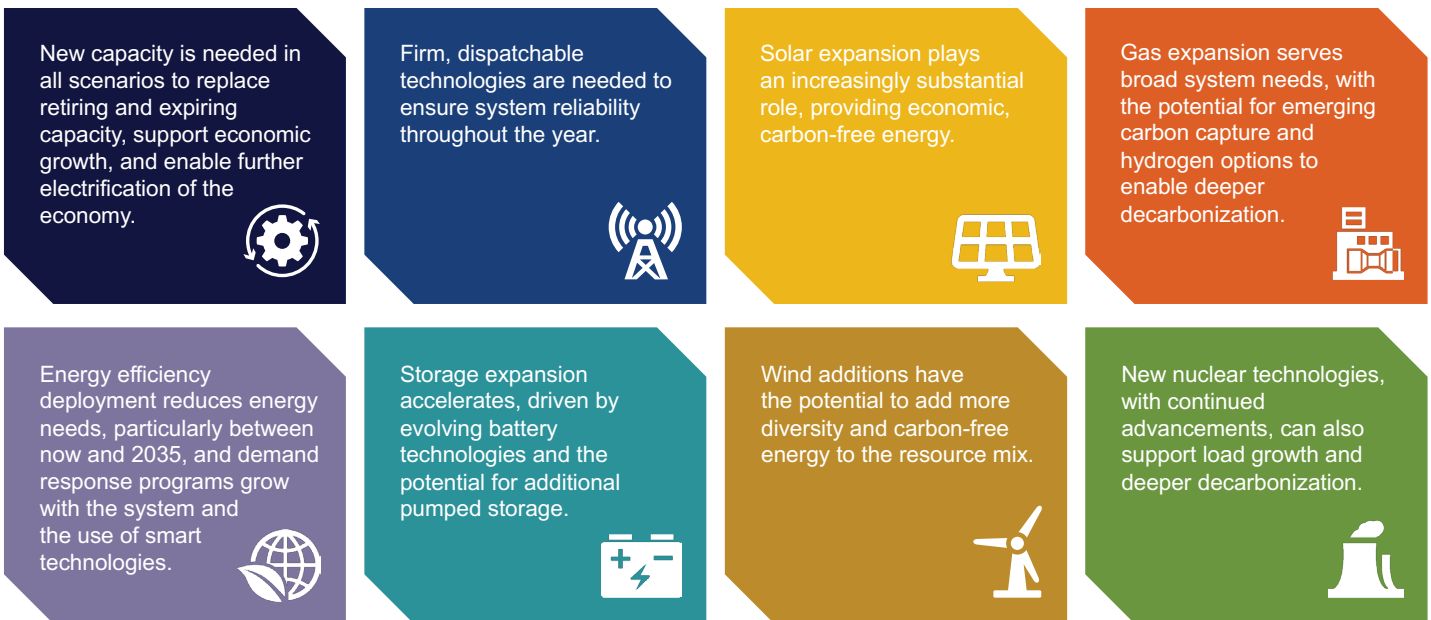


In all scenarios, TVA will continue to provide AFFORDABLE, RELIABLE, RESILIENT, and increasingly CLEANER energy for the region for decades to come.



Power supply mix ranges, summarized in gigawatts (GW), vary based on energy demand, market conditions, policy and regulations, and technology advancements.

DRAFT IRP KEY THEMES ARE:



The draft results also indicate that TVA would see continued reductions in carbon intensity beyond 2035.

The scorecard below summarizes strategy performance for each metric category. Looking across categories, there are key tradeoffs to consider, such as between cost and environmental performance.

Strategy	Low Cost	Risk Informed	Environmentally Responsible	Diverse, Reliable, and Flexible
A Baseline Utility Planning				
B Carbon-free Innovation Focus				
C Carbon-free Commercial Ready Focus				
D Distributed and Demand-side Focus				
E Resiliency Focus				

Good Better Even Better Best

OBSERVATIONS IN THE EIS

The EIS informs TVA’s decisionmakers and meets the environmental review requirements of the National Environmental Policy Act (NEPA). The draft EIS is a programmatic review that broadly assesses the relative impacts of the five strategies on the natural and human environment. The five strategies are the basis for the alternatives discussed in the EIS. Baseline Utility Planning is the No Action Alternative, and the remaining four strategies are the Action Alternatives.

The environmentally preferable alternatives are Strategies B and C, which emphasize carbon-free resources and achieve similar CO2 emissions reductions over the planning horizon. These strategies have tradeoffs across other environmental metrics, with higher water consumption in Strategy B and higher land use in Strategy C.

It is important to note that TVA will conduct site or project-specific NEPA reviews to consider future generation projects that are proposed to implement the IRP.

Highlights of the draft EIS analysis include:

 Air Quality	 Climate and Greenhouse Gases	 Water Resources	 Land Resources	 Solid and Hazardous Waste	 Overall Observations
<p>Long-term reductions in air emissions of all types with expected coal retirements</p>	<p>Long-term reductions in CO₂ emissions and intensity</p>	<p>Reductions in water use from 2025 to 2050, except in Scenario 5 that has the most nuclear expansion</p>	<p>Increases in land use primarily driven by solar expansion</p>	<p>Coal combustion residuals production drops to zero by 2035</p>	<p>Strategies B and C, which promote carbon-free resources, have the lowest emissions; Strategy C has the lowest water and highest land use</p>

WHAT HAPPENS NEXT?

TVA will review and evaluate public input and conduct further analysis to appropriately incorporate feedback provided during the public comment period. Public comments on the draft IRP and EIS will be addressed in the final EIS.

The final IRP, which is expected to be published in spring/summer 2025, will include power supply mix ranges, recommendations for strategic portfolio direction through 2035 and information on factors that will influence portfolio direction from 2035 to 2050.

The final EIS will evaluate the final IRP recommendations to determine the environmental impacts.

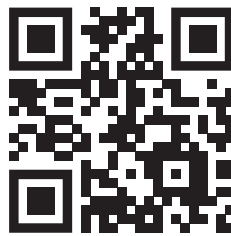
After the Board reviews and makes a decision on the final IRP recommendations, TVA will publish a Record of Decision. If the TVA Board accepts the IRP recommendations, the IRP will be TVA's compass for power generation decisions as well as for long-term operational and financial planning.

WE NEED YOUR INPUT

TVA encourages stakeholders and the public to review the draft IRP and EIS and provide comments on the analysis and what they would like to see in the power system between now and 2050.

The public comment period for the draft 2025 IRP and EIS runs through Dec. 11, 2024. There are a handful of ways to provide input – by submitting a comment form at the in-person open houses, by submitting comments online via the TVA website ([tva.com/irp](https://www.tva.com/irp)) or by emailing IRP@tva.gov with the subject line “Draft 2025 IRP Comments.” Comments also can be mailed to Kelly Baxter, NEPA Project Manager, 400 W. Summit Hill Drive, WT 11B, Knoxville, Tennessee, 37902. We look forward to stakeholder and public feedback on the IRP to help shape the region's future energy system.

For additional information or to submit a comment on the draft IRP and EIS, please visit the IRP webpage.



www.tva.com/irp