TENNESSEE VALLEY AUTHORITY

TVA IRP Employs Rigorous Scenario and Strategy Approach

TVA is developing its 2025 Integrated Resource Plan (IRP) with input from stakeholders and the public. The IRP will provide strategic direction for how TVA can provide affordable, reliable, resilient and increasingly cleaner energy for decades to come.

TVA and a diverse group of stakeholders, the IRP Working Group, have devoted a considerable amount of time to evaluating scenarios, or future worlds, TVA could find itself operating in *and* the strategies and resources it could use to meet energy demand between now and 2050.

Identifying scenarios and strategies is a critical step in the IRP process because they serve as the basis for modeling.

Scenarios consider a wide range of ways the future could unfold. They evaluate uncertainties related to electricity demand, environmental policy and regulations, technology advancements, and other factors.

Scenarios 1 through 3 depict futures TVA could operate in without significant regulatory changes.

Scenarios 4 through 6 consider futures in which carbon dioxide (CO_2) emissions from power generators are regulated. Scenario 6 specifically incorporates the impact of the Environmental Protection Agency's Greenhouse Gas Rule finalized in May 2024.

Strategies are alternative approaches TVA could take to meet electricity demand by emphasizing certain resource options.

Modeling each strategy in each scenario generates 30 resource portfolios. TVA and the IRP Working Group are analyzing the portfolios using metrics that reflect TVA's mission and least-cost planning principles.

TVA will conduct additional analysis to answer questions based on IRP Working Group input and public comments on the draft IRP and the associated draft Environmental Impact Statement (EIS).

These evaluations will inform the IRP recommendations for strategic portfolio direction, which will be included in the final IRP report.

IRP Scenarios and Strategies

SCENARIOS

1 Reference (without Greenhouse Gas Rule)
TVA's current forecast that reflects moderate population, employment, and industrial growth, weather -normal trends, growing electric vehicle use, and increasing efficiencies

2 Higher Growth Economy
Reflects a technology -driven increase in U.S. productivity growth that stimulates the national and regional economies, resulting in substantially higher demand for electricity

3 Stagnant Economy
Reflects rising debt and inflation that stifle consumer demand and business investment, resulting in weaker than expected economic growth and essentially flat electricity demand

4 Carbon Regulation
Reflects the impact of May 2023 proposed greenhouse gas rules that target significant reductions in electric utility CO_2 emissions beginning in 2030 and potential future regulations striving for net zero by 2050

5 Carbon Regulation Plus Growth
Reflects impact of proposed and potential future regulations along with substantial advancements in clean energy technologies, spurring economic growth and extensive electrification

6 Reference (with Greenhouse Gas Rule)
Reflects TVA's current forecast and incorporates the impact of greenhouse gas rules finalized in May 2024 that target significant reductions in electric utility CO_2 emissions beginning in 2030

STRATEGIES

A Baseline Utility Planning
Represents TVA's current outlook based on least -cost planning, incorporating existing programs and a planning reserve margin target. This reserve margin target applies in all strategies

B Carbon-free Innovation Focus
Emphasizes and promotes emerging, firm and dispatchable carbon -free technologies through innovation, continued research and development, and strategic partnerships

C Carbon-free Commercial Ready Focus
Emphasizes proven carbon -free technologies like wind, solar, and storage, at both utility-scale and through customer partnerships, along with strategic transmission investment

D Distributed and Demandside Focus
Emphasizes existing and potentially expanded customer partnerships and programmatic solutions to reduce reliance on central station generation and promote virtual power plants

E Resiliency Focus
Emphasizes smaller units and the promotion of storage, along with strategic transmission investment, to drive wider geographic resource distribution and additional resiliency across the system