



Fact Sheet

Integrated Resource Plan

The Tennessee Valley Authority's Integrated Resource Plan, *TVA's Environmental and Energy Future*, is a roadmap to help guide the federal utility in meeting the region's electricity needs through 2029. The plan recommends a strategic direction that focuses on a diverse mix of energy sources, including nuclear energy, renewable energy, natural gas and energy efficiency, as well as traditional coal and hydroelectric power. The Recommended Planning Direction contained in the plan was approved by the TVA board of directors on April 14, 2011.

Background

Many electric utilities use an integrated resource planning process to determine the most cost-effective ways to prepare for the future power needs of their customers. TVA's 20-year Integrated Resource Plan was developed over two years, with extensive business, technical and economic analysis and public input. It provides direction for decisions that require long lead times and is consistent with TVA's Environmental Policy and renewed vision to be one of the nation's leading providers of low-cost and cleaner energy by 2020.

Key points

- This plan positions TVA to respond to a dynamic and evolving environment for the electric industry with resource options to increase supply (new power plants) and to reduce demand (programs to increase energy efficiency and reduce peak power demand).
- The recommendations give a direction for TVA in supplying low-cost, reliable power for the region while balancing the risk of future uncertainties.
- The direction represents the best combination of strategy components based on cost, risk and strategic considerations.
- The plan describes ranges of resource options; it does not make specific commitments or prescribe the timeline for new generating resources.
- TVA continuously sought public input while developing the IRP. It created a Stakeholder Review Group, held two rounds of public meetings, and conducted surveys, briefings and webinars to give the public opportunities to share their views on TVA's IRP process and the available options.
- TVA also prepared an associated Environmental Impact Statement to assess potential environmental effects of the plan's resource strategies.
- To respond to changes in the utility industry, TVA is committed to begin the next integrated resource planning effort by 2015.

Summary of the recommended planning direction

- Expand the contribution of energy efficiency and demand side options by an additional 3,600 to 5,100 megawatts by 2020. (This includes energy efficiency and demand reduction savings achieved since 2008.)

- Pursue cost-effective renewable energy (for a total of 1,500 to 2,500 megawatts from out-of-region purchases and in-region options by 2029).
- Increase the amount of idled coal-fired capacity beyond the 1,000 megawatts already announced in August 2010 (a total of 2,400 to 4,700 megawatts by 2017). This will result in nuclear overtaking coal as TVA's leading energy source.
- Increase the contribution of nuclear generation (1,150 to 5,900 megawatts, including the completion of the 1150-megawatt Watts Bar Unit 2) with the first new unit after Watts Bar coming online no sooner than 2018.
- Add pumped-storage hydro capacity (850 megawatts) between 2020 and 2024 to increase power system reliability and operational flexibility.
- Preserve the option of additional coal-fired generation with carbon capture (zero to 900 megawatts).
- Use natural gas as an intermediate supply source – in most cases after 2020, but earlier when needed to meet high-load growth or to support the reliability of the power grid. (A range of 900 to 9,300 megawatts is indicated, including the 900-megawatt combined cycle plant under construction at the John Sevier site.)

Other information on IRP process

- TVA developed various scenarios that could impact future power requirements based on a number of factors outside of TVA's control, including economic growth, inflation, fuel prices and the regulatory environment.
- The scenarios did not attempt to predict the future; they only described future uncertainties that TVA should be prepared for.
- Planning strategies were developed to address the business decisions that TVA can control, such as nuclear expansion, idling of coal-fired plants or expansion of the energy efficiency and demand response programs.
- Each planning strategy was analyzed in each of the different scenarios to create a matrix of 20-year portfolio options for TVA to consider. Each portfolio described how a particular strategy performed under a certain scenario.
- Portfolios were then ranked according to cost, risk and strategic factors (such as environmental and economic impacts) that should be considered when selecting preferred planning strategies for the draft plan.
- The top ranking strategies were further evaluated, and, with public input from the draft plan, TVA evaluated new combinations of strategy components to improve alternatives.