TENNESSEE VALLEY AUTHORITY

IRP Modeling Helps Shape Optimal Mix of Resource Options

TVA is working with stakeholders to develop its Integrated Resource Plan (IRP), which will provide strategic direction for the region's future power system.

A critical step in the planning process was the development of a set of power-generation resource options to be considered in the IRP analysis.

TVA and a diverse group of stakeholders, the IRP Working Group, first developed scenarios, or future worlds, TVA could find itself operating in and the business strategies it could use to meet energy demand between now and 2050.

Then, with input from the Working Group, the set of resource options to be included in the study were identified.

The resource options include proven technologies: nuclear, hydro, coal, gas, renewables, storage, energy efficiency (EE) and demand response (DR).

They also include technologies with reasonable prospects of becoming commercially available between now and 2050, such as small modular reactors, carbon capture and sequestration, hydrogen blending, and advanced chemistry batteries.

When evaluating resource types, the team considered factors such as the cost to build and operate, carbon emissions profile, and ability to be dispatched when needed.

Power-generation resources serve different needs – from those that run continually to meet constant energy needs, to those that help meet fluctuating needs, to those that are used for a few hours when energy demand is at its highest.

IRP modeling helps shape the optimal mix of resources to meet the region's future energy needs. Maintaining diversity in the power system is fundamental to TVA's ability to provide affordable, reliable, resilient and increasingly cleaner energy for years to come.

IRP Resource Options