OAK RIDGE NATIONAL LABORATORY

HydroSource







HydroSource is an innovative digital platform consisting of comprehensive data and tools on US hydropower assets that enables data-driven decision making at the water-energy nexus. Developed by Oak Ridge National Laboratory and funded by the Department of Energy's Hydropower and Hydrokinetic Office, HydroSource is the authoritative open source for US hydropower data.

The platform was designed to help key stakeholders in the US hydropower community —from facility operators to municipalities to government agencies and environmental partners—make the most informed, data-driven decisions on hydroelectric generation and affordable, domestic energy.

Data Categories

- ENERGY
- WATER
- RESOURCE ASSESSMENT AND CHARACTERIZATION
- ENVIRONMENTAL
- HYDROCLIMATOLOGY
- SOCIOECONOMIC

Informing Data-Driven Decisions

The National Hydropower Asset Assessment Program, or NHAAP, founded in 2010, was the precursor to HydroSource and was mainly focused on developing hydropower resource assessments. As the scope of NHAAP expanded, the program transitioned in 2017 to become HydroSource. The primary objective of HydroSource is to provide data that enable a comprehensive understanding of the impacts and risks of hydropower operations, ranging from individual generating assets and river reaches to regional and national-scale operations. We carry through on these objectives by providing:

- Multidisciplinary, science-based, unbiased data
- Centralized access to integrated data and tools applicable to scenario-specific objectives
- Ongoing end user engagement and data coordination.

Providing Resources

In a rapidly evolving energy industry, understanding the nation's existing hydropower fleet and potential hydropower resources is critical to relevant stakeholders and the research community. HydroSource provides data on existing hydropower facilities such as details on the locations and key characteristics. It also provides assessments on new hydropower developments, such as pumped storage, that address estimates of energy potential, as well as current hydrologic and environmental conditions. In concert with HydroSource, the US Hydropower Market Report describes notable trends.

Scan to learn more

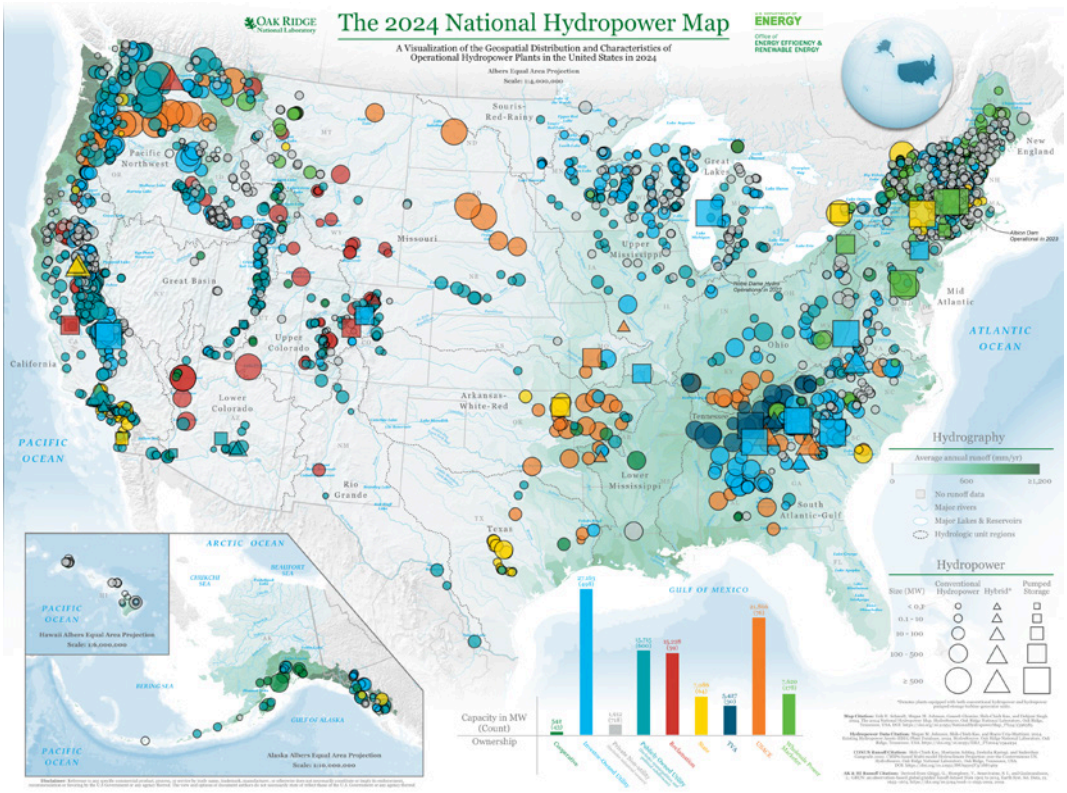
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Visualizing Assets and Trends

HydroSource data also include annual updates of the US overall hydropower and pumped storage hydropower development pipelines. The updates offer information about the number, location, and characteristics of new projects being proposed.

A significant and current trend in new development has been observed in the Appalachian region in which hydropower capacity is added to existing non-powered dams.

Increasing interest in construction of pumped storage facilities, especially in the southwestern United States, is another important trend. If constructed, those facilities will enable hydropower to fill the energy gaps at times when other sources of power are unavailable.



Addressing Multiple Environmental Considerations

In addition to generating electricity, hydropower facilities provide resources for flood and storm management, irrigation, water supply, navigation, and recreation. HydroSource, therefore, also provides data and statistical tools for identifying, minimizing, and mitigating anthropogenic and environmental impacts of hydropower. HydroSource users can access a host of maps and other databases that demonstrate mitigation efforts across the United States, identify species for conservation, and inform strategic environmental permitting.



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