



— BUREAU OF —
RECLAMATION



Hydropower Strategic Plan

Fiscal Year 2021-2026



Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

Hydropower Strategic Plan

Fiscal Year 2021-2026

prepared by

Hydropower Management Team

Max Spiker, Senior Advisor, Hydropower

Michael Pulskamp, Manager, Power Resources Office

David Arend, Lower Colorado Basin Region Power Manager

Michael Maroncelli, Missouri Basin Region Power Manager

Steve Melavic, California-Great Basin Region Power Manager

Nicholas Williams, Upper Colorado Basin Region Power Manager

Joseph Summers, Columbia-Pacific Northwest Region Power Manager

Cover Photos: Top Left – Glen Canyon Dam, Page, AZ; Middle Left – Hoover Dam, Boulder City, NV; Bottom Left – Generator at Grand Coulee Third Powerhouse, Grand Coulee, WA; Top Middle – Generators at Hoover Dam, Boulder City, NV; Bottom Middle – Penstocks at Grand Coulee Pump Generating Plant overlooking Grand Coulee, WA; Right – Francis Turbine Being Lowered Into Hoover Dam, Boulder City, NV.

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Executive Summary

During the 20th century, the Federal Government invested enormous resources in water infrastructure throughout the western United States to reduce flood risks to communities; provide reliable water supplies for farms, families, businesses, and fish and wildlife; and generate dependable, renewable hydropower. The Bureau of Reclamation is now the second largest producer of hydropower in the United States, and this renewable resource has played a critical role in achieving Reclamation's mission to provide reliable, low-cost water and power to the arid west.

Energy market dynamics have changed dramatically over the past decade and are predicted to continue to evolve rapidly through the next decade. Increases in renewable energy generation and low natural gas prices have deflated electricity market prices, while initiating large swings in hourly, daily, and seasonal energy prices. The average production cost per-megawatt-hour of Federal hydropower has trended upward as a result of environmental regulations and challenging hydrologic conditions. The upward trends are worrisome and have resulted in concerns from power customers about the future economic viability of Reclamation hydropower. At the same time, recurrent demand spikes for Reclamation hydropower during heat waves or other grid disturbances, particularly in California, have highlighted the unique capabilities and value of hydropower. Collectively, these conditions create challenges for Reclamation hydropower as well as opportunities to further enhance its value. Reclamation's hydropower program must adapt to changing markets, environmental concerns, and water issues to ensure the long-term viability of the program. An innovative approach to navigating changing conditions can help Reclamation achieve the vision outlined in this document.

To ensure Reclamation can keep affordable water and power flowing for another century, the organization is collaborating with partners to meet current and future energy needs. Reclamation recognizes that this changing environment requires a vision and strategic plan to make informed decisions that make the best use of limited resources on behalf of customers, stakeholders, and the nation.

The strategic plan for the hydropower division of Reclamation is built around three core goals:

1. Ensure that Reclamation hydropower is a valuable part of the long-term national energy portfolio.
2. Customer satisfaction is core to the long-term success of Reclamation hydropower.
3. Invest in our people to ensure Reclamation continues to employ a skilled, dedicated, and capable workforce.

Reclamation's hydropower strategic plan provides a roadmap for organizational improvements based on data and science and will ensure that our people and mission remain a primary focus.

Reclamation will continue to review and refresh this strategic plan periodically to ensure the strategy remains focused on meeting customers' needs, is responsive to industry change and is aligned with U.S. Department of the Interior goals. For more than 100 years, Reclamation employees have

dedicated themselves to accomplishing the organization's mission, and this record of service will continue for the coming 100 years and beyond.

Mission

Reclamation hydropower is to be generated in a safe, reliable, cost-effective, and environmentally acceptable manner, consistent with project authorizations and applicable laws and regulations. In administering Reclamation's hydropower program, the agency will seek opportunities to maintain and enhance the value of Reclamation power resources and improve program effectiveness and reliability through internal controls, sound business practices, and technological innovation.

Vision

Reclamation's hydropower program will position itself as a leader in the energy industry, for the benefit of current and future generations, by making sound business decisions, applying innovative solutions to complex problems, and being responsive to changes in the energy industry.

Values

The following core values identify priorities that are the basis of the goals, objectives, and strategies of this strategic plan.

We value:

- Fulfilling Reclamation's core mission to deliver reliable water and power to the western United States in an environmentally and economically sound manner in the interest of the American public.
- Integrity that is achieved through honesty, transparency, and professional and ethical behavior.
- Excellence that comes from science-based management, delivering outstanding service, financial efficiency and effectiveness, and the continuous improvement of our products and services.
- Teamwork and partnerships fostered by respecting the views of customers and other stakeholders.
- Close collaboration and communication with all our Federal and state partners.
- Innovation that proactively meets challenges, promotes a culture of finding solutions, and fosters utilization of new approaches to complex problems.

- Professionalism through development of employees, learning from the past to plan for the future, and cultivating a workforce that is matched to the needs of the future.

Goals – Objectives - Strategies:

Goal 1: Ensure Reclamation hydropower is a valuable part of the long-term national energy portfolio.

Reclamation has a long history of delivering reliable, low-cost hydropower. The achievement of future success will require collaborative efforts from Reclamation, power and water customers, and other stakeholders to ensure Reclamation hydropower is a leader in the energy industry.

Hydropower provides great value to the bulk electric system (BES) beyond energy generation and offers additional products that other generation resources do not. Ancillary services support the BES during unforeseen disturbances and are especially valuable as more intermittent, non-dispatchable renewable energy resources are integrated into the BES. However, the value and criticality of the ancillary services provided by Federal hydropower to ensure reliable grid operations have not been fully quantified. Development of a Reclamation-wide hydropower valuation strategy will allow us to make informed decisions; communicate effectively with customers, stakeholders, and partners; and garner support from decision makers.

Objective 1: Demonstrate the value of hydropower.

- Work with partners to quantify the value of hydropower provided to customers and the BES.
- Develop a facility value matrix to inform decisions.
- Investigate new marketing strategies with Power Marketing Administration partners.

Objective 2: Work with our partners to educate and engage the public in communicating the importance of hydropower.

- Communicate the benefits of hydropower as part of national power delivery and security.
- Work with partners, such as the United States Army Corps of Engineers and the Department of Energy, to promote the benefits of hydropower as part of the suite of power resources.
- Conduct targeted communication campaigns to educate and mobilize the public to support hydropower as a clean renewable energy resource.

Goal 2: Customer satisfaction is core to the long-term success of Reclamation hydropower.

Over the past century, Reclamation has remained committed to providing value to Reclamation customers and the nation. Reclamation will continue to keep employees and systems safe, increase operational transparency with customers, and strive to contain costs through increased planning efforts, optimized maintenance, and lifecycle management of hydropower assets.

Objective 1: Achieve cost stability of hydropower resources while maintaining high reliability.

- Establish a world class asset management program by using a risk-based data driven decision making framework to ensure successful life cycle management.
- Invest in hydropower technology based on values derived from quantifying both direct and indirect hydropower benefits.
- Implement a strategy for sharing ideas, best practices and experiences across all regions to achieve Reclamation's hydropower goals.

Objective 2: Maximize benefits of hydropower through increased efficiencies.

- Increase benefits through increased planning efforts, optimized maintenance, and lifecycle management of hydropower assets.
- Increase benefits through optimized use of water, outage management and coordination, increased efficiencies, and supporting new marketing strategies.
- Achieve hydropower production goals through innovative methods, new approaches and/or techniques, and strategies.

Objective 3: Enhance scientific capacity and technological tools necessary to increase hydropower performance.

- Regularly review and assess hydropower performance using a data driven approach to measure results.
- Identify and assess existing Reclamation scientific and technical capacities relative to meeting current and future challenges in delivering reliable power.
- Increase scientific collaboration with partners and expand educational opportunities through training and certification programs.
- Working with partners, identify essential research needs and continue to refine scientific and technological information and tools critical to efficient hydropower production.
- Develop an effective data management strategy to support this objective.

Objective 4: Maximize collaboration with partners to maintain cutting edge technology and efficiencies in providing hydropower.

- Work with stakeholders, customers, and partners to identify new approaches to common problems through increased communication and collaboration.

- Collaborate with partners to develop and implement best management practices to achieve operational efficiency goals.
- Annually review operational efficiencies through data driven analysis.
- Set annual targets for improved efficiencies in hydropower performance.

Goal 3: Invest in our people to ensure Reclamation continues to employ a skilled, dedicated, and capable workforce.

Provide a work environment, culture, and vision to ensure Reclamation continues to employ a qualified, dedicated, and motivated workforce to fulfill the hydropower mission. Reclamation’s workforce is our most important asset. It is only with a well-qualified, innovative, and supported workforce that Reclamation can achieve the agency mission of reliably delivering water and power to the West. Reclamation must provide a safe working environment that values our people and sets them up for success.

Objective 1: Cultivate and enhance an effective and diverse workforce to meet current and future challenges in delivering reliable water and power.

- Identify core capabilities for each region/area office and establish a staffing and training plan to enable employees to meet Reclamation’s diverse and expanding scientific, technological, and leadership needs.
- Develop a targeted recruitment strategy to reach out to talented applicants from all segments of the population.
- Develop cross training opportunities among regions – share experiences and augment personnel on critical work across the organization.

Objective 2: Provide a positive and safe work environment to support employee development and performance.

- Develop opportunities for employee input for improved employee satisfaction.
- Assess opportunities to remove hazards from powerplants through technological innovation and advanced engineering.
- Provide enhanced education and advancement opportunities to support employee development and performance.
- Provide tools and applications that can position our employees for success.

Next Steps

In order to achieve these objectives, an action plan will be created that will be dynamic and allow Reclamation to adapt to changing market conditions while providing value to our customers. The final action plan will be developed by the Hydropower Management Team in fiscal year 2021.

Conclusion

This strategy will help position Reclamation's hydropower program for success now and into the future.