

MEMORANDUM OF UNDERSTANDING FOR FEDERAL HYDROPOWER
Among
THE DEPARTMENT OF ENERGY,
THE DEPARTMENT OF THE INTERIOR
And
THE DEPARTMENT OF THE ARMY

Purpose: There is an opportunity for the U.S. Department of Energy (DOE) through the Water Power Technology Office, the Department of the Interior (DOI) through the U.S. Bureau of Reclamation, and the Department of the Army (DOA) through the U.S. Army Corps of Engineers (USACE) (individually “Agency” and collectively the “Agencies”) to collaborate on common issues and leverage resources and efforts to the benefit of the Agencies and ultimately to the public. Under this Memorandum of Understanding for Hydropower (MOU), the Agencies would facilitate enhanced collaboration and coordination on technology research, development, and demonstration (RD&D), and also identify and potentially engage in mutually beneficial research projects that support individual Agency core missions. This MOU establishes topic areas to help position Federal hydropower to meet the Nation’s need for reliable and affordable renewable hydropower through a partnership of collaboration between the Agencies engaging in similar goals and aligning ongoing and future efforts.

I. Background

The energy landscape is evolving quickly with the inclusion of distributed renewable energy sources, utility-scale renewables, regional markets, the need for hydropower as a resilience resource and new alternative utility business models. The Agencies face challenges in adapting and upgrading their aging infrastructure and operational strategies. Technology RD&D is an important mechanism to support such adaptations and upgrades.

II. Commitments

Upon ratifying, the Agencies intend to collaborate to create an action plan outlining specific projects and activities under each topic area within ninety (90) days. The action plan will be designed to adapt hydropower to changing markets, environmental concerns, and water issues, and to facilitate the influx of non-dispatchable generation resources penetrating the bulk electric system. Projects and activities developed under this action plan will use data driven, risk-based decision making to inform a path forward for any deliverables. Topic Areas for consideration include:

- 1. Asset Management:** Asset management is a broad term covering many areas of hydropower and accompanying transmission grid operations, maintenance, and capital improvement programs. The Agencies will focus on areas of collaboration for digitalization, maintenance management, asset condition health monitoring, and failure-mode analysis to maximize the value of investments in hydropower, increase reliability of generation and transmission assets, and minimize labor-hours required to keep assets in working order.
- 2. Value of Hydropower:** Hydropower provides value to the bulk electric system beyond clean energy generation through a variety of critical ancillary services, such as frequency support, black start capability, spinning reserve, and flexibility to respond to system disturbances. These

ancillary services support other generation resources, especially non-dispatchable renewable energy resources. The full extent of the value of these services is not well understood. Quantifying the value of service will enable the Agencies to define it solely beyond present energy generation rates, and communicate the value to the greater hydropower stakeholder community. The Agencies will collaborate with federal hydropower customers on this Topic Area.

3. **Workforce:** The workforce employed by the Agencies is the most critical asset in delivering the Agencies' mission essential functions related to power. The Agencies share a training need to attract and develop qualified, safe, and knowledgeable employees, for both new and continuing education opportunities. Under this MOU, the Agencies intend to analyze and expand training needs within the industry, and develop opportunities to deploy collaborative training. In addition, the Agencies may collaborate on the development of recruiting strategies to attract qualified specialists necessary to ensure a diverse and multifaceted Federal hydropower workforce.
4. **Water Supply Reliability:** The United States faces water reliability challenges. Widespread drought, increased populations, aging infrastructure, and environmental requirements all strain existing water and hydropower resources. Adequate and safe water supplies are fundamental to the health, economy, and security of the country. The Agencies plan to work together to share information and identify areas of collaboration and to understand and build resilience into water-energy systems.
5. **Environmental Outcomes:** The Agencies seek to understand and optimize environmental outcomes and achieve cost stability through technology development, deployment, data collection, monitoring, modeling, and best available science. Because environmental costs make up a significant portion of Federal hydropower energy rates, the Agencies intend to investigate new methods and technologies to meet environmental standards at a lower cost while maintaining operational flexibility and generation.

Power Marketing Administration Collaboration: The Agencies will collaborate with the Power Marketing Administrations on the above Topics Areas as they continue to explore opportunities to retain and improve Federal hydropower value to the nation and the Federal hydropower customers.

III. Effective Date, Modification and Termination

- This MOU will become effective upon the date of the last signature and remain in effect for a period of five (5) years at which point the action plan will be reviewed and revised by all Agencies.
- Modifications to this MOU may be proposed by any signatory Agency (or designated representative). Proposals for modification will be circulated to the receiving Agencies for a thirty (30) calendar day period of review. Approval of modifications will be indicated by written acceptance by the signatory Agencies. Following acceptance by all Agencies, a revised MOU or amendment to the MOU will be circulated for execution.
- Participation in this MOU may be terminated by any signatory Agency. As a courtesy to the other signatory Agencies, a terminating Agency will endeavor to provide sixty (60) calendar days after providing written notice of such termination to the other signatory Agencies.

- This MOU is not transferable except with the written consent of the Agencies.
- The Following points of contact will be used by the Agencies to communicate in the implementation of this MOU. Each Agency may change its point of contact upon reasonable notice to the other Agency.
 - For the U.S. Department of Energy: Timothy Welch (timothy.welch@ee.doe.gov)
 - For the U.S. Department of the Interior: Michael Pulskamp (mpulskamp@usbr.gov)
 - For the U.S. Department of the Army, U.S. Army Corps of Engineers: Daniel Rabon (daniel.w.rabon@usace.army.mil)

IV. Quantifications and Limitations

- Participation in this process does not imply endorsement of a proposed plan or project. Nothing in this MOU is intended to diminish, modify, or otherwise affect the statutory or regulatory authorities of the signatory Agencies.
- This MOU is strictly for internal management purposes for each of the Agencies. It is not legally enforceable and shall not be construed to create any legal obligation on the part of any of the Agencies. This MOU shall not be construed to provide a private right or cause of action for or by any person or entity.
- This MOU is not a fiscal obligation document. Nothing in this MOU authorizes or is intended to obligate the Agencies to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value. Each Agency will provide its own resources to meet the outlined objectives in an amount that they deem acceptable.
- When the Agencies agree to undertake joint projects with defined specific projects and goals, they will develop a separate written agreement for each project setting out each Agency's contribution, deliverables, and responsibilities. The Agencies will designate a lead pursuant to One Federal Decision guidance where appropriate.
- This MOU in no way restricts any of the Agencies from participating in any activity with other public or private agencies, organizations, or individuals.
- All agreements herein are subject to, and will be carried out in compliance with, all applicable laws, regulations, and other legal requirements.
- Any disputes relating to this MOU will, subject to applicable law, regulation, and other legal requirements, be resolved by consultation between the Agencies.
- As used in this document, the term "collaboration" shall not include any practice prohibited by fiscal statutes including 31 U.S.C. § 1552, 31 U.S.C. § 1301, 31 U.S.C. § 1341, 31 U.S.C. § 1342, nor by any fiscal or ethics regulations specifically applicable to the individual Agencies, and shall not include any preferential treatment of any private organization nor access to any non-public, pre-decisional or procurement sensitive information. Further, all limitations stipulated in the Federal Rules of Acquisition are to be made for any collaboration under this memorandum and any addenda thereof.
- All partnerships and arrangements with private entities will comply with all authorities regulating relationships between the Federal Government and private entities.
- Nothing in this MOU is intended to create a committee subject to the requirements of the Federal Advisory Committee Act (5 U.S.C. App).
- It is expressly understood and agreed that this MOU embodies the entire understanding between the Agencies regarding the MOU's subject matter.

- This MOU may be executed in counterparts, each of which shall be an original, but all of which shall constitute one and the same instrument.
- Under this Agreement, the Agencies may consult with non-Federal employees and entities, such as hydropower customers and other stakeholders, on an as needed basis, for the purpose of exchanging facts or information, or to obtain individual opinions and feedback and not for the purpose of obtaining consensus advice.

V. Statutory Authorities

- DOE enters into this MOU under the authority of Section 646 of the Department of Energy Organization Act (Pub.L.95-91), as amended (42 U.S.C. §7256).
- Reclamation enters into this MOU under the authority of the Reclamation Act of 1902 (32 Stat. 388.) and Acts amendatory thereof and supplementary thereto.
- USACE enters into the MOU under Section 212 of the Water Resources Development Act of 2000 (33 U.S.C. §2321a) and the various project authorizations for hydropower development.

Signatures:

Signature

Date

Daniel R Simmons
Assistant Secretary, Office of Energy Efficiency and Renewable Energy
U.S. Department of Energy

Signature

Date

Brenda Burman
Commissioner, Bureau of Reclamation
U.S. Department of the Interior

Signature

Date

Ryan Fisher
Principal Deputy Assistant Secretary of the Army for Civil Works
U.S. Department of the Army