Building a National Laboratory Consortium to Address Regional Energy and Water Resource Challenges

Hydropower and Hydrokinetic Office

NATIONAL LABORATORY CALL FOR APPLICATIONS

National Lab Call for Fiscal Year 2026

US Department of Energy

Office of Critical Minerals and Energy Innovation

Overview

The U.S. Department of Energy's (DOE) Hydropower and Hydrokinetic Office (H2O) is requesting national laboratory proposals to build a new consortium focused on addressing challenges to integrated energy-water resources. The selected **lab consortium will work with H2O to enable planning, demonstration, and implementation of regional energy-water pilot projects** that concurrently address technology, coordination, and economic needs within regions. These pilots will address major energy-water challenges, enabling high-impact and near-term improvements across energy and water sectors. This call is led by H2O's Energy Water Resources (EWR) activity area, which enables research and testing of integrated solutions to advance power and water system performance at regional and national scales.

Purpose

Energy systems rely on water systems to operate, with power production and agriculture standing out as the two largest sources of water withdrawals. Concurrently, the movement and treatment of water require significant energy inputs, especially as water supplies become increasingly limited and access dependent on intensive processes (e.g., desalination, surface and groundwater pumping, reclaimed water treatment). As risks to one resource increase, the other is put under pressure. Furthermore, there are multiple industries (e.g., data centers) that require both resources to operate successfully. The combination of growing demands and stressors are driving instability for energy and water systems, highlighting the need for integrated management.

Due to the complex and variable interconnections between energy and water, effective solutions must be customized on a regional scale, informed by local context, and in alignment with the needs of relevant end-users, sectors, and stakeholders. Effectively addressing integrated regional energy-water challenges requires an *agile and transdisciplinary* team that can respond quickly to evolving opportunities and priorities. To meet this need, H2O is building a lab consortium with the expertise and capabilities to launch pilot projects that implement regional energy-water solutions towards nationwide impact. This call seeks one application from each national lab that is interested in joining a team to identify challenges and design and pilot energy-water solutions at regional scales.

Through these pilots, H2O seeks to:

- Test and implement energy-water technologies that increase overall system reliability and affordability
- Demonstrate regional technology innovation through improved energy-water integration that increases productivity, and coordination between both resources

- Partner with multiple organizations to demonstrate energy-water solutions that align with crosscutting regional needs
- Advance security and accessibility through harmonized energy and water information systems that inform decision-making

In the long term, H2O will lead and collaborate with the labs to develop shared networks of energy-water resources, expertise, and capabilities to rapidly identify needs, test technologies, and implement solutions that are both specific to regional challenges and coordinated across the nation. Across the pilots, H2O aims to:

- Identify opportunities to scale, replicate, and cross-pollinate approaches to other regions
- Realize energy- and cost-savings for varied source waters, depending on regional stressors and challenges (e.g., flooding versus drought, availability of different energy supplies)
- Spur new opportunities for economic growth and cross-sector development within regions
- Enable increased and reliable energy supply through untapped potential of water systems and other opportunities for energy innovation across the nation

Key Dates (all dates tentative)

KEY DATES	
Lab Call Release	March 9, 2026
Lab Call Webinar	March 23, 2026
Proposal Submission Deadline	May 11, 2026
Selection Notification	June 15, 2026
Consortium Meeting	Week of July 20th, 2026
Anticipated Projects Start	September 1, 2026

Funding Information

The total H2O budget available for the EWR multi-laboratory consortium is **up to $20M**, which will span a 3-5 year period of performance.

Teaming

All DOE national labs are eligible to submit proposals. Only one application per national laboratory is allowed. Selected labs will be teamed up in alignment with specific pilots and based on H2O priorities, expert reviews, and application complementarity. However, during the application phase, applicants are restricted from teaming with other labs.

Lab Call Details

The lab call application is on behalf of the national lab and must consist of three sections, describing the national lab's energy-water expertise, idea for a regional pilot, and teaming abilities. For Section 1, information should reflect the national lab as a whole while in Section 3, information can be distinguished between the primary team supporting the call versus broader cohort of resources at the national lab. More information about these sections is captured below and additional details can be found in the FAQs section.

Section 1: Establish the energy-water expertise of the national laboratory. In this section, please describe energy-water activities that the national lab has engaged in, including tools, projects, pilots, capabilities, facilities, and scientific advancements. Where possible, include information about the sectors, end-users, and other beneficiaries engaged in relation to these activities.

Section 2: Provide a regional pilot idea. In this section, please describe one possible regional pilot idea, including specific region(s) where it could be implemented. Provide details about how this idea aligns with the EWR pilot objectives (see "Overview and Purpose" subsection above) and the overall outcomes or success measures that could be achieved through this pilot. Also, describe the resources needed and logistical considerations for pilot implementation, including a brief timeline, partnerships required (and why), and prior investments and/or capabilities that could be leveraged.

Section 3: Describe teaming capabilities. In this section, please describe the ability of the primary team to be effective team players. Describe the members' history and ability to accomplish objectives, including working across different missions of your national lab or working with other organizations as it applies to energy-water activities (e.g., other national labs, academia, communities, industry, non-profits, and government agencies). Where applicable, detail the team's approach to collaboration (including when they have served as lead versus serves as a team member) and how they have navigated/addressed prior teaming challenges.

(Optional) Supplementary Information: In this section, please feel free to capture additional details in support of the primary application. This can include resumes for the primary team members, information about impact/outcomes, and references.

Application Submission and Review Information

Submission Details

Each national laboratory can submit one application to this lab call.

The primary application is limited to 11 pages, including a cover page and 10 pages total that captures information for the 3 sections. Recommended section headers for the lab call are included at the bottom of this announcement. Supplementary information (not included in the page limit) may also be included. Completed applications should be submitted as a single PDF via email to Energy-WaterResilience@doe.gov. Please use the following naming conventions:

- File Name: "RegionalEWR_PilotTeamApplicant_[LabName]"
- Email Subject: "Regional EWR Lab Call: Pilot Team Application for [Lab Name]"

Submitted proposals will be reviewed by a review panel (consisting of both internal and external reviewers). A follow-on interview may be requested to further discuss their applications. Labs will receive written notification indicating whether they are selected to be part of the EWR team. The selected labs will then be invited to a kickoff meeting with the full EWR Lab Consortium to begin project planning activities.

Review Criteria

Criterion 1: National Lab EW Expertise (40%)

- Tools and capabilities developed
- Scientific advancements across sectors
- Sectors, end-users, and other beneficiaries engaged
- Prior pilots led by the national lab

Criterion 2: Regional Pilot Idea (35%)

- Specific region(s) of interest and rationale for selection
- Pilot objectives and activities alignment with EW needs
- Intended outcomes and success metrics for pilot
- Timeline and partnership details for pilot implementation

Criterion 3: Teaming Capabilities (25%)

- Ability of the primary team to work across national lab to support energy-water objectives
- Approach to partnerships, collaborations, and engagements
- History of working with other organizations
- Description of prior teaming challenge(s) and responses

Frequently Asked Questions

How does the EWR work align with H2O's broader mission?

The EWR portfolio works across energy and water technologies to understand and enable enhanced regional energy-water integration at a system-level. EWR focuses on broader cross-sector energy-water advancement including but not limited to water treatment and distribution, municipal water supply, irrigation modernization, integrated power and water resource planning, and more.

Is the application intended to represent the entire National Lab or only certain members within it?

The application is on behalf of the entire national lab. However, we recognize that not everyone from a national lab will be engaged in the EWR activities. Thus, where possible (e.g., Section 3), applications should distinguish between the primary contributors for the consortium activities and other general capabilities at the national lab that could be tapped as needed.

For the pilot idea, what type of topics are of interest to the call?

Regional EWR pilots will focus on multiple dimensions of energy-water systems. The proposed idea in the application can focus on various topics, including but not limited to improved performance of specific energy-water systems, increasing energy production pathways, and enabling energy access to key sectors. Each idea, however, should explicitly incorporate and address the cross-cutting role of water challenges and systems for energy activities.

For the pilot idea, what types of rationale can be used to support selection?

The rationale for a pilot idea can span multiple reasons, but must include alignment with current DOE priorities, engagement of partners, and achievability of outcomes within a certain timeline. We encourage inclusion of all relevant details to help demonstrate the relevance of the pilot idea.

For the pilot idea, what types of success measures are of interest?

Exact metrics and target outcomes are often region- and system-dependent. Measures to consider for an EWR pilot idea include: increased energy capacity (megawatt-hours); expanded energy sources (# of different energy supplies); improvements to water quality (multiple physical, chemical, biological indicators); decreased costs for energy or drinking water supplies ($ reduction in bills); reductions in water loss (millions of gallons per day); demographics of population(s) served (% of rural versus urban ratepayers); opportunity costs ($); and technology commercialization. We encourage each application to select those metric(s) that are most appropriate for the proposed pilot idea.

For the pilot idea, what types of timelines are encouraged?

While the overall pilot may span 3-5 years, we encourage each idea to consider different milestones that can be achieved over the course of the project. Depending on the idea, this could be an accomplishment within the first 6 months, 1-2 years, 3-4 years, and so on. For the pilot idea, please also include any go/no-go milestones that could influence its overall success.

What types of partners should we capture in the application?

We encourage inclusion of various types of community and industry partnerships, including but not limited to water utilities, electric utilities, co-operatives, energy developers, water technology developers, farmers, irrigators, industry, technology and data companies, state and federal agencies, academia, non-profit organizations, community-based organizations, tribal organizations, universities, and military installations. Partners within the application should capture those with whom your national lab has a prior/existing relationship with as well as those that are willing to partner on possible EWR pilot ideas.

Can we include other national labs on our application?

No, national labs cannot apply in partnership with another national lab. However, information about prior national lab collaborations could be captured in the Teaming Capabilities section of the proposal.

How do we best demonstrate our prior/existing/possible partnerships?

We do not have a formal requirement for how partnerships are demonstrated. Partnership details could be captured within the primary application (e.g., under the Teaming Capabilities section) or in the supplemental section (e.g., as letters of support). If details are only captured in the primary application, please be sure to include references and details for specific points of contact. For those partnerships related to the pilot idea, we recommend including a description of specific team members .

What type of resource information is being requested for the pilot idea?

Resource details can include (but is not limited to) information about technical capabilities, specific personnel/expertise, equipment, facilities, and partnerships that would be critical for successful implementation of the pilot.

Do we need a budget for the pilot idea?

No. Budget details are not requested for the proposal submission. We are more interested in understanding the specific objectives and timeline of the pilot idea as part of the initial laboratory team selection process.

When a national lab gets selected to be part of the team, does that mean that the technical idea they proposed is also selected?

Not necessarily. Ideas submitted by the national labs will be discussed as a team to identify those that are best aligned with EWR priorities. This may include combining or rescoping

submitted ideas to best realize opportunities between selected labs, relevant partnerships, and funding availability.

How many labs will be selected?

The specific number of labs selected will be determined based on H2O priorities, proposal reviews, and proposal complementarity.

How much funding will each lab be awarded?

The exact amount allocated to each lab will be determined based on the lab's role within the overall consortium as well as their contributions to pilot activities.

Post selection, how will the lab consortium objectives be created?

Technical objectives of the lab consortium will be finalized through discussions with the selected labs and H2O. A team meeting will take place between selected labs and H2O to discuss specific pilots, objectives, and milestones. Follow-on activities may also require additional information, to inform partnerships and specific budgets (including cost share).

Recommended Section Headings

1. Executive Summary / Overview
2. National Lab Energy-Water Expertise
3. Regional Pilot Idea
4. Teaming Capabilities
5. Supplementary Information