

Office of Clean Energy Demonstrations

Proposed Appropriation Language

For Department of Energy expenses, including the purchase, construction, and acquisition of plant and capital equipment and other expenses necessary for clean energy demonstrations in carrying out the purposes of the Department of Energy Organization Act (42 U.S.C. 7101 et seq.), including the acquisition or condemnation of any real property or any facility or for plant or facility acquisition, construction, or expansion, \$214,052,000, to remain available until expended: Provided, That of such amount, \$25,000,000 shall be available until September 30, 2024, for program direction.

Public Law Authorizations

Public Law 95-91, "Department of Energy Organization Act", 1977

Public Law 106-554, "Consolidated Appropriations Act, 2001"

Public Law 107-50, "Small Business Technology Transfer Program Reauthorization Act of 2001"

Public Law 109-58, "Energy Policy Act of 2005"

Public Law 110-140, "Energy Independence and Security Act of 2007"

Public Law 112-81, "National Defense Authorization Act for Fiscal Year 2012"

Public Law 116-260, "Energy Act of 2020"

Public Law 117-58, "Infrastructure Investment and Jobs Act of 2021"

Office of Clean Energy Demonstrations

	(\$K)	
FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request
0	0	214,052

Overview

The mission of the Office of Clean Energy Demonstrations (OCED) is to deliver clean energy and industrial decarbonization demonstration projects at scale in partnership with the private sector to launch or accelerate market adoption and deployment of technologies, as part of an equitable transition to a decarbonized energy system and economy. OCED was established in December 2021 and was authorized and initially funded through the Bipartisan Infrastructure Law (BIL). The founding of OCED builds on the Department of Energy's (DOE) expertise in clean energy research and development and expands DOE's scope to fill a critical innovation gap on the path to net-zero emissions by 2050.

OCED is a technology-neutral office that serves as a project management oversight center of excellence, implementing key multi-billion-dollar demonstration projects funded via the BIL, as well as supporting the applied programs and other offices to ensure a consistent approach to implementing capital intensive late-stage technology demonstrations. OCED supports demonstration projects that have viability at scale and an expectation of achieving cost competitiveness and bankability in the market over time. OCED investments are part of a clear progression and transition between the research, development, and laboratory and pilot-scale demonstration projects within DOE technology offices and initial full and commercial-scale deployments supported by the private sector or other programs, such as the Loan Programs Office, ensuring coherent strategies for advancing and deploying clean energy technologies and systems. Funding decisions are made to support scalable outcomes that lead to commercialization and deployment.

OCED makes funding decisions with the understanding that substantial risk is involved, and that known and unknown risks factors will impact project outcomes. OCED therefore employs a staged approach to fund demonstrations by dividing project scope into phases, each with defined milestones, schedule, and costs that connect directly to the goals, cost estimate, and schedule for the overall project. OCED controls funding at the project level, providing appropriate flexibility in determining phased funding levels as projects pass through critical go/no go decisions or down-select points informed by rigorous project oversight and management practices. By adhering to the risk profile being established for OCED, where some projects may have more risks than others, OCED will consider off-ramping projects when necessary if it determines the risks of a project exceed this profile. To ensure transparency, OCED tracks and manages detailed information on each project and its phase status which it will use in the management and oversight of demonstration projects.

Highlights of the FY 2023 Budget Request

The FY 2023 Budget requests \$214,052,000 in annual appropriations for OCED to support the continued development of a technology-neutral portfolio of projects alongside its BIL-funded work. Such investments will complement, but not duplicate, the demonstration efforts supported under BIL and will allow OCED to develop business practices and systems to ensure effective oversight of all OCED's portfolio.

Clean Energy Demonstrations (\$189,052,000): OCED funds activities to accelerate and prove the design, construction, and operation of high-impact demonstration projects, at or near a commercial-scale, with the purpose of generating publicly available technical, economic, and environmental performance data essential to developers, financiers, regulators, policymakers, utilities, manufacturers, end users and other stakeholders. FY 2023 planned investments include the following:

Office of Clean Energy Demonstrations/ Overview

- Energy Demonstrations (\$150,052,000): OCED will initiate a new competition in FY 2023 to support commercial-scale projects that demonstrate technologies, or the manufacturing of technologies that integrate renewable and distributed energy systems with broader energy networks. The goal of this new investment area is to support demonstrations that de-risk technologies needed to manage variable generation; control flexible loads; and integrate energy storage electric vehicle (EV) charging, and other facilities into the U.S. transmission and distribution grids. This may include support for demonstrations of innovative hybrid generation systems, as well as the utilization of energy storage technologies, EV charging, controllable loads from buildings and industrial facilities, and other approaches for cost effective integration of renewable energy, as well as the demonstration of operational flexibility, consumer behavior changes, and grid services provision. These investments may also support demonstrations of next-generation manufacturing technologies, process efficiency improvements, and improved supply chain reliability and resiliency in consultation with the new DOE Office of Manufacturing and Energy Supply Chains.
- Advanced Reactor Demonstrations (\$25,000,000): In addition to funding provided via the BIL, OCED will support the Advanced Reactor Demonstration Program. This activity focuses Departmental and non-federal resources on the construction of demonstration reactors in the near- and mid-term that are safe and affordable to build and operate. As part of DOE's consolidation of support for these demonstration projects into OCED from the Office of Nuclear Energy, DOE requests funding for the ARDP demonstrations in OCED. FY 2023 funding will enable OCED to provide additional project management and technical oversight. While BIL provided significant funding that will support the two cost-shared awards, annual appropriations are necessary for DOE to fully fund the likely federal contribution for later phases of the two projects.
- Demonstration Planning and Analysis (\$14,000,000): As part of OCED's implementation of IJJA, the Request includes funding for technical and analysis support including funding for NEPA support and implementation costs. This funding will be used to ensure OCED has the proper support needed to expedite the demonstration activities supported through IJJA and other demonstrations supported by OCED in FY 2023.

Program Direction (\$25,000,000): Program Direction funds Federal salaries and benefits, including staff training and performance awards, travel, Working Capital Fund expenses, associated support services contracts, and administrative expenses to execute the OCED mission. FY 2023 funding will enable a focus on developing business practices and systems to ensure effective oversight of OCED's portfolio.

DOE Reorganization

On February 9, 2022, DOE announced an organizational realignment to ensure that the Department has the structure needed to effectively implement the clean energy investments in the BIL. The new organizational structure establishes two Under Secretaries: one focused on fundamental science and clean energy innovation and the other focused on deploying clean energy infrastructure—supporting DOE's ongoing work to achieve carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050.

OCED was organized into the new Under Secretary for Infrastructure (S3) given the focus on first-of-a-kind large-scale demonstration projects to help move clean energy technologies out of the lab, into the field, and to market at scale so they can make a real-world impact. The S3 organization focuses on deploying clean energy infrastructure in pursuit of national goals for affordable and reliable energy, creating high quality jobs, enhancing U.S. manufacturing, and addressing the climate crisis. Its efforts support achieving carbon-free electricity in the U.S. by 2035 and a net zero economy by 2050 and delivering substantial benefits to the communities that are frequently left behind. S3 provides skilled teams in energy planning; energy security; infrastructure financing; project development; project management; clean energy supply chains; state, community, and tribal engagement; and other key areas critical to the success of demonstration and deployment efforts appropriated through the historic Bipartisan Infrastructure Law and annual appropriations. OCED will work with the other offices in this organization to engage and work in partnership with a diverse set of stakeholders as it stewards and seeks the greatest benefits from federal funding.

**Office of Clean Energy Demonstrations
Funding (\$K)**

FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted (\$)	FY 2023 Request vs FY 2021 Enacted (%)
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Clean Energy Demonstrations

Clean Energy Demonstrations	0	0	189,052	+189,052	N/A
Program Direction	0	0	25,000	+25,000	N/A
Total, Office of Clean Energy Demonstrations	0	0	214,052	+214,052	N/A

SBIR/STTR:

FY 2021 Enacted: SBIR \$0; STTR: \$0

FY 2022 Annualized CR: SBIR \$0; STTR: \$0

FY 2023 Request: SBIR \$5,344,000; STTR \$751,500

**Office of Clean Energy Demonstrations
Funding (\$K)**

FY 2023 Request vs FY 2021 Enacted

Clean Energy Demonstrations

No funding in FY 2021

+\$189,052

Program Direction

No funding in FY 2021.

+\$25,000

Total, Office of Clean Energy Demonstrations

+\$214,052

Future Years Energy Program (FYEP)

(\$K)

	FY 2023 Request	FY 2024	FY 2025	FY 2026	FY 2027
Office of Clean Energy Demonstrations	214,052	219,000	224,000	229,000	234,000

Outyear Priorities and Assumptions

In the FY 2012 Consolidated Appropriations Act (P.L. 112-74), Congress directed the Department to include a future-years energy program (FYEP) in subsequent requests that reflects the proposed appropriations for five years. This FYEP shows outyear funding for each account for FY 2024 - FY 2027. The outyear funding levels use the growth rates from and match the outyear account totals published in the FY 2023 President’s Budget for both the 050 and non-050 accounts. Actual future budget request levels will be determined as part of the annual budget process.

OCED priorities in the outyears include the following:

- Support new full and commercial-scale demonstration projects that are aligned with addressing clean energy and industrial decarbonization challenges that complement its portfolio of BIL-funded demonstrations. OCED will identify topics for annual demonstration competitions through rigorous portfolio analysis of earlier stage activities supported by the DOE applied energy offices and of challenges as identified by industry and other stakeholders.
- Sustain capability as a DOE project management oversight center of excellence, supporting the applied programs and other offices to ensure a consistent approach to implementing capital intensive technology demonstrations. This will include continued support for expertise in project management, portfolio analysis, and systems needed to manage and execute large-scale demonstration projects
- Support oversight and management of BIL funding and implementation as projects transition into the oversight and management phases.

Office of Clean Energy Demonstrations
Clean Energy Demonstrations

Description

The Clean Energy Demonstrations program represents OCED's support for demonstrations. Each year, OCED will issue at least one technology neutral commercial-scale demonstration competition funded from this program, focused on a crosscutting clean energy or industrial decarbonization investment opportunity. In addition, funding will be used to support previously awarded demonstrations as part of OCED's staged approach to fund demonstrations by dividing project scope into independently useful segments or phases, each with defined milestones, schedule, and costs that connect directly to the goals, cost estimate, and schedule for the overall project. Clean Energy Demonstrations also provides the necessary resources for OCED to evaluate the environmental and related social and economic effects of demonstrations currently under development, including those funded through the BIL.

Energy Demonstrations

This activity supports OCED's annual competition for demonstrations. Each year OCED will launch at least one new competition associated with a crosscutting clean energy or industrial decarbonization investment opportunity. OCED chooses topics, which have the greatest potential for both market adoption and impact. Award decisions are made with an aim to accelerate and prove the design, construction, and operation of high-impact demonstration projects, at or near a commercial-scale, with the purpose of providing essential technical, economic, and environmental performance data to developers, financiers, regulators, policymakers, utilities, manufacturers, end users and other energy decisionmakers.

Advanced Reactor Demonstrations

This activity supports funding for ongoing Advanced Reactor Demonstration Program (ARDP) demonstration projects managed by OCED.

- *Sodium Reactor (TerraPower LLC)*: This project is demonstrating a sodium-cooled fast reactor that uses thermal energy storage for flexible electricity output. The Sodium Reactor project is scheduled for completion in mid-2028.
- *Xe-100 Reactor (X-energy)*: This project is demonstrating a high temperature gas-cooled reactor which upon completion will provide flexible electricity output and carbon-free process heat relevant to a wide range of industrial applications. The X-100 Reactor project is currently scheduled for completion in late 2027.

Demonstration Planning and Analysis

This activity provides resources for activities such as National Environmental Policy Act (NEPA) analysis and support for ongoing demonstration projects. Such funding ensures that projects underway have adequate resources to comply with local and federal policies and regulations.

Departmental Crosscutting Activities:

OCED's Clean Energy Demonstrations program supports the following DOE-wide crosscutting investments:

- **Grid Modernization (\$175,052,000):** In support of the goals of this crosscutting investment, OCED will support a competitive demonstration solicitation with a focus on support full-scale and commercial-scale demonstrations related to the integration of renewable and distributed energy systems. OCED will also continue to support its ongoing ARDP demonstration, a critical component of DOE's strategy to meet Administration's goals of 100 percent clean energy generation by 2035 and net-zero emissions by 2050 by enabling the deployment of advanced clean nuclear energy.
- **Energy Storage (\$12,500,000):** As part of OCED's continued stewardship of the Advanced Reactor Demonstration Program demonstration projects, OCED will continue to support the development of the Natrium sodium-cooled fast reactor demonstration. This project will incorporate a molten salt thermal energy storage system that could be used to store energy when demand is low and increase electricity output of the reactor when demand increases. While BIL provided significant funding that will support this cost-shared award, annual appropriations are necessary for DOE to fully fund the likely federal contribution for later phases of the project.

**Clean Energy Demonstrations
Program Support**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Support \$0	\$189,052,000	+\$189,052,000
Energy Challenge Demonstrations	\$150,052,000	+\$150,052,000
<ul style="list-style-type: none"> No funding. 	<ul style="list-style-type: none"> Initiate a new competition to support demonstrations that integrate renewable and distributed energy systems. The goal of this investment will be to de-risk technologies needed to manage variable generation; control flexible loads; and integrate energy storage electric vehicle (EV) charging, and other facilities into the U.S. transmission and distribution grids. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding for this activity.
Advanced Reactor Demonstration Program	\$25,000,000	+\$25,000,000
<ul style="list-style-type: none"> No funding in OCED. Management and oversight of this program was transferred to OCED from the Office of Nuclear Energy in FY 2022. 	<ul style="list-style-type: none"> As part of the transfer of funding for the Advanced Reactor Demonstration Program (ARDP) from Office of Nuclear Energy to OCED, provide funding for additional project management and technical oversight and meet commitments for the continued construction of the two demonstrations to ensure these awards can meet the program goals established by Congress. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding within OCED for this activity.
Demonstration Planning and Analysis	\$14,000,000	+\$14,000,000
<ul style="list-style-type: none"> No funding. 	<ul style="list-style-type: none"> Initiate technical and analysis support to expedite approvals for BIL-funded and other demonstrations supported by OCED in FY 2023. 	<ul style="list-style-type: none"> FY 2023 is the first year of funding for this activity.

Clean Energy Demonstrations Program Direction

Overview

Program Direction enables OCED to maintain and support a world-class Federal workforce that supports its mission. The FY 2023 Request provides resources for program and project management, oversight activities, contract administration, workforce management, IT support, and Headquarters facilities and infrastructure costs.

Highlights of the FY 2023 Budget Request

The FY 2023 OCED Program Direction Budget Request will:

- Support 90 FTE needed to continue to implement development, execution, and oversight of crosscutting OCED activities and investments not directly tied to the provisions of the BIL.
- Support strengthening OCED's overall performance, organization, budget, operations, human capital, and project management as the office continues to grow in support of its mission.
- Support the development and issuance of competitive solicitations for demonstration(s) of commercial-scale clean energy and/or industrial decarbonization technologies.
- Support project management activities and coordination with the applied offices on the execution and management of demonstration projects.

Salaries and Benefits: The Request assumes a 4.6 percent federal staff pay increase and annualization of the 2.7 percent increase from 2022 to support up to 90 FTE.

Travel: The Request provides for travel for project oversight and outreach and information exchanges with stakeholders including industry and energy communities to ensure maximum impact of investments and future deployment.

Support Services: The Request includes funds for contract support to implement programmatic priorities. This includes funding for technical and management support to develop standard operating procedures, business practices, and OCED's project management oversight capabilities.

Other Related Expenses: The Request includes funding for OCED's contribution to the DOE Working Capital Fund, information technology services, staff training, and other investments critical for operations.

**Program Direction
Funding (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Program Direction				
Washington Headquarters				
Salaries and Benefits	0	0	11,261	+11,261
Travel	0	0	400	+400
Support Services	0	0	+2,952	+2,952
Other Related Expenses	0	0	3,836	+3,836
Total, Washington Headquarters	0	0	18,449	+18,449
Idaho Field Office				
Salaries and Benefits	0	0	152	+152
Travel	0	0	6	+6
Support Services	0	0	40	+40
Other Related Expenses	0	0	52	+52
Total, Idaho Field Office	0	0	250	+250
Golden Field Office				
Salaries and Benefits	0	0	1,984	+1,984
Travel	0	0	71	+71
Support Services	0	0	520	+520
Other Related Expenses	0	0	676	+676
Total, Golden Field Office	0	0	3,251	+3,251
National Energy Technology Laboratory				
Salaries and Benefits	0	0	1,862	+1,862
Travel	0	0	66	+66
Support Services	0	0	488	+488
Other Related Expenses	0	0	634	+634
Total, National Energy Technology Laboratory	0	0	3,050	+3,050
Total Program Direction				
Salaries and Benefits	0	0	15,259	+15,259
Travel	0	0	543	+543
Support Services	0	0	4,000	+4,000
Other Related Expenses	0	0	5,198	+5,198
Total, Program Direction	0	0	25,000	+25,000

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Federal FTEs	0	0	90	+90
Support Services				
Technical Support	0	0	1,000	+1,000
Management Support	0	0	3,000	+3,000
Total, Support Services	0	0	4,000	+4,000
Other Related Expenses				
Other Services			1,598	+1,598
Working Capital Fund	0	0	3,600	+3,600
Total, Other Related Expenses	0	0	5,198	+5,198

**Clean Energy Demonstrations
Program Direction**

Activities and Explanation of Changes

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
Program Direction \$0	\$25,000,000	+\$25,000,000
Salaries and Benefits \$0	\$15,259,000	+\$15,259,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding supports salaries and benefits for 90 FTEs to provide project management support, competitive solicitation development support, and financial control. The Request also will support costs associated with Federal employee benefits, including health insurance costs and retirement allocations in FERS. 	<ul style="list-style-type: none"> New funding will meet the anticipated staffing needs of the office to execute anticipated roles and responsibilities, as well as to provide supplemental funding for performance award pools. The amount also accounts for a 4.6 percent increase in Federal salaries and the annualization of the CY 2022 2.7 percent pay increase.
Travel \$0	\$543,000	+543,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding will support staff travel for onsite solicitation process requirements and project management support as well as outreach to stakeholders including those in traditionally disadvantaged including energy communities and industry. This includes conducting information exchanges and administration during competitive cycle and travel related to the implementation and award of projects from the FY 2023 solicitation and ongoing awards. 	<ul style="list-style-type: none"> New funding reflects anticipated need for staff to travel as part of OCED duties.
Support Services \$0	\$4,000,000	+4,000,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding for support services to provide support with technical and administrative support during project solicitation cycle, and during office management of project implementation. Contract support for data gathering and analysis, developing communications and marketing tools and content, and conducting 	<ul style="list-style-type: none"> New funding reflects need for technical/administrative support services in launching and managing multiple years of project solicitation cycles and active project management.

FY 2021 Enacted	FY 2023 Request	Explanation of Changes FY 2023 Request vs FY 2021 Enacted
	other required data collection, verification, validation, and reporting requirements.	
Other Related Services \$0	\$5,198,000	+\$5,198,000
<ul style="list-style-type: none"> No funding in FY 2021. 	<ul style="list-style-type: none"> Funding for Energy IT Services (EITS), Working Capital Fund (WCF), training, and other services. 	<ul style="list-style-type: none"> New funding reflects costs associated with up to 90 FTE.

**Office of Clean Energy Demonstrations
Research and Development (\$K)**

	FY 2021 Enacted	FY 2022 Annualized CR	FY 2023 Request	FY 2023 Request vs FY 2021 Enacted
Basic	0	0	0	0
Applied	0	0	0	0
Development	0	0	167,000	+167,000
Subtotal, R&D	0	0	167,000	+167,000
Equipment	0	0	0	0
Construction	0	0	0	0
Total, R&D	0	0	167,000	+167,000

Bipartisan Infrastructure Law (BIL) Investments

OCED was appropriated funds through the Bipartisan Infrastructure Law (BIL) (P.L. 117-58). Not all BIL activities will be managed by the organization to which funds were appropriated.

(\$K)

	FY 2022 BIL Appropriation	FY 2023 BIL Appropriation	Managing Organization
Clean Energy Demonstrations			
Carbon Capture Demonstration Projects Program	937,000	500,000	OCED
Carbon Capture Large-Scale Pilot Projects	387,000	200,000	OCED
Industrial Emissions Demonstration Projects	100,000	100,000	OCED
Clean Energy Demonstration Program on Current and Former Mine Lands	100,000	100,000	OCED
Activities for Energy Improvement in Rural and Remote Areas	200,000	200,000	OCED
Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency	1,000,000	1,000,000	OCED
Energy Storage Demonstration Pilot Grant Program	88,750	88,750	OCED
Long-Duration Energy Storage Demonstration Initiative and Joint Program	37,500	37,500	OCED
Regional Clean Hydrogen Hubs	1,600,000	1,600,000	OCED
Advanced Reactor Demonstration Program	677,000	600,000	OCED
Total, Clean Energy Demonstrations	5,127,250	4,426,250	

- **Carbon Capture Demonstration Projects Program:** The goal of this investment is to establish a carbon capture technology program for the development of six facilities to demonstrate transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. FY 2023 funding will support initial award selections from a previously released funding announcement.
- **Carbon Capture Large-Scale Pilot Projects:** The goal of this investment is to support the development of transformational technologies that will significantly improve the efficiency, effectiveness, costs, emissions reductions, and environmental performance of coal and natural gas use, including in manufacturing and industrial facilities. FY 2023 funds will support multiple pilot projects, selected through a funding opportunity announcement, to de-risk carbon capture on actual exhaust from industrial and power sectors.
- **Industrial Emission Demonstration Projects:** This goal of this investment is to support demonstration projects that test and validate technologies that reduce industrial emissions. FY 2023 funding will support short-duration technical engineering and design studies to inform subsequent large-scale demonstration projects as well as first-of-a-kind industrial demonstrations in response to a previously released funding opportunity announcement.
- **Clean Energy Demonstration Program on Current and Former Mine Lands:** The goal of this investment is to demonstrate the technical and economic viability of conducting clean energy projects on current and former mine lands. OCED will support up to five clean energy projects in geographically diverse regions, at least two of which shall be solar projects. OCED will provide initial funding for these demonstrations in FY 2023.
- **Activities for Energy Improvement in Rural and Remote Areas:** The goal of this investment is to provide financial assistance to improve, in rural or remote areas of the United States, the resilience, safety, reliability, and availability of energy; and environmental protection from adverse impacts of energy generation in consultation with the Department of the Interior. FY 2023 funding will support technical assessments with lab consortia, stakeholder engagement, and awards to establish project teams.

- **Program Upgrading Our Electric Grid and Ensuring Reliability and Resiliency:** The goal of this investment is to provide federal financial assistance to demonstrate innovative approaches to transmission, storage, and distribution infrastructure to harden and enhance resilience and reliability; and to demonstrate novel approaches to enhance regional grid resilience. FY 2023 funding will support competitive grants, implemented through States by public and rural electric cooperative entities on a cost-shared basis. OCED will manage this investment in close coordination with the DOE Grid Deployment Office.
- **Energy Storage Demonstration Pilot Grant Program:** The goal of this investment is to support three first of their kind energy storage system demonstration projects. FY 2023 funding will be used to support awards selected from a competitive funding opportunity announcement.
- **Long-Duration Energy Storage Demonstration Initiative and Joint Program:** The goal of this investment is to establish a demonstration initiative composed of demonstration projects focused on the development of long-duration energy storage technologies. FY 2023 funding will be used for initial funding of awards resulting from a competitive funding opportunity announcement.
- **Regional Clean Hydrogen Hubs:** The goal of this investment is to support the development of at least four regional clean hydrogen hubs that demonstrably aid the achievement of the clean hydrogen production standard; demonstrate the production, processing, delivery, storage, and end use of clean hydrogen; and can be developed into a national clean hydrogen network to facilitate a clean hydrogen economy. FY 2023 funding will support initial awards made in this program as the result of a competitive funding opportunity announcement.
- **Advanced Reactor Demonstration Program:** In addition to the funding provided in the base program, OCED will support two large demonstrations of advanced nuclear reactors for electricity generation. OCED will provide FY 2023 funding for continued development and construction of two first-of-a-kind advanced reactors to be licensed for commercial operations.