

## Department of Energy Opportunities

On November 30, the Senate confirmed [Corey Henderson](#) as the NNSA Deputy Administrator for Defense Nuclear Nonproliferation. He is the ninth official to be confirmed at DOE out of 23 positions that require Senate confirmation. Confirmations for the Assistant Secretaries for the Offices of Electricity, Fossil Energy and Carbon Management, and Science are all still pending.

New in this update, DOE released new funding opportunities in life cycle assessments for carbon negative buildings, energy research for EPSCoR states, and biosystems design research for biofuels, bioproduction, and biomaterials. DOE signed a new interagency agreement with the U.S. Geological Survey to assess global, regional, and national resources for geologic carbon storage to meet clean energy goals. DOE will be releasing shortly new funding opportunities for Energy Frontier Research Centers; chemical and materials sciences to advance clean energy technologies and transform manufacturing; the university training and research for fossil energy applications program; and geologic carbon storage projects under CarbonSAFE. DOE also released Requests for Information on energy sector supply chains and deployment and demonstration opportunities for carbon reduction and removal technologies. In partnership with the Department of Transportation, DOE also released Requests for Information for new programs funded in the bipartisan infrastructure bill to deploy electric vehicle charging and hydrogen, propane, and natural gas fueling infrastructure. DOE also held webinars that provided additional information on the goals, objectives, and research priorities of the newly renamed Office of Fossil Energy and Carbon Management and plans to advance more than \$10 billion in funding in the bipartisan infrastructure bill for hydrogen hubs and research and development activities (Lewis-Burke analysis forthcoming).

### Interagency Partnerships

- [Geologic Carbon Storage Partnership between DOE and USGS](#)
  - On November 2, the Department of the Interior's U.S. Geological Survey (USGS) and DOE's Office of Fossil Energy and Carbon Management signed a Memorandum of Understanding to expand collaboration between the two agencies to assess global, regional, and national resources for geologic carbon storage to meet clean energy goals.
  - The goal is to better understand current and future locations both domestically and internationally for geologic CO<sub>2</sub> storage.
  - As part of this effort, USGS and DOE would collaborate with international governments, geologic surveys, and other organizations, especially in emerging economies, and provide technical assistance, including organizing workshops and joint research activities.

### New Funding Opportunities

- \$4 million for [Life Cycle Assessments for Carbon Negative Buildings](#): Applications due January 10, 2022
  - ARPA-E is providing seed funding for small number of projects through its Solicitation on Topics Informing New Program Areas to help develop a future funding opportunity announcement and dedicated ARPA-E program.
  - This seed funding would support evaluations of life cycle impacts for both carbon storing building materials and whole buildings designs with the aim of achieving carbon negative greenhouse gas emissions.
  - Life cycle assessment frameworks would provide information on the benefits of a variety of building materials and building designs that utilize atmospheric carbon in their manufacture and store carbon within the finished product.
  - ARPA-E plans to make up to three awards to support efforts over four years.

- \$24 million for [Energy Research in EPSCoR Jurisdictions](#): Pre-application due January 13, 2022
  - The focus of this year’s solicitation is on building partnerships between DOE national laboratories and [EPSCoR eligible institutions](#) from 28 states and territories.
  - The purpose is to support joint projects that advance fundamental, early-state energy research.
  - Participation by undergraduate students, graduate students, or postdoctoral fellows is required, utilization of DOE user facilities is strongly encouraged, and this is considered a good opportunity for early career faculty.
  - The priority areas of interest include energy storage, carbon dioxide removal, hydrogen, solar energy conversion, and low-carbon manufacturing (including polymer upcycling).
  - DOE plans to make up to 10 awards for \$250,000 a year for each project over three years.
  - Limited submission: Applicant institutions cannot submit more than 3 pre-applications.
- \$110 million for [Biosystems Design to Enable Safe Production of Next-Generation Biofuels, Bioproducts and Biomaterials](#): Pre-applications due January 26, 2022
  - The focus is basic research and technology development to design and engineer plants and microbes for the production of advanced biofuels, bioproducts and biomaterials, including:
    - “fundamental systems biology research to advance the development of new genome-wide design and engineering technologies, innovative modeling, and high-throughput testing approaches for a broad range of prokaryotic and eukaryotic microbes relevant to the production of biofuels and bioproducts from biomass, from synthetic polymers, or as a byproduct of photosynthesis”; and
    - “basic research in plant systems biology, genome-scale modeling, design, and engineering to advance towards the development of enhanced bioenergy crops, capable of producing biofuels, bioproducts, biomaterials and/or their precursors while growing in marginal environments.”
  - DOE plans to make up to 12 awards ranging from \$1 million to \$5 million per year over five years.

### **Upcoming Funding Opportunities**

- \$118 million for **Energy Frontier Research Centers (EFRCs)**: December/January
  - DOE plans to release a funding solicitation to fund up to 40 new or renewed centers.
  - [EFRCs](#) are one of DOE’s leading center-level competitions and well-suited for research universities.
  - EFRCs are typically funded from \$2 million to \$4 million each per year over four years and there are no cost share requirements.
  - Started in 2009, the EFRC program focuses on energy-relevant, basic research with a scope and complexity beyond what is possible in standard single-investigator or small-group awards. These multi-investigator, multi-disciplinary, multi-institutional centers accelerate scientific discovery and tackle transformative energy grand challenges in materials sciences, chemical sciences, geosciences, and biosciences.
  - DOE confirmed that the topic areas are most likely to be:
    - Science for Clean Energy: carbon-neutral hydrogen, solar energy and fuel, nuclear energy, catalysis, energy storage, energy/water nexus, subsurface science, direct air capture of CO2
    - Science for Advanced Manufacturing: transformative manufacturing, chemical upcycling of polymers, microelectronics, synthesis science
    - Other National Priority Research Areas: quantum information science, quantum materials
  - There will likely be limited submission requirements of no more than three submissions for each lead institution.
  - New this year: Applications led by or in partnership with Minority Serving Institutions and applications including individuals from historically underrepresented groups in STEM will be strongly encouraged and will also be part of the formal review process and program factors that determine scores for winning proposals.
- \$17 million for **Chemical and Materials Sciences to Advance Clean Energy Technologies and Transform Manufacturing**: December/January
  - This funding opportunity will support single Principal Investigators and small teams (as opposed to large, multidisciplinary teams for EFRCs) to drive basic research priorities for material and chemistry research.

- DOE plans to fund the following topic areas (similar to EFRCs but no research in microelectronics and instead of quantum research a focus on critical materials):
  - Science for Clean Energy: carbon-neutral hydrogen, solar energy and fuel, nuclear energy, catalysis, energy storage, energy/water nexus, subsurface science, direct air capture of CO<sub>2</sub>
  - Science for Advanced Manufacturing: transformative manufacturing, chemical upcycling of polymers, synthesis science
  - Other National Priority Research Areas: critical materials
- DOE plans to fund up to 20 awards ranging from \$500,000 to \$1 million per year over three years.
- There will likely be limited submission requirements of no more than two submissions for each lead institution.
- \$3 million for [University Training and Research for Fossil Energy Applications](#): DOE plans to release funding solicitation in December
  - The goals of this program are to educate and train the next generation of engineers and scientists and support novel, early-stage research at U.S. colleges and universities that advances DOE's fossil energy and carbon management mission.
  - Research and development efforts are focused on technology development to mitigate and/or remediate legacy environmental impacts of coal-based generation systems; assessments of environmental benefits and impacts of utilizing legacy mining materials such as waste coal for the cultivation of other low-carbon products (e.g. biomass); and ensuring the safety and environmental integrity of systems that provide benefit for coal and power plant communities.
  - This year the four topic areas will include:
    - Techno-economic analysis and lifecycle analysis screening of net-zero or net-negative, CCS-enabled, coal/waste coal and biomass power production,
    - Resource development site assessments to inform the analyses above,
    - Phytotechnology development for identification and/or remediation of sites exhibiting soil contamination via groundwater transport of metals from coal combustion product impoundments, and
    - Automated component inspection, analysis, and repair enabled by robotics.
  - DOE plans to make up to 14 awards for \$400,000 each to support projects over two to three years.
- \$33 million for [Geologic Carbon Storage](#): DOE plans to release funding solicitation in December
  - DOE plans to awards additional cooperative agreements under the [Carbon Storage Assurance Facility Enterprise \(CarbonSAFE\) Initiative](#).
  - The focus will be on developing and demonstrating geologic storage sites with capacities to store at least 50 million metric tons of carbon dioxide and help accelerate the deployment of carbon capture and storage and carbon dioxide removal technologies.

High Energy Physics (HEP) and Nuclear Physics (NP) focused funding opportunities for December 2021-March 2022:

- \$30 million for NP **Scientific Discovery through Advanced Computing (SciDAC)** partnerships (SciDAC-5)
  - NP SciDAC projects are collaborative basic research efforts involving teams of nuclear physicists, mathematicians, and computer scientists working on major software and algorithm development to conduct complex scientific and engineering computations on DOE leadership-class and high-end computing systems (HPC).
  - DOE plans to make up to six awards ranging between \$1 million and \$2 million per year over five years.

- \$20 million for **Artificial Intelligence and Machine Learning (AI/ML) Research and Development for HEP**
  - Priority topics are likely to include advancing AI/ML capabilities for more efficient processing of large data sets, modeling and mitigation of systematic uncertainties, high-throughput data selection, real-time data classification, and improved operations of particle accelerators and detectors.
- \$12 million for the **Nuclear Data Interagency Working Group Research Program**
  - DOE plans to support research projects using nuclear data and improving databases for users supported by Nuclear Physics, the Isotope Program and the National Nuclear Security Administration Office of Defense Nuclear Nonproliferation Research and Development.
  - Research opportunities usually cover nuclear physics basic science, nuclear energy applications, non-proliferation and nuclear security applications, and other associated applications in radiation protection, planetary, and space-based science.
  - DOE plans to make up to 20 awards averaging \$350,000 a year over three years.
- \$7 million for **Topical Collaborations in Nuclear Theory**
  - Multi-institution collaborations to investigate a specific topic in nuclear physics of special interest to the community and not addressed by a previous topical collaboration.
  - New areas are intended to bring together research groups of leading nuclear theorists, leverage the resources of small research groups, and provide expanded opportunities for the next generation of nuclear theorists.
  - DOE plans to make up to 14 awards ranging from \$300,000 to \$500,000 a year over five years.
- \$7 million for **Quantum Information Science Research and Innovation for Nuclear Science**
  - This would support research that would have a transformative impact on the nuclear physics mission area and/or advance quantum information science development enabled by nuclear physics-supported science, technologies, and laboratory infrastructure.
  - Topics are likely to include quantum computation, quantum simulations and simulators, quantum sensing, nuclear physics detectors, nuclear many-body problem, ‘squeezed’ quantum states, entanglement at collider energies, and lattice gauge theories as well as novel areas of basic research.
- \$7 million for **Research and Development of Next Generation Nuclear Physics Accelerator Facilities**
  - DOE will support research and development efforts for accelerator systems of relevance to current or next generation NP accelerator facilities.
  - Topics usually include accelerator research and development that significantly advances state-of-the-art accelerator capabilities for next generation machines for the study of nuclear physics, for improving the performance of existing facilities studying nuclear physics, or SRF technology.
  - DOE plans to make up to 10 awards typically ranging from \$500,000 to \$1 million for two years.
- \$5 million for **DOE Traineeships in High Energy Physics for Computation**
  - In the last two years, HEP has funded graduate traineeship programs in accelerator physics and technology and instrumentation. The focus this year is to build expertise in computational tools, data management and analytics, and simulation techniques to advance HEP programs.
  - DOE awards to a university or consortia of universities would support tuition, stipend, and travel costs for students enrolled in specific academic programs aimed at training graduate students in computational techniques needed for HEP programs, and provide some support for curriculum development and program administration.
  - DOE awards are expected to be up to five years with a second five-year renewal and awards range from \$1 million to \$2 million.

## **New Engagement Opportunities**

- **[Request for Information on Energy Sector Supply Chains](#)**: Responses due January 15, 2022
  - DOE is seeking public input, including from research universities, on approaches and actions needed to build resilient supply chains for the energy sector to meet clean energy goals.
  - DOE is interested in the full supply chain needs—from raw materials, processed materials, subcomponents, final products, to end-of-life material recovery and recycling—for 11 specific technologies, such as energy storage and fuel cells, and two crosscutting topics, including cybersecurity and digital components and commercialization and competitiveness.
  - Key topics of interest for each technology include identifying existing and future threats, risks, and vulnerabilities; major barriers, including financial and commercial, scientific, technical, regulatory and market; conditions needed to help incentivize energy sector companies and communities to both transfer energy manufacturing back to and scale up supply chains in the United States; public-private partnerships; and specific actions to address threats, risks, and vulnerabilities and help build resilient supply chains.
- **[Request for Information on Deployment and Demonstration Opportunities for Carbon Reduction and Removal Technologies](#)**: Responses due January 24, 2022
  - The bipartisan infrastructure bill that passed in November 2021 provided DOE with \$10 billion for carbon capture, direct air capture, and industrial emission reduction research, development, and demonstration activities.
  - Before implementing these new initiatives, DOE is seeking input on potential carbon management demonstration and deployment projects and ideal locations for these projects as well as impacts to environmental justice, energy transition, tribal, and other communities.
  - Specifically, DOE is requesting input in seven categories:
    - Point-source carbon capture technologies and integrated capture and storage projects,
    - Validation of carbon storage resources for commercial development,
    - Carbon dioxide pipeline infrastructure at the regional and national scale,
    - Direct air capture technologies and regional deployment opportunities,
    - Direct air capture prizes and requirements,
    - Opportunities for carbon conversion technologies and grant program, and
    - Environmental justice, engagement and workforce development.
- **[Requests for Information on the National Electric Vehicle Charging Program and the Charging and Fueling Infrastructure Program](#)**: Responses due January 28, 2022
  - The Infrastructure Investment and Jobs Act passed by Congress in November 2021 establishes new programs to help states deploy electric vehicle charging stations and other infrastructure.
  - While managed and funded by the Department of Transportation's (DOT) Federal Highway Administration, the legislation requires DOT to coordinate program activities with DOE. DOT and DOE are seeking feedback before implementing the new programs.
  - The National Electric Vehicle Charging Program would provide funding to states to deploy electric vehicle charging infrastructure and help establish an interconnected network to collect data and ensure equitable access.
  - The bill also sets aside \$2.5 billion in grants to states under the Charging and Fueling Infrastructure Program, which supports the deployment of publicly accessible electric vehicle charging, hydrogen fueling, propane fueling, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain other locations that will be accessible to all drivers of electric vehicles, hydrogen vehicles, propane vehicles, and natural gas vehicles.
  - While universities are not eligible to apply directly for these funds, they can partner with and participate in project elements with a state or local government entity, metropolitan planning organization, Indian Tribe, or a public authority with a transportation function.

## Open Funding Opportunities

- \$30 million for High Energy Physics (HEP) [Scientific Discovery through Advanced Computing \(SciDAC\)](#) partnerships (SciDAC-5): Letters of intent due December 15
  - HEP SciDAC projects are collaborative basic research efforts involving teams of high energy physicists, mathematicians, and computer scientists working on major software and algorithm development to conduct complex scientific and engineering computations on DOE leadership-class and high-end computing systems (HPC).
  - The focus is on advancing the HEP mission and P5 science drivers in the three frontiers (cosmic, energy, and intensity) supporting experimental, theoretical, computational, technological, and interdisciplinary research.
  - The three science topics include:
    - Integrated end-to-end simulation of conventional, hybrid, or virtual accelerators using DOE HPC to target Grand Challenges to advance the P5 Science Drivers;
    - Novel detector simulation and tracking models and data driven analysis techniques for high energy physics experiments employing DOE HPC; and
    - Innovative theoretical, computational, and simulation techniques to explore the unknown including new particles, interactions, and physical principles.
  - DOE plans to make up to six awards ranging between \$1 million and \$2 million per year over five years.
  - Only the 10 Office of Science National Laboratories can submit a proposal (Office of Science lab-only call), but research universities may partner with the labs on the proposal.
- \$3 million for [Communities Local Energy Action Program \(LEAP\) Pilot](#): Applications due December 17
  - DOE seeks to provide technical assistance to help communities, especially those in low-income, energy-burdened areas develop clean energy-related economic development plans and incentives for a clean energy transition.
  - Communities can apply for assistance in one or more “energy pathways” including: renewable energy planning and development; energy efficient buildings; clean transportation; carbon capture and storage; energy site reclamation and critical minerals processing; community resilience microgrids; and new or enhanced manufacturing.
  - Multi-stakeholder teams representing communities will be encouraged to apply, including academic institutions, non-profit organizations, community-based organizations, and local economic development officials.
- \$45 million for [Carbon Storage Technologies for Building Materials](#): Concept papers due December 20
  - This new ARPA-E program will be called Harnessing Emissions into Structures Taking Inputs from the Atmosphere (HESTIA) and will focus on building materials and whole-building designs from a wide range of potential feedstocks (e.g., forestry and purpose grow products, agricultural residues, direct carbon utilization) that are net carbon negative on a life-cycle basis.
  - The goal is to transform buildings into net carbon storage structures and key metrics include:
    - Storage of more carbon in the chemical structure of the finished product than emitted during manufacture and/or use;
    - Relevant performance testing (e.g., flammability, strength) per building code and incumbent specifications;
    - Market advantage (e.g., improved material performance in at least one area, lower cost, or easier installation) over the best-in-class incumbent building element; and
    - Sufficient retention of carbon storage over service lifetime and minimized end-of-life emissions where possible by designing for reuse, repurposing, and/or recycling.
  - ARPA-E plans to make between 10 and 15 awards averaging \$2 million to \$4 million each over three years.

- \$14.5 million for [Direct Air Capture](#) (DAC): Applications due December 22
  - DOE will fund front-end engineering design studies of advanced DAC systems capable of removing 5,000 tonnes of CO<sub>2</sub> per year from the air and suitable for long duration carbon storage (e.g., geological storage or subsurface mineralization) or CO<sub>2</sub> conversion/utilization technology.
  - DAC systems should also be co-located with existing, operational geothermal resources, nuclear plant facilities, or industrial plants to access thermal sources, such as waste heat and steam slip streams.
  - Applications must include a Workforce Readiness Plan with a description of the skillset and availability of the workforce; the training required to prepare the workforce, such as apprenticeships, certificates, certifications, or academic training; and, if needed, a plan to collaborate with training providers or other stakeholders to develop necessary training that would not be otherwise available.
  - A minimum 20 percent cost share is required.
  - DOE plans to make up to seven awards between \$2.5 million and \$3.5 million (of DOE cost share) to fund 18 month projects.
- \$10 million for [Earth System Model Development and Analysis](#): Pre-applications due January 5, 2022
  - The two priority topics include:
    - Earth system model development: projects that improve the capability and accuracy of the Energy Exascale Earth System Model (E3SM), with a particular emphasis on improving the accuracy of low-level cloud representation, and
    - Regional and global model analysis: projects that improve the predictive understanding of climate variability, water cycle, and related hydrological extremes. DOE is particularly interested in the development and use of innovative techniques such as machine learning, data assimilation, and initialization.
  - DOE plans to make up to 15 awards in the form of three-year grants with total award amounts ranging from \$600,000 to \$900,000.
  - The rate of success is approximately 16 percent. In FY 2020, of 70 proposals submitted, 11 were funded.
- \$19 million for [Computational Chemical Sciences](#): Pre-applications due January 7, 2022
  - DOE is seeking applications from small groups (2-3 Principal Investigators) and multidisciplinary, multi-institutional teams interested in developing open-source codes for modeling and simulation of chemical sciences for use on exascale computing systems.
  - DOE plans to make up to ten awards ranging from \$500,000 to \$2 million per year over three years.
  - Limited submission: Applicant institutions are limited to no more than two pre-applications.
  - A list of prior awards is available [here](#).
- \$70 million for [Scientific Discovery through Advanced Computing \(SciDAC\) partnerships in Earth System Model Development](#): Pre-applications due January 13, 2022
  - These SciDAC projects are collaborative basic research efforts involving teams of earth system scientists, mathematicians, and computer scientists working on major software and algorithm development to conduct complex scientific and engineering computations on DOE leadership-class and high-end computing systems (HPC) to advance the Energy Exascale Earth System Model (E3SM).
  - The focus is on improvements in projections and representations of ocean circulation, the Antarctic ice sheet, marine biogeochemistry, and variability of the winds in the tropical stratosphere.
  - DOE plans to make up to 8 awards ranging from \$1 million to \$3 million per year over five years.

- \$15 million for [Quantum-Enabled Bioimaging and Sensing Approaches for Bioenergy](#): Pre-applications due January 14, 2022
  - Research support is focused on quantum science concepts that would enhance the image resolution and provide new ways for repetitive imaging to detect fragile samples without damaging them, produce cleaner pictures, and use light beyond the visible range to see unknown features of biological shape and movement.
  - These new bioimaging and sensing approaches must focus on advancing knowledge and predictive understanding of plant and microbial systems relevant to bioenergy and DOE environmental research.
  - Funding will support both novel, proof of concept applications as well as prototype development of instruments and methods.
  - DOE will not support late-stage optimization after initial prototype development or research to support current or newly acquired resources, capabilities or equipment.
  - DOE plans to make up to 14 awards ranging from \$250,000 to \$750,000 per year over three years.
- \$2.5 million for the [Inclusive Energy Innovation Prize](#): Applications due February 25, 2022
  - DOE plans to award cash prizes to groups and organizations, including university-based programs, that support entrepreneurship and innovation in communities historically underserved in climate and energy technology funding.
  - Up to 10 organizations would share a total prize pool of \$2.5 million.
  - Some focus areas include:
    - Clean energy and climate innovation with entrepreneurship programming and capabilities at colleges and universities that serve large populations of students underrepresented in STEM, Minority Serving Institutions, community colleges, and undergraduate institutions.
    - Identify and fund activities that will help disadvantaged communities become aware of, apply, or secure DOE funding or other federal, state, local government, or private funding in support of Justice40 goals.
- \$400 million for the [Office of Science Open Call](#): The call is open October 1, 2021 through September 30, 2022
  - This annual funding call allows the Office of Science to solicit applications for research in areas not covered by more specific, topical funding opportunity announcements that are issued throughout the fiscal year.
  - All Office of Science programs participate and list areas of interest including: Advanced Scientific Computing Research, Basic Energy Sciences, Biological and Environmental Research, Fusion Energy Sciences, High Energy Physics, Nuclear Physics, Isotope R&D and Production and Accelerator R&D and Production.
  - Awards range from \$200,000 to \$5 million in annual funding over three to five years.
  - DOE usually makes about 300 new awards each year, in addition to renewing prior funding awards.

### **Ongoing Student Opportunities**

- **Mickey Leland Energy Fellowship Program**: Applications due January 10, 2022
  - A 10-week summer research program for undergraduate and graduate students in STEM majors interested in the missions of DOE's Office of Fossil Energy and Carbon Management that seeks to minimize the impacts of fossil fuels while working toward net-zero emissions.
- **Science Undergraduate Laboratory Internships (SULI)** and **Visiting Faculty Program (VFP)**: Applications due January 12, 2022
  - SULI offers undergraduates opportunities to conduct research or technical projects at DOE National Laboratories and facilities under the mentorship of laboratory staff scientists and engineers.
    - Project topics cover a wide range of scientific and technological priority areas to support the DOE mission, spanning from fundamental science to applied research and development.
  - VFP seeks to increase the research competitiveness of faculty members and their students at institutions historically underrepresented in the research community to expand the workforce vital to DOE mission areas.
    - VFP typically attracts faculty members from Minority Serving Institutions, including Historically Black Colleges and Universities (HBCUs). Typically, about 50% of the participants are from MSIs, one-third of which are HBCUs.
    - Selected college and university faculty members collaborate with DOE laboratory research staff on research projects of mutual interest.
  - Each participating faculty member may invite one or two students (one of whom may be a graduate student) to join the research team.
- **Collegiate Wind Competition**: March 2022
  - The competition allows multidisciplinary teams of undergraduate students to design, build, and test a prototype wind turbine; develop a site plan and cost-of-energy analysis for a wind farm; and conduct outreach to the wind industry, their local communities, and local media outlets.
  - DOE plans to start accepting applications in March 2022 for the 2022-2023 academic year.
  - DOE plans to invite qualifying teams in June 2022 to compete for the Fall 2022 semester.
  - DOE plans to select final teams in December 2022 to compete in the 2023 Collegiate Wind Competition at the American Clean Power Association's [CLEANPOWER Conference](#) in New Orleans, Louisiana, in May 2023.

### **Previously Reported Engagement Opportunities**

- **Advanced Manufacturing Office Decarbonization Roundtables**: December 2021-March 2022
  - DOE plans to convene experts and leaders in the chemicals, iron and steel, and cement industries for a series of roundtables focused on pathways to decarbonization.
  - The focus will be on R&D and technical assistance solutions to reduce emissions across the U.S. industrial sector and shape DOE's future industrial decarbonization strategy, priorities, and investments.
  - DOE will release more information in the coming weeks.

- **[Request for Information to Improve Office of Technology Transitions Commercialization Programs](#)**: Response due January 19, 2022
  - DOE is seeking feedback to improve the scope and structure of its commercialization programs.
  - The RFI is seeking information to:
    - Improve existing programs, including the Lab Partnering Service, Energy I-Corps, Practices to Accelerate the Commercialization of Technologies, Energy Program for Innovation Clusters, and the EnergyTech University Prize (UP);
    - New initiative and tools to enhance the impact of DOE investments, address commercialization challenges, and applicable to a variety of technologies; and
    - Ways to support diversity, equity, and inclusion.
- **ArcticX Energy Innovation Summit on Environmental Justice and Energy Equity in the Arctic**: January 26
  - On November 17, DOE launched an [Innovation XLab](#) focused on the Arctic region and in particular Alaska.
  - The XLab is intended to bring together and foster networking opportunities between Alaska stakeholders, such as Alaska Natives and local communities, and industry, university and national lab researchers, and government leaders.
  - These partnerships would then be utilized to find innovative solutions to deploy clean energy technologies and address climate change.
  - Prior to this XLab, DOE hosted seven other Innovation XLabs and all were focused on specific energy and emerging technology areas, such as energy storage, Artificial Intelligence, biotechnology, quantum information science, and carbon capture and storage.
  - This is the first focused on a specific region and DOE has four other events planned as part of this Arctic XLab series, including the January 26 summit.
  - DOE will post registration information next month [here](#).
- **[Solid-State Lighting Workshop](#)**: January 31–February 3, 2022
  - A workshop to convene stakeholders for sharing progress, challenges, ideas, and solutions to shape the future of lighting.
- **[National Energy Storage Summit](#)**: March 8-9, 2022
  - Hosted by Lawrence Berkeley National Lab, the goal of this virtual summit is to bring together experts from national labs, academia, industry, and the government to identify challenges and opportunities to accelerate the development and deployment of energy storage solutions to meet clean energy goals.
- **[ARPA-E Energy Innovation Summit](#)**: March 14-16, 2022
  - ARPA-E’s annual conference and technology showcase will be in Denver in 2022.

#### **Prior DOE Webinars**

- On December 1, DOE held a [webinar](#) for the newly renamed Office of Fossil Energy and Carbon Management (FECM) and recently released its [presentation](#).
  - The mission of the newly renamed office is to minimize the environmental impacts of fossil fuels while working towards net-zero emissions.
  - The goal is to use research, development, demonstration, and deployment (RDD&D) approaches to advance technologies to reduce carbon emissions and other environmental impacts of fossil fuel production and use, particularly in the hardest-to-decarbonize applications in the electricity and industrial sectors.

- Below are RD&D priorities that will guide future investments:

RDD&D Priorities

 <p><b>Demonstrate and Deploy Point Source Carbon Capture</b> RDD&amp;D for CCS in the power and industrial sectors to enable wider, strategic commercial deployment to meet net-zero emissions goals by 2050.</p>	 <p><b>Reduce Methane Emissions</b> Develop technologies and deploy regional initiatives to monitor and reduce methane emissions from fossil fuel infrastructure including coal, oil, and gas.</p>
 <p><b>Advance Carbon Dioxide Removal &amp; Low Carbon Supply Chains for Industry</b> Air capture and mineral carbonation projects and develop novel approaches to recycle carbon emissions.</p>	 <p><b>Advance Critical Minerals, Rare Earth Elements (REE), and Mine Remediation</b> Improving REE separation/recovery technologies to manufacture products from CO<sub>2</sub> and carbon ores and to address current market and process economics. Advancing R&amp;D to address abandoned mines.</p>
 <p><b>Low-Carbon Industrial Supply Chains</b> Develop novel approaches to recycle carbon emissions into value-added products such as concrete, steel, chemicals, and fuels using systems-based carbon management approaches consistent with realizing a net-zero carbon economy by 2050.</p>	 <p><b>Increase Efficient Use of Big Data and Artificial Intelligence</b> Use AI, machine learning, and data analysis to create learning algorithms within a large dataset to help discover new material, optimize processes, and run autonomous systems.</p>
 <p><b>Accelerate Carbon-Neutral Hydrogen (H<sub>2</sub>)</b> Develop technologies that leverage the natural gas infrastructure for H<sub>2</sub> production, transport, storage, &amp; use, coupled to carbon management.</p>	 <p><b>Address the Energy Water Nexus</b> Improve our efficient use of scarce water resources and advance water remediation technologies to address the environmental impacts related to produced or displaced water associated with oil, gas, and coal industries, in addition to that associated with dedicated CO<sub>2</sub> storage.</p>

Source: DOE.

- DOE is also moving forward with \$10 billion in new funding for carbon management in the bipartisan infrastructure bill that will be managed by FECM:

## Carbon Management Funding in the Bipartisan Infrastructure Law

Through the Bipartisan Infrastructure Law, DOE will deploy approximately **\$10 billion** in new direct carbon management funding over 5 years:

- Carbon Dioxide Removal through Direct Air Capture
  - Regional DAC Hubs: **\$3.5 billion**
  - DAC Technology Prize Competition: **\$115 million**
- Engineered Stack Capture
  - Carbon Capture Demonstrations and Large Pilots: **\$3.5 billion**
  - Carbon Capture Technology Program: **\$100 million**
- Carbon Dioxide Utilization and Storage
  - Carbon Storage Validation and Testing: **\$2.5 billion**
  - Carbon Utilization Program: **\$310 million**