Energy Research Snapshot:
DOE Engagement Update

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Department of Energy Engagement Opportunities

The Department of Energy (DOE) is seeking feedback from stakeholders to help shape research priorities and funding opportunities in solar energy. DOE is also accepting applications to support graduate students in Office of Science STEM fields, buildings sciences, and carbon capture, utilization and sequestration. DOE is still accepting proposals for its annual nuclear research and infrastructure funding opportunities.

New Engagement Opportunities

- **Request for Information on Solar Impacts on Wildlife**: Responses due September 30
  - DOE's Solar Energy Technologies Office is seeking information on current practices related to siting large-scale solar energy plants and how stakeholders evaluate the impacts, especially to wildlife, these plants may have on the surrounding environment.
  - The purpose is to solicit feedback from industry, academia, research laboratories, government agencies, and other stakeholders on issues related to siting strategies; measuring wildlife impacts and benefits; avoidance and mitigation measures; and data and other stakeholder needs.
  - Specifically, DOE is interested in information on current practices and trends, as well as identifying what data or resources would enable greater confidence in solar energy impact assessments.
- **Request for Information on Industrial Decarbonization through Concentrating Solar Thermal:** Responses due October 13
  - DOE's Solar Energy Technologies Office is seeking input on pathways to use solar energy to decarbonize industries.
  - The focus is on the application of solar thermal heat, together with thermal energy storage, for both replacement of fossil fuel use and for reduction/elimination of CO2 emissions in three priority industries: bulk chemicals, steel, and cement. DOE is also interested in how hydrogen can be synergistically generated and used as part of solar-thermal-driven versions of these processes.
  - Specifically, DOE is interested in information on the research, planning, and execution challenges that must be overcome to deploy concentrating solar thermal heat energy (with or without electrification) into iron ore reduction and steel manufacture, cement production and chemicals production, including ammonia and hydrogen.
  - The responses will help DOE better understand the current status of concentrating solar-thermal technologies for industrial processes and then help guide future investments in solar electric and thermal energy.
  - The topic of this RFI was identified in DOE's September 8 Solar Futures Study, which examines solar energy's potential role in a decarbonized grid and lays out a blueprint for solar to contribute as much as 45 percent of the country's electrical supply by 2050 and support the electrification of buildings, transportation, and industry.

Student Opportunities

- **Research Experience in Carbon Sequestration (RECS) program**: Applications due October 15
  - This is an education and training program focused on carbon capture, utilization and sequestration (CCUS) which includes virtual CCUS site tours, live lectures, discussion, and group exercises.
  - Managed by the Office of Fossil Energy and Carbon Management, this year's program is scheduled for early December and will be a virtual, online program.
  - The program is open to Ph.D. or graduate students in geoscience, engineering, physics, climate science, science communications, and related business and social science fields.
  - Enrollment is competitive and limited to 25 participants who are required to commit to the full program.
  - Applicants must be U.S.-based.
- **Office of Science Graduate Student Research program**: Applications due November 10
  - This program supports awards to U.S. graduate students to conduct part of their graduate thesis research at a DOE national laboratory or host site in collaboration with a DOE laboratory scientist.
  - The program is open to current Ph.D. students in qualified graduate programs at accredited U.S. academic institutions, who are conducting their graduate thesis in STEM fields relevant to the Office of Science.
- **Innovation in Buildings Graduate Research Fellowship (IBUILD)**: Applications due by December 1
  - This program is open to Master's and Ph.D. students doing research in building sciences.
  - The focus of this year's solicitation is on students working on deployment and market barriers research as well as those conducting collaborative research to increase market adoption around building energy efficiency and building decarbonization technologies.
  - Fellows would receive financial awards to support research at their home institutions and participate in professional development activities that provide access to a network of mentors and potential internships with national laboratories or industry.
  - The Fellowship is renewable for up to 3 years.
  - DOE will start accepting applications on September 22 and appointments will begin in Summer/Fall 2022.
  - An informational webinar is scheduled for October 13 at 3:30 pm EST.

Current Funding Opportunities

- $55 million **Nuclear Research and Infrastructure Funding Opportunities**: Deadlines in September and November
  - Managed by the Office of Nuclear Energy, DOE released the FY 2022 funding opportunities announcements for Consolidated Innovative Nuclear Research (CINR) and Scientific Infrastructure Support for Consolidated Innovative Research.
  - These programs support nuclear science and engineering projects at research universities as well infrastructure and equipment at nuclear research reactors.

As reported previously, DOE is also seeking feedback from stakeholders to help shape research priorities and funding opportunities in long duration energy storage, quantum computing and biological and environmental research. DOE is also about to accept applications for its lab embedded entrepreneurship program.

Ongoing Engagement Opportunities

- **Long Duration Storage Shot Summit**: Virtual Event September 22-23, 2021
  - Registration is open to stakeholders interested in learning about DOE's Energy Earthshot focused on reducing the cost of grid-scale energy storage by 90 percent within the decade. A long duration energy storage system is any technology that can store energy for more than 10 hours at a time.
- **Long Duration Energy Storage Workshop**: Virtual Event September 22, 2021
  - The purpose of the workshop is to identify opportunity and how to overcome barriers in developing and deploying the next generation of long duration energy storage technologies.
  - Topics will include foundational innovations to accelerate long duration storage, long duration technologies beyond lithium, and demonstration projects that can help with commercial deployment.
- **Lab Embedded Entrepreneurship Program**: 2022 Cohort applications open starting on September 21, 2021
  - Entrepreneurial scientists and engineers are selected to help them commercialize clean energy technologies by embedding them with experts at DOE national laboratories and providing them access to unique tools and capabilities.
  - DOE is holding webinars for each of the three program sites that host entrepreneurial fellows:
    - Chain Reaction Innovations at Argonne National Laboratory: Register to attend one of four informational webinars. Applications open on September 21, 2021.
    - Innovation Crossroads at Oak Ridge National Laboratory: Register to attend one of four informational webinars. Applications open on September 21, 2021.
    - Cyclotron Road at Lawrence Berkeley National Laboratory: Register to attend one of six informational webinars. Applications open on October 15, 2021.
- **Request for Information on Access to Quantum Systems**: Responses due September 30
  - DOE is seeking information to develop a roadmap and establish a program to provide researchers access to quantum systems at national laboratories, research universities, and the private sector.
  - The FY 2021 Energy and Water bill, which funds DOE, required DOE to "develop a roadmap to provide researchers access to quantum systems so as to enhance the U.S. quantum research enterprise, stimulate the fledgling U.S. quantum computing industry, educate the future quantum computing workforce, and accelerate advancement of quantum computer capabilities."
  - Responses to this request for information will help DOE develop a roadmap and DOE is most interested in what quantum systems should be included in a user network and access models that meet the needs of quantum researchers.
  - Quantum systems currently being considered include systems for synthesis, characterization, and fabrication; sensors and measurement systems; networking and communication systems; and computers, processors, annealers, and analog simulators.
  - This roadmap is also consistent with the House-passed DOE Science for the Future Act, which includes authorization for a new program called the Quantum User Expansion for Science and Technology (QUEST) and recommended funding of $340 million over the next five years.
  - The FY 2022 President's budget request proposed a 10 percent increase for BER.

- **Request for Information on Assessing the National and International Standing of Biological and Environmental Research**: Responses due October 31
    - DOE's Office of Science is seeking input on how to maintain U.S. competitiveness in comparison to other international efforts and grow research efforts of the Biological and Environmental Research (BER) program.
    - Specifically, DOE is seeking information on the status of current capabilities, partnerships, funding mechanisms, and workforce development in atmospheric science; earth and environmental system modeling; environmental science; bioenergy and bioproducts; plant and microbial genomics; data analytics and management; and scientific user facilities.
    - Responses will feed into recommendations the BER Advisory Committee (BERAC) is preparing for DOE that was tasked with assessing BER's standing in related research efforts nationally and internationally and to consider strategies that would increase BER's ability to conduct world-class science in core BER research areas. BERAC is expected to issue its final report and recommendations in Spring 2022.
    - BER is expected to receive significant funding increases during the Biden Administration since it is aligned with two major Administration priorities: climate science and biotechnology. The FY 2022 President's budget request proposed a 10 percent increase for BER.