The DOE Webinar will begin shortly . . .

- **Why is there no sound?**
  - Once you logged into the webinar, you were provided two options to listen to this broadcast. The first option is through your computer speakers, the second option is via dialing the phone number provided to you upon login to the webinar. If you chose to listen through your computer speakers, you may need to turn your speaker volume on or up.
- **Will DOE provide access to the recorded webinar after the meeting?**
  - Yes, all those who registered will receive a link to the slides and to the recorded webinar soon after the meeting. It will also be available on the DOE SBIR/STTR web site.
- **Where can I find the Topics being discussed today?**
  - This link will take you to the Funding Opportunity Announcement (FOA) page that lists the FY 2024 Phase I Release 2 Topics: https://science.osti.gov/sbir/Funding-Opportunities
- **What if my question was not answered at today's webinar?**
  - Please contact the point of contact that follows each subtopic in the document listed above for further clarification.
  - If you have a question about the grant application process, please send us an email at: sbir-sttr@science.doe.gov.

DOE SBIR/STTR
Phase I Release 2 Topics Webinar

Topics associated with the
FY 2024 Phase I Release 2
Funding Opportunity Announcement

Topics 11-22

DOE SBIR/STTR Programs Office

November 15, 2022

TODAY'S AGENDA

Topics Introduction	DOE SBIR/STTR Programs Office
Topic 11-22	Office of Energy Efficiency and Renewable Energy

FY 2024 Phase I Schedule

	Release 1	Release 2
Topics Issued	Monday, July 10, 2023	Monday, November 6, 2023
Webinar(s)	Week of July 17, 2023	Week of November 13, 2023
FOA Issued	Monday, August 7, 2023	Monday, December 11, 2023
Webinar(s)	Friday, August 11, 2023	Friday, December 15, 2023
Letters of Intent (LOI) Due	Monday, August 28, 2023	Wednesday, January 3, 2024
Non-responsive LOI Feedback Provided	Monday, September 18, 2023	Tuesday, January 23, 2024
Applications Due	Tuesday, October 10, 2023	Wednesday, February 21, 2024
Award Notification	Tuesday, January 2, 2024	Monday, May 20, 2024

Phase I Funding Opportunity Announcements
Participating DOE Programs (FY 2024)

Phase I Release 1

- Office of Advanced Scientific Computing Research
- Office of Basic Energy Sciences
- Office of Biological and Environmental Research
- Office of Fusion Energy Sciences
- Office of High Energy Physics
- Office of Nuclear Physics

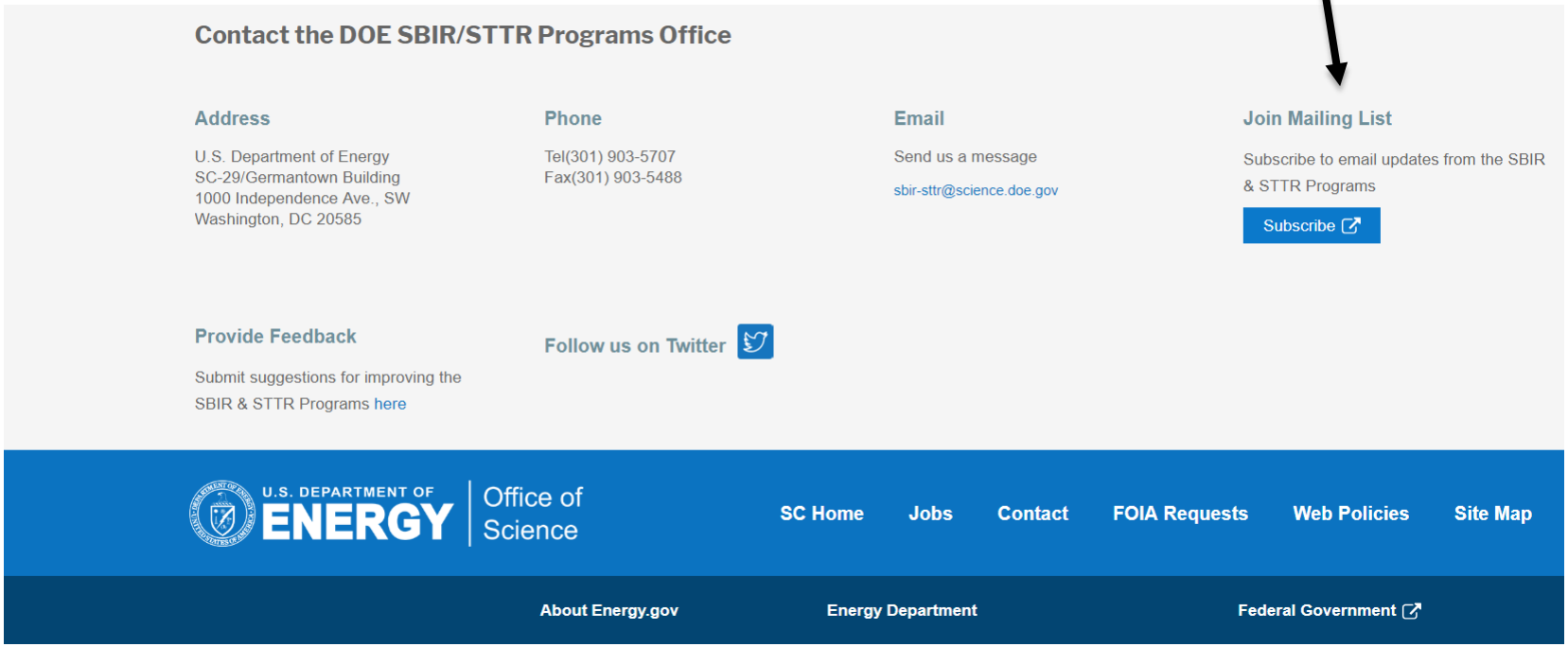
Phase I Release 2

- Office of Cyber Security, Energy Security, and Emergency Response
- Office Of Defense Nuclear Nonproliferation Research And Development
- Office of Electricity
- Office of Energy Efficiency and Renewable Energy
- Office of Fossil Energy and Carbon Management
- Office of Nuclear Energy

Funding Opportunity Announcement (FOA) Webinar

- FY24 Phase I Release 2 FOA will be issued on **December 11th**
- Join our Mailing List – this field is on every DOE SBIR/STTR web page
  - Following the issuance of the FOA, look for an email with a link to the FOA

- Webinar with Q&A for this FOA on **December 15th**
  - Overview of the FY 2023 DOE SBIR/STTR Programs
    - Following the issuance of the FOA, look for an email announcing this webinar



Reminder - Phase 0 Application Assistance Program

- Phase 0 application assistance program is available for first-time DOE SBIR/STTR applicants
- Participants receive an individual coach who is an expert in our application process.
- Program opens when Topics are released (Open now!)
- Visit http://www.dawnbreaker.com/doephase0/ to determine your eligibility and apply to Phase 0

Topic Basics

- Topics are created by DOE program managers and define important technology breakthroughs needed in R&D areas that support the DOE mission
- Topics are organized by DOE Program Office, e.g., EERE, FECM, etc.
- DOE program managers are listed with each subtopic
  - Questions to DOE program managers are limited to clarification of the topic and subtopic (including references)
  - Clarification is provided to help ***you*** determine whether your technology fits within the topic and subtopic
  - You may communicate with these topic managers from the release of topics until the grant application due date
  - The decision to apply is ***yours***

Example Topic

- Topic & Subtopic
  - You must specify the same topic and subtopic in your Letter of Intent and grant application
- Topic Header
  - Lists the maximum award amounts for Phase I & Phase II and the types of application accepted (SBIR and/or STTR)
- Program Manager
  - Each subtopic lists the responsible DOE program manager
- "Other" Subtopic
- References

12.INSTRUMENTATION FOR ADVANCED CHEMICAL IMAGING

Maximum Phase I Award Amount: $200,000	Maximum Phase II Award Amount: $1,100,000
Accepting SBIR Phase I Applications: YES	Accepting STTR Phase I Applications: YES

The Department of Energy seeks to advance chemical imaging technologies that facilitate fundamental research to understand, predict, and ultimately control matter and energy at the electronic, atomic, and molecular levels. The Department is particularly interested in forefront advances in imaging techniques that combine molecular-scale spatial resolution and ultrafast temporal resolution to explore energy flow, molecular dynamics, breakage, or formation of chemical bonds, or conformational changes in nanoscale systems.

Grant applications are sought in the following subtopics:

a. **High Spatial Resolution Ultrafast Spectroscopy**
Chemical information associated with molecular-scale processes is often available from optical spectroscopies involving interactions with electromagnetic radiation ranging from the infrared spectrum to x-rays. Ultrafast laser technologies can provide temporally resolved chemical information via optical spectroscopy or laser-assisted mass sampling techniques. These approaches provide time resolution ranging from the breakage or formation of chemical bonds to conformational changes in nanoscale systems but generally lack the simultaneous spatial resolution required to analyze individual molecules. Grant applications are sought that make significant advancements in spatial resolution towards the molecular scale for ultrafast spectroscopic imaging instrumentation available to the research scientist. The nature of the advancement may span a range of approaches including sub-diffraction limit illumination or detection, selective sampling, and coherent or holographic signal analysis.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

b. **Time-Resolved Chemical Information from Hybrid Probe Microscopies**
Probe microscopy instruments (including AFM and STM) have been developed that offer spatial resolution of molecules and even chemical bonds. While probe-based measurements alone do not typically offer the desired chemical information on molecular timescales, methods that take advantage of electromagnetic interactions or sampling with probe tips have been demonstrated. Grant applications are sought that would make available to scientists new hybrid probe instrumentation with significant advancements in chemical and temporal resolution towards that required for molecular scale chemical interactions. The nature of the advancement may span a range of approaches and probe techniques, from tip-enhanced or plasmonic enhancement of electromagnetic spectroscopies to probe-induced sample interactions that localize spectroscopic methods to the molecular scale.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

c. **Other**
In addition to the specific subtopics listed above, the Department invites grant applications in other areas that fall within the scope of the topic description above.

Questions – Contact: James Rustad, James.Rustad@Science.doe.gov

References:

1. U.S. Department of Energy, 2006, Office of Science Notice DE-FG01-05ER05-30, Basic Research for Chemical Imaging, BES Chemical Imaging Research Solicitation. (http://science.energy.gov/~/media/grants/pdf/foas/2005/DE-FG01-05ER05-30.pdf).

2. National Research Council, 2006, Visualizing Chemistry, The Progress and Promise of Advanced Chemical Imaging, National Academies Press. (http://www.nap.edu/catalog.php?record_id=11663).

Topic C58-11: ADVANCED MATERIALS AND MANUFACTURING TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Energy Technologies: Innovations in Microbattery Manufacturing

b. Energy Technology: Eco-friendly Innovations in Manufacturing of Lithium Metal for Batteries

c. Next Generation Materials and Manufacturing Processes: Low-Cost, Scalable Manufacturing of High-Purity MAX Phase Powders

d. Atomically Precise, Solid-state Devices for Energy Efficient Quantum Computing

Questions: Subtopic a – Paul Syers, paul.syers@ee.doe.gov and
Jeremy Mehta, Jeremy.Mehta@ee.doe.gov

Subtopic b – Changwon Suh, Changwon.suh@ee.doe.gov and
Jeremy Mehta, Jeremy.Mehta@ee.doe.gov

Subtopic c – J. Nick Lalena Nick.Lalena@ee.doe.gov , and
Jeremy Mehta, Jeremy.Mehta@ee.doe.gov

Subtopic d – Tina Kaarsberg, tina.kaarsberg@ee.doe.gov and
Brian Valentine, Brian.Valentine@ee.doe.gov

Topic C58-12: INDUSTRIAL EFFICIENCY AND DECARBONIZATION OFFICE (IEDO)

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Enabling Industrial Grid Interactivity
b. Energy Efficient Gas Separations
c. Innovations in Heat Exchange Processes, Equipment, and Integration Approaches for Deep Waste Heat Recovery
d. Renewable Hybridization of the Industrial Processes

Questions: Yaroslav Chudnovsky, yaroslav.chudnovsky@ee.doe.gov

Topic C58-13: BIOENERGY TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Sustainable Biomass Conversion to Bio-based Materials
b. Alternative Uses of Commercial Equipment (ACE)

Questions: Subtopic a – Beau Hoffman, Beau.Hoffman@ee.doe.gov
Subtopic b – Ben Simon, Ben.Simon@ee.doe.gov

Topic C58-14: BUILDING TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Windows
b. Affordable TES Systems
c. Advanced Air Leakage Detection and Air Sealing Technologies
d. Insulation Innovations
e. Solid-State Lighting Technologies
f. Heat Pumps/Heat Pump Water Heaters (HP/HPWH)

Questions: Subtopic a – Marc LaFrance, Marc.LaFrance@ee.doe.gov
Subtopics b, c & d – Sven Mumme, Sven.Mumme@ee.doe.gov
Subtopic e – Wyatt Merrill, Wyatt.Merrill@ee.doe.gov
Subtopic f – Alexander Rees, Alexander.Rees@ee.doe.gov

Topic C58-15: GEOTHERMAL

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Advanced Data Collection for Geothermal Exploration

Questions : Michael Weathers, michael.weathers@ee.doe.gov or
William Vandermeer, william.vandermeer@ee.doe.gov

Topic C58-16: HYDROGEN AND FUEL CELL TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Novel Applications for Stationary Fuel Cell Systems
b. Novel Materials for Use in Liquid Hydrogen Service
c. Novel Concepts for Hydrogen Infrastructure and Storage
d. Power Take-off Units for Medium-Duty Fuel Cell Electric Vehicles
e. High Temperature Membranes and Membrane-Electrode Assemblies for Fuel Cell Operation (BIL Funded)
f. Advanced Proton Exchange Membrane (PEM) Electrolyzer Bipolar Plates (BIL Funded)
g. Novel Water Electrolyzer Concepts (BIL Funded)

Questions: Subtopic a – Will Gibbons, William.Gibbons@ee.doe.gov
Subtopics b & c – Kevin Carey, kevin.carey@ee.doe.gov
Subtopic d – Ben Gould, Benjamin.Gould@ee.doe.gov
Subtopic e – Eric White, Eric.White@ee.doe.gov
Subtopic f – Anne Marie Esposito, annemarie.esposito@ee.doe.gov
Subtopic g – Elias Pomeroy, elias.pomeroy@ee.doe.gov

Topic C58-17: SOLAR ENERGY TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Power Electronic Technologies for Solar Systems
b. Supercritical Carbon Dioxide Power Cycles for Concentrating Solar Power (CSP)
c. Concentrating Solar-Thermal Power Technologies for Gen3 CSP, Commercial CSP (Gen2 CSP), or Concentrated Solar-Industrial Process Industrial Heat (SIPH)
d. Solar Hardware and Software Technologies: Affordability, Reliability, Performance, and Manufacturing

Questions: solar.sbir@ee.doe.gov

Topic C58-18: WATER POWER TECHNOLOGIES (FAST-TRACK ONLY)

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: NO	**Accepting STTR Phase I Applications: NO**
Accepting SBIR Fast-Track Applications: YES	**Accepting STTR Fast-Track Applications: YES**

a. Community-Centric Hydropower Technologies Development and Partnerships (BIL Funded)

b. Development of Marine Energy Systems in Open-Water Conditions (WEC/TEC Testing) (BIL Funded)

c. Coastal Structure Integrated Wave Energy Converters (CSI-WEC) (BIL Funded)

Questions: Charles Scaife, charles.scaife@ee.doe.gov

Topic C58-19: WATER POWER TECHNOLOGIES

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Emerging Sensors, Sensing Networks, and Other Monitoring Technologies
b. Innovations in Data Analytics, Models, and Tools
c. Pumped Storage Hydropower Innovative Concepts
d. Micro-Hydropower Development
e. Co-Development of Marine Energy Technologies
f. Development of Marine Energy Components / Subsystems

Questions – Contact: water.sbir@ee.doe.gov

Topic C58-20: OFFSHORE WIND ENVIRONMENTAL MONITORING TECHNOLOGY DEVELOPMENT

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Offshore Wind Energy Technology Solutions to Advance Monitoring for Wildlife Risk
b. Other

Questions : Joy Page, joy.page@ee.doe.gov

Topic C58-21: JOINT WIND ENERGY TECHNOLOGIES OFFICE/OFFICE OF ELECTRICITY TOPIC: ENERGY STORAGE FOR WIND

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Compact Long Duration Storage for Wind

Questions : Mohamed Kamaludeen mohamed.kamaludeen@hq.doe.gov and
Jian Fu, jian.fu@ee.doe.gov

Topic C58-22: VEHICLE TECHNOLOGIES OFFICE

Maximum Phase I Award Amount: $200,000	**Maximum Phase II Award Amount: $1,100,000**
Accepting SBIR Phase I Applications: YES	**Accepting STTR Phase I Applications: YES**
Accepting SBIR Fast-Track Applications: NO	**Accepting STTR Fast-Track Applications: NO**

a. Innovative Electric Vehicle Battery Cells and Components
b. High Voltage (≥3.3 kV, ≥ 200 A) Half-Bridge SiC Power Module for High Voltage Electric Vehicle Charging Systems and Solid-State Transformers (SSTs)
c. Energy Efficient Mobility Systems (EEMS): Increasing Efficiency Through Systemwide Innovation
d. Multifunctional and Intelligent Composites for Vehicle Applications
e. Biodiesel Fraction In-Situ Measurement Devices or Methods for Off-Road Vehicles

Questions: Subtopic a – Dr. Nico Eidson, Nicolas.Eidson@ee.doe.gov
Subtopic b – Fernando Salcedo, fernando.salcedo@ee.doe.gov
Subtopic c – Dr. Avi Mersky, Avi.Mersky@ee.doe.gov and
Energy Efficient Mobility Systems (EEMS) eems@ee.doe.gov
Subtopic d – Dr. Felix Wu, felix.wu@ee.doe.gov
Subtopic e – Nick Hansford, Nicholas.hansford@ee.doe.gov

DOE SBIR/STTR Programs Office Contact Information

- SBIR/STTR Web: https://science.osti.gov/sbir
- Email: sbir-sttr@science.doe.gov
- Phone Assistance Hotline: 301-903-5707
- DOE Phase 0 Assistance Program: http://www.dawnbreaker.com/doephase0/
- DOE Application Assistance: https://doetutorials.dawnbreaker.com/