

Innovative Physical Security Research, Development and Demonstration Laboratory Call

Office of Cybersecurity, Energy Security, and Emergency Response (CESER)

CESER's man-made threats program exists to foster innovative energy sector risk management tool and technology research, development, and demonstration. This includes a full range of technology readiness level investigations from foundational research studies to proof-of-concept experiments to pre-commercialization demonstrations and the full range of energy sector equities from energy resource transportation to end-use interfaces (e.g., energy storage/pipelines and car chargers).

The total funding available for this laboratory call for FY24 is approximately \$1-2M, with proposals not to exceed \$0.5 million per year; Project Period of Performance is 1-3 years. However, the project period of performance is expected to be completed in one year unless a project intends to pursue a more impactful concept that requires a longer project duration.

These proposals should not include gunshot detection; duplicative efforts with Department of Defense (DOD)/Department of Homeland Security (DHS); cyber, nuclear, electromagnetic interference (intentional or unintentional), or natural hazards mitigations.

Topics of Interest

Innovative Physical Security RD&D

Applicants should demonstrate expert, energy sector, physical security, state of the art knowledge against one or more man-made, non-cyber threats, including both common equipment, existing deficiencies, and discuss how promising proposed solutions would improve cost effective risk mitigation associated with those threats. Applicants should particularly consider current threats: conductor theft, sabotage, vandalism, unauthorized intrusion, ballistic damage, and future aerial threats. Applicants should consider the full range of risk management solutions (e.g., improved operational practice studies) against deployed and future energy infrastructure when developing proposals to develop the most cost-effective solutions. Applicants may need to work with federal or state government agencies (e.g., Federal Aviation Administration (FAA), Federal Communications Commission (FCC)) to develop new or modify existing Research, Development, Test & Evaluation (RDT&E) best practices to increase compliance with applicable government regulations to prevent collateral interference and damage. Applicants may partner with energy sector solution providers, asset owners/operators (including power marketing agencies), non-profits, other Federally Funded Research and Development Centers (FFRDCs) or academia to increase physical security technology readiness levels not yet commercially available, particularly those that can be scaled and retrofitted into existing infrastructure. Any partner commitment must be demonstrated through letters of intent that all parties involved commit to particular levels of effort and non-FFRDC or federal partners should include non-federal dollar cost-share to cover their involvement costs in the proposed effort. The proposed development efforts must concretely demonstrate advancement or continued research impracticality in a promising physical security technology to enhance energy sector infrastructure physical security. Innovative physical security solutions should look to establish the solution's efficacy and particularly the cost-effectiveness compared with the threat's current economic damage. If selected, projects must include a work plan that consists of no more than three distinct phases (technology readiness levels), not to exceed 36

months with concrete deliverables for each phase, building on the demonstrated progress in previous phases, and at least yearly go/no-go decision points aligning with fiscal year ends if proposing a multi-year plan. In each phase, projects will conduct RDT&E to demonstrate advancement and build on previous phases with an eye towards future pilots. Any risk characterization studies should focus solely on identifying previously unknown vulnerabilities with suggested mitigations or prioritizing existing mitigations by cost-effectiveness to bound future research efforts.

Evaluation of Proposals

CESER will evaluate proposals internally according to the following criteria:

CRITERION 1: TECHNICAL MERIT AND INNOVATION (40%) This criterion will evaluate the proposed project's technical merit, innovation, and feasibility in comparison to contemporary technology, along with the effectiveness of the proposal in addressing the technical requirements specified in the Laboratory Call.

CRITERION 2: SIGNIFICANCE AND IMPACT (40%) This criterion will evaluate the significance of implementation of the proposed technical concept/project, with respect to customer energy disruption and the resultant impact to energy system operational efficiency, cost-effectiveness, resiliency.

CRITERION 3: PROJECT EXECUTION AND MANAGEMENT APPROACH (10%) This criterion will evaluate the adequacy, appropriateness, and reasonableness of the proposed project management and risk strategies to achieve the stated goals and Department of Energy's (DOE) mission objectives.

CRITERION 4: TEAM AND RESOURCES (10%) This criterion will evaluate the likelihood that the identified project team, facilities, and other resources are appropriate and sufficient to achieve the project's proposed goals and objectives.

Eligible Applicants

Only DOE sponsored FFRDCs, such as National Laboratories, are eligible to apply for funding as a prime awardee. FFRDCs may also be proposed as a project team member sub-awardee.

NOTE: NETL is not considered eligible for award under this Laboratory Call and may not be proposed as a team member on another entity's proposal.

Submission Process

Labs must provide no more than a 2-page concept paper detailing the basic concepts, the proposed solutions and basic project structure. Following concept paper submissions and a responsiveness evaluation, each Lab will have an opportunity to present responsive concept paper ideas to DOE. Only ideas from concept paper submissions will be shared during presentations. Selections will be made following the presentations. The selected projects will submit statements of work during negotiations leading to award. ALL concept papers in response to this Laboratory Call must be submitted to PhysSecLabCall@netl.doe.gov

Government Right to Reject or Negotiate

DOE reserves the right, without qualification, to reject any or all proposals received in response to this Laboratory Call and to select any proposal, in whole or in part, as a basis for negotiation and/or award.

Estimated Timeline

- ***Submission Deadline for Concept Papers – May 10***
- ***Expected Dates for Virtual Presentations – May 20-24***
- ***Expected Date for Selection Notifications – June 7***
- ***Expected Date for Award – July 5***

Questions and Comments

Questions or comments on this opportunity should be directed to the PhysSecLabCall@netl.doe.gov