Call for Project Proposals for Fiscal Year 2019 New Starts Operational Energy Capabilities Improvement Fund

Enhanced Energy Storage to Improve Lethality and Warfighting Performance

Summary
The Office of the Deputy Assistant Secretary of Defense for Operational Energy (ODASD(OE)) is seeking to fund multi-year science and technology (S&T) projects to **enhance energy storage to improve lethality and warfighting performance**. "Improving lethality and warfighting energy performance" refers to increasing the military capabilities energy provides our forces and/or reducing the burdens and risks created by the need to sustain our forces with energy.

The Operational Energy Capabilities Improvement Fund (OECIF) will support new efforts or build on existing efforts, and will be managed by the Military Services or other Department of Defense (DoD) Components, with oversight by this office and the OECIF Program Manager. Proposals should come from DoD Components; this is not a call for proposals from non-government organizations.

Funding Available
Under this call, OECIF will fund projects for up to four years. For projects initiated in Fiscal Year (FY) 19, we expect the Services and/or other Components to be vested partners during development. Post-demonstration, the Services and/or other Components will provide funding in FY23 and beyond to continue awarded lines of research or to transition the new capabilities. While there is not a predetermined balance of funding across the topic, we anticipate the following funding for new OECIF projects started in FY19:

FY19	FY20	FY21	FY22
$10.7M	$10.1M	$10.3M	$10.5M

Services and/or other Components are expected to provide matching funding. Typical efforts will not exceed $2M annually inclusive of matching funding. Matching funding includes the value of government labor / in-kind funding. The final OECIF funding award will depend on the quality of the proposals received and the appropriations for the Operational Energy Capability Improvement Funds Budget Activity 3 ("6.3") Research, Development, Test and Evaluation Program Element. Additional funding for these projects, as appropriate, could be provided by other industry, academic, or inter-agency partners.

Background on OECIF Focus Area for FY19
Emerging trends in the operating environment have generated significant interest in energy storage. Energy resilience cannot be achieved without enhancements to energy storage. Future forces must be capable of operating for long periods of time from austere locations with a reduced logistical footprint and potentially with access to only indigenous energy sources. Project proposals should seek to improve energy storage technologies in power systems allowing their integration onto military platforms. While not prescriptive or exhaustive, these improvements could enable the following capabilities:

- Silent watch
- Greater on-board power for payloads
- Greater unrefueled range/endurance (i.e., through hybridization)
- Reduced weight and increased mobility for dismounted troops
- Increased reliability in energy availability
- Better performance for power and propulsion systems
- Reduced energy supply line burdens
- Increased/rapid recharge
- Matching power capabilities to demand

Improved operational energy related capabilities can be derived from specific technological improvements or goals, which include, but are not limited to:

- Increased power density and energy density
- Increased efficiency
- Improved safety
- Faster charging capabilities
- Increased performance at temperature extremes
- Standardization for acquisition cost reduction

Applications for these energy storage systems include, but are not limited to:

- Directed energy/electronic warfare
- Dismounted Warfighter combat load
- Long range/endurance unmanned systems
- Combined energy efficient power generation and storage systems
- Storage of energy in and from Space.

OECIF is focused on the maturation of technologies that will allow and can demonstrate the optimization of weapons and platform effectiveness in ever more challenging and contested environments. Proposed technologies should focus on broad adoptability, applicability, and enhanced lethality.

General Scope & Proposal Evaluation

Generally, the scope for this call includes new technologies or operational concepts directly related to energy storage systems, their safety and increased availability of warfighting systems they support.

Strong proposals include, but are not limited to, the following:

- Clear identification of improved military capabilities and/or performance goals
- Analysis of the proposed capability underpinned by data and scenario, preferably completed prior to the submission. At a minimum, these data and scenario information will be requirement as a go/no-go criteria at the first annual assessment.

- Involvement of two or more of the Services and / or a Combatant Command (CCMD). A greater number of transition partners will strengthen a proposal.
- A project plan – its technical and management approach – that is logical and broken into steps to assess progress and correct as needed along the way.
- Strong and experienced project team. This team must have active involvement and participation from at least one transition partner. Project proposals include specific Program Element (PE) numbers with follow-on funding requirements identified.
- Strong, active ties to the appropriate acquisition and user communities. These ties will help improve the prospects of a successful transition.
- Inclusion of interns on project work.

Proposals will be evaluated and selected for funding by ODASD(OE) based on the factors below. The first factor is the most important, while the remaining factors are of equal rank. Poor performance against any single factor is sufficient for a proposal to be eliminated.

1. Improved Operational Energy Effectiveness – The military benefit of the proposed project. The extent to which the proposed project would improve the operational energy related military capabilities and/or reduce the burdens and risks from DoD's energy supply lines. Well supported, quantified analysis will score better.
2. Project Plan/Jointness – The quality of the proposed technical and managerial approach. The goals, approaches, schedules and processes of the proposed project should be clearly identified, logical and demonstrate a clear understanding of the path forward. There should be a clear connection between the improved performance/capabilities sought and the technical goals and approach. Joint projects will score better.
3. Personnel/Team – The quality of the project team, including qualifications, expertise and demonstrated accomplishments in work relevant to the proposed project.
4. Commitment to Demonstration and Transition – Teams must demonstrate progress not less than once annually. At least one transition partner must be active throughout the life of the proposal. Memoranda of Understanding (MOUs) or other formal partnerships between research and acquisition/in-service/fielding organizations also are beneficial. Proposed projects that are aimed at an actual or developing military requirement and/or have clearly identified, firm pathways and commitments to both sustaining research in this area and transitioning the technology will score better. Once ODASD(OE) funding is exhausted, funding in FY23 and beyond is of chief interest, along with any non-ODASD(OE) funding in FY19 through FY22.
5. Cost – The reasonableness of the proposed cost for the proposed project.

<u>Proposal Instructions</u>

Proposals consist of three parts: a technical/management proposal, cost summary spreadsheet, and letter(s) of transition.

The technical/management proposal should be no longer than 10 pages. A suggested outline for the technical/management proposal includes:

1. Executive Summary
2. Improved Military Capabilities/Technical Goals – Describe the project's goals for developing advanced energy storage systems and the scope and expected military benefits

from those improvements. Describe the technical objectives for achieving those goals and how/why those objectives can be met. *(Addresses evaluation factor 1.)*

3. Project Plans and Jointness – Describe the detailed technical goals, approaches, schedules and planned demonstrations leading to requirements documentation. Describe the management structure, organizations involved, and their roles. Describe any joint aspects of the project. *(Addresses evaluation factor 2.)*
4. Personnel/Team – Describe the team that will manage the project and perform the technical work, including their qualifications for the work to be done. Identify the active transition partner(s), their organization and their role in the project. *(Addresses evaluation factor 3.)*
5. Commitment to Demonstration and Transition (include a and/or b)
    a. Demonstration – Describe plans by the Service(s) to incrementally test accomplishments culminating in a final demonstration in an operationally relevant environment (e.g., at a CCMD). *(Addresses part of evaluation factor 4.)*
    b. Transition to Acquisition – Describe the transition pathways and the role of the organizations involved. Describe specific methods, processes, or partnerships that will be used to ensure transition. Describe any funding potentially available for transition. *(Addresses evaluation factor 4.)*
6. Cost – Describe the overall cost of the project, how it would be supported by OECIF funds and contributions from other organizations, and how the requested funds would be spent. Include a summary table within the proposal, and a detailed spreadsheet as an attached Excel file, that presents the following information across the Future Years Defense Program: major cost elements of the proposed project (including in-house and external expenses), total project costs, and funding by source (in thousands of dollars); a sample spreadsheet is attached. *(Addresses evaluation factor 5.)*
7. Other – Any other issues that should be discussed in order to establish the value and approach of the proposed project.

Proposals should account for the following ODASD(OE) oversight requirements:

- Annual project reviews in the 2nd quarter of each FY
- Quarterly technical reviews
- Monthly financial and by-exception reports
- Monthly teleconferences
- Attendance of the Principle Investigator at the OECIF Annual Tech Exchange in August
- Attendance at demonstrations.

Proposal Submission

Each proposal must be submitted online through the OECIF portal, www.oecif.org. Government users wishing to submit proposals to the OECIF FY19 call will first need to create an account at www.oecif.org; users who participated in the submission or review process in FY18 should already have accounts. Once logged in, the user can select which service or combatant command will be leading the effort. From there, enter basic information about the project: the lead organization, the program manager, the principle investigator, funds requested from OECIF, and matching funds. Finally, the proposal, cost spreadsheet, and letters of transition should be uploaded into the system.

We will only accept proposals submitted by the energy offices of each Military Department and the CCMDs. This pathway is intended to allow the Military Departments and CCMDs to vet, coordinate, and recommend the proposals that are of interest to them. Services and CCMDs are encouraged to jointly perform. Services provide transition while CCMDs provide operationally relevant demonstration opportunities and requirements signals. Notification of proposal submission should be sent to the points of contact listed below.

Deadlines

Proposals are due to ODASD(OE) via www.oecif.org no later than noon September 14, 2018. Proposals must be submitted to the respected service energy office and/or Combatant Command by August 24, 2018. Please submit electronic copies, including the cost summary spreadsheet and any transition agreements.

ODASD(OE) intends to make funding decisions by October 15, 2018. ODASD(OE) may choose to fund all or part of any proposal and may request proposals be revised or combined.

Points of Contact

Below are points of contact for the Services and OSD. Proposers should reach out to the appropriate point of contact to coordinate the submission of proposals. General questions can be directed to ODASD(OE).

- Army: Office of the Assistant Secretary of the Army (Installations, Energy, and Environment), Nathan Cornell, (703) 697-1741, nathan.t.cornell.civ@mail.mil
- Navy and Marines: Office of the Deputy Assistant Secretary of the Navy (Research, Development, Test and Evaluation), Jim Caley, (571) 256-7871, james.c.caley@navy.mil
- Air Force: Office of the Deputy Assistant Secretary of the Air Force (Operational Energy), Daniel Pike, (571) 308-9848, daniel.pike.6.ctr@us.af.mil
- USAFRICOM: Science & Technology Advisor, Peter Teil, +49-711-729-2834, david.m.thiede.civ@mail.mil
- USCENTOM: Science & Technology Advisor, Martin Drake, (813) 529-8055, martin.a.drake.civ@mail.mil
- USEUCOM: Science & Technology Advisor, James Wiltz, +497116808922, James.r.wiltz.civ@mail.mil
- USNORTHCOM: Science & Technology Advisor, Col Gregg Jerome, (719) 554-3175, gregg.w.jerome.mil@mail.mil
- USPACOM: Science & Technology Advisor, Cynthia Holland, (808) 477-8041, Cynthia.Holland1@navy.mil
- USSOCOM: Director of Science & Technology, Lisa Sanders, (813) 826-9914, lisa.sanders@socom.mil
- USSOUTHCOM: Science & Technology Advisor, Todd Moe, (305) 437-1288, todd.a.moe.mil@mail.mil
- USSTRATCOM: Science & Technology Advisor, Eric Dernovish, (402)294-0447 (DSN 271), Eric.l.dernovish.civ@mail.mil
- USTRANSCOM: Science & Technology Advisor, Lou Bernstein, (618) 220-4337 (DSN 770), lou.bernstein.civ@mail.mil
- ODASD(OE): Clinton McAdams, (508) 233-6933, Clinton.b.mcadams.civ@mail.mil