



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

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SUSTAINMENT

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (INSTALLATIONS,
ENERGY, AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE NAVY (ENERGY,
INSTALLATIONS, AND ENVIRONMENT)
ASSISTANT SECRETARY OF THE AIR FORCE
(INSTALLATIONS, ENVIRONMENT, AND ENERGY)
DIRECTORS OF THE DEFENSE AGENCIES

SUBJECT: Fiscal Years 2022 and 2023 Energy Resilience and Conservation Investment
Program Guidance

This memorandum is a data call for Department of Defense Components to submit proposed Energy Resilience and Conservation Investment Program (ERCIP) projects for Fiscal Years (FYs) 2022, 2023, and for the remainder of the Future Years Defense Program (FYDP) (FY 2024 through FY 2026). Detailed guidance for the FYs 2022 and 2023 ERCIP program is included in Attachment A.

Please provide your proposed FY 2022 projects in the “FY 2022 ERCIP Project Submission Template” (Attachment B), proposed FY 2023 projects in the “FY 2023 ERCIP Project Submission Template” (Attachment C), and upload the associated project documentation to the ERCIP Portal.

The National Defense Authorization Act for FY 2017 emphasized the need for more resilient installations. Energy resilience and energy security projects will continue to be preferred for ERCIP consideration. Submissions should focus on proposed projects that are unlikely to be candidates for private financing (e.g., Energy Savings Performance Contracts) or for Operation and Maintenance funding. Please return Attachment B and upload FY 2022 projects into the ERCIP Portal by **April 1, 2020**, and return Attachment C and upload FY 2023 projects into the ERCIP Portal by **August 3, 2020**.

To support advanced project and program planning, submit proposed projects across the remainder of the FYDP using the “FY 2024-2026 ERCIP FYDP Project Submission Template” (Attachment D). In addition to aligning ERCIP planning with the rest of your Military Construction planning process, this will enable you to communicate funding plans for phased and multi-year ERCIP projects. Please return Attachment D by **August 30, 2020**.

Please direct all questions and submit files to Mr. Walter Ludwig (571-372-6859; walter.s.ludwig.civ@mail.mil). Thank you for your continued support of this critical program.

Lisa A. Jung
Deputy Assistant Secretary of Defense
(Energy)

Attachments: As stated

ATTACHMENT A:

**FISCAL YEARS 2022 and 2023
ENERGY RESILIENCE AND
CONSERVATION INVESTMENT
PROGRAM GUIDANCE**

February 2020

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1. Introduction

The Energy Resilience and Conservation Investment Program (ERCIP)¹ is a critical element of the Department of Defense's (DoD's) strategy to improve the energy resilience, energy security, and energy conservation of its fixed installations. As a Military Construction (MilCon) program, ERCIP has traditionally funded projects that promise a significant payback via reduced energy costs. Moving forward, ERCIP will focus on improving energy resilience, security, availability, reliability, and economic performance.

Although ERCIP has enjoyed strong support from Congress and the Office of Management and Budget, it is a relatively small program historically funded at \$150M, but has been adjusted to approximately \$142.5M annually for the Fiscal Year (FY) 2022 - 2026 Future Years Defense Program (FYDP). In FY 2018, ERCIP received a \$15M Congressional add, \$43M in FY 2019, and \$83M in FY 2020. At this funding level, the program will provide a small yet important contribution to DoD's projected investment needed to meet legislative, executive, and agency energy requirements. The DoD Components should continue to implement strategies in other facility programs and explore non-DoD financing opportunities (e.g., energy savings performance contracts or power purchase agreements) to save energy and water, improve energy resilience, contribute to mission assurance, and reduce DoD's utility costs.

2. Strategic Vision for the Program

Energy resilience, in accordance with section 101 of title 10, United States Code (U.S.C.), is "the ability to avoid, prepare for, minimize, adapt to, and recover from anticipated and unanticipated energy disruptions in order to ensure energy availability and reliability sufficient to provide for mission assurance and readiness, including mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements." ERCIP is focused on energy resilience; therefore, energy resilience projects will be weighted greater than energy conservation projects. However, the Office of the Deputy Assistant Secretary of Defense for Energy (ODASD(Energy)) continues to seek energy conservation projects that significantly reduce an installation's energy demand and improve mission readiness at a priority installation, especially if that project is high on the Component's priority list.

ERCIP will continue to fund water resilience projects. Water resilience projects are projects that improve or enable access to water in support of mission functions. ERCIP does not fund projects that are solely for water compliance, meaning a project whose sole objective is to enable installations to meet environmental and permitting standards.

DoD Instruction (DoDI) 4170.11 states that, for energy conservation projects, "Each DoD Component should strive to attain an overall annual ECIP program SIR [Savings to Investment Ratio] of 2:1 and must meet the minimum SIR of 1.25:1." For resilience projects, DoDI 4170.11 states that these projects shall be pursued based on life cycle cost effectiveness or if they remove unacceptable energy resilience risks. Moving forward, the ERCIP program will continue to require SIR evaluations for all projects. All MilCon projects require an economic analysis, which is the

¹ Changed by the National Defense Authorization Act (NDAA) for Fiscal Year 2017 through amendment of 10 United States Code (U.S.C.) 2914.

life cycle cost analysis (LCCA) for ERCIP projects. The SIR is part of the LCCA; therefore, all ERCIP projects will continue to have an SIR. However, as stated in DoDI 4170.11 for energy resilience projects, SIR will be a selection factor unless the project removes unacceptable energy resilience risks. ODASD(Energy) recognizes that energy resilience projects frequently have SIRs below 1.25:1; however, we encourage DoD Components to continue to evaluate savings opportunities for energy resilience projects, such as participation in demand response programs, avoided demand charges, rate/tariff adjustments, net metering credits, etc, which make the projects more financially viable. Additionally, consistent with DoD's installation energy strategy, ERCIP will fund holistic projects leveraging, where possible, the DoD Components' other investments in energy resilience, energy security, and energy conservation.

3. Funding Details

There are two types of ERCIP funds - Planning and Design (P&D) funds and Construction funds. Each are described below. Funding for the FY 2022/2023 programs will be available for obligation through **30 September 2026 and 30 September 2027, respectively.**

- 1) P&D funds are for planning, architectural, and engineering services required to prepare ERCIP projects for execution. ERCIP P&D funds are available for obligation for four years following the year of appropriation. ERCIP P&D funds may be combined with prior year ERCIP P&D funds, so long as the prior year funds are still available for obligation. To assist with developing ERCIP proposals, P&D for the FY 2022 program will be released in FY 2021, as soon as it is available. P&D for the FY 2023 program will also be released as soon as it is available. This practice will continue into the foreseeable future. P&D funds allocated for ERCIP projects may only be used for ERCIP projects and may not be augmented by any other non-MilCon appropriation.

To request additional P&D after Congressional notification of award, DoD Components shall request approval from ODASD(Energy) using the template included as Appendix I. The template requires information on the original P&D amount, remaining P&D, requested P&D amount, and rationale for request.

- 2) Construction funds are for executing ERCIP projects. Construction funds are typically obligated through a Design/Build or Design/Bid/Build contract. Construction funds are available for obligation for four years following the year of appropriation. ERCIP construction funds may be combined with prior year ERCIP construction funds, so long as the prior year funds are still available for obligation. ERCIP construction funds may not be augmented by any other non-MilCon appropriation.

Based on OSD's President's Budget Submission, Congress typically authorizes projects over \$3M by listing each project's location and Program Amount (PA) in the NDAA. Projects with a value less than \$3M are aggregated into a lump sum, which is listed as "Various Locations." There is no specific threshold dollar amount for projects to qualify for ERCIP funding. While the DoD retains the broad authority established by 10 U.S.C. 2914, every effort should be made to minimize changes to authorized projects or aggregated "Various Locations" projects listed in the

OSD Budget Submission. Proposed changes shall follow the process outlined in Section 10.3 – Project Changes and Cancellations.

3.1 Funding Allocation

ERCIP funding will be allocated using a methodology that:

- Allows projects to compete against other submitted projects based on the criteria listed in Section 4 – Prioritization Criteria and Process, and
- Distributes funding across two categories of projects: Energy Resilience (which includes Energy Resilience and Water Resilience) and Energy Conservation (which includes Renewable Energy, Energy Efficiency, and Water Conservation). Energy Resilience projects (see Appendix II for definition) will be weighted higher than Energy Conservation projects.

Project Category	Energy Resilience		Energy Conservation		
Subcategory	<i>Energy Resilience</i>	<i>Water Resilience</i>	<i>Renewable Energy</i>	<i>Energy Efficiency</i>	<i>Water Conservation</i>

Table 1 - ERCIP Funding Allocation Categories (Block size does not indicate suggested allocation)

Table 1 illustrates the project funding categories for the FY 2022/2023 program. There is no specific percentage allocated to categories or subcategories.

4. Prioritization Criteria and Process

ODASD(Energy) evaluates and prioritizes projects within each of the two categories in order to maximize the benefit of the project portfolio for contribution to mission assurance, the strategic vision for the program, and SIR (for Energy Conservation projects). The following is the criteria utilized by ODASD(Energy) to evaluate ERCIP proposals (listed in order of decreasing importance):

- 1) Inclusion in an installation, region, department, or DoD Component energy plan. Special consideration will be given to projects that address mission resilience requirements as identified in an IEP;
- 2) Contribution to energy resilience, energy security, and mission readiness and assurance at an installation.
 - a. The project is the best solution to improve mission readiness and assurance at the installation.
 - b. The project meets critical mission requirements.
- 3) Location on an installation on the DoD’s priority installation list;
- 4) Service priority;
- 5) Results of the OSD Energy Resilience Assessment (ERA) Tool;
- 6) SIR value and the Simple Payback. An energy investment’s “Simple Payback” is the time it would take to recover the initial investment in energy savings. Payback = Cost of project / Energy savings per year;
- 7) Value of resilience attributes that do not cash flow (e.g., cost avoidance for work stoppage caused by power outage), if this information is included (see Section 7 – Economic Analysis);

- 8) Leverage of DoD demonstrated technology (e.g., a technology that has been demonstrated in an ESTCP project) (see Appendix II for test bed technology program links);
- 9) DoD Component's past obligation rate (i.e., the percentage of funds obligated versus the amount appropriated);
- 10) Impact on energy consumption at an individual installation;
- 11) Diversification of energy technologies meaning combining different types of energy technologies, such as generation, storage, and control technologies. Benefits should be described and quantified.
- 12) Contribution towards Executive Order 13834 objectives.

5. ERCIP Project Submissions

5.1 ERCIP Project Submittal Package

For FY 2022 ERCIP submissions, DoD Components must upload all required documents to the ERCIP Portal by **April 1, 2020**. For FY 2023 ERCIP submissions, DoD Components must upload all required documents to the ERCIP Portal by **August 3, 2020**. See Appendix III for information on how to upload the submission package to the Portal.

The following documents must be included in the ERCIP submittal package:

- FY 2022/2023 ERCIP Project Submission Templates – The Submission Templates for FY 2022 (Attachment B) and FY 2023 (Attachment C) must include Component rankings of all projects along with high level project data.
- Quad Chart – The Quad Chart (Attachment D) provides a high-level overview of each project including the basic project data, the project scope and requirements, the project justification, and the project's contribution to mission readiness.
- DD Form 1391 – The DD Form 1391 must be completed for each project. In addition to the information required by the DD Form 1391, DoD Components should include:
 - Site information data consisting of site approval, National Environmental Policy Act (NEPA) documentation, mitigation issues (e.g., wetlands, hazardous waste, etc), environmental cleanup, and any other potential project issues (e.g., permits, land acquisition, historical preservation, etc).
 - A Measurement and Verification (M&V) plan and cost estimate. The DoD Component is required to ensure the goals of the project are met through an M&V plan. Section 6 – Measurement & Verification – and Appendix II contain additional information.
 - If an ERCIP project involves Control Systems (CS), then the DD Form 1391 must identify the anticipated cost of assessing and authorizing (A&A) and the source of the funding, if it is not ERCIP. DD Form 1391s should also identify expected recurring costs for sustainment of CS cybersecurity as an Operations & Maintenance (O&M) appropriation expense and acknowledge that the appropriate organization agrees to budget for future sustainment costs. Additionally, if the installation's IEP includes CS cybersecurity, that information should be included in the 1391. For more information, see Section 8 – Operational Technology and Control Systems.

- LCCA – The LCCA must include an SIR calculation and documentation for all energy and non-energy savings accounted for in the project. Military installations must perform LCCAs based on MilCon and DoDI 4170.11 requirements. DoD Components shall include evidence that the most cost-effective life-cycle solution was chosen for the proposal. Section 7 – Economic Analysis – contains additional information for completing the LCCA calculation.
- Energy resilience projects must include the following additional items:
 - Answers to the energy resilience questions listed in Appendix IV.
 - The OSD ERA Tool input data and resulting output. For information on using the OSD ERA tool, see <https://osdera.ll.mit.edu/era/home/#/>.

5.2 Best Practices for ERCIP Submissions

To ensure completeness of ERCIP submissions and ease of review, below are additional best practices for ERCIP submissions.

- Project titles should be concise, easy-to-comprehend, and indicative of the overall project objective. The title should include the 1) specific energy system being improved, 2) size of the system, and 3) building or area where the project is to be installed. If multiple technologies are being utilized, the main energy system of the project should be identified in the project title.
- Ensure project data is consistent across documents. For example, ensure values for SIR, simple payback, project cost, LCCA, etc. are consistent throughout the project submission documents. All project packages must contain information that is accurate, current, and verified.
- Energy resilience project submissions must demonstrate how the project enhances mission assurance, supports mission critical functions, addresses known vulnerabilities, and is cost effective.
- Energy resilience projects must demonstrate that they meet or exceed a mission requirement. The submitting military installation is required to submit the critical loads serviced by the project and the mission requirement that the energy resilience project is planned to support, including the expected level of availability for the critical loads. This information must be included in project submissions. If information is classified, inform ODASD(Energy) and provide the submission using the appropriate information technology (IT) system.
- ERCIP projects should not be proposed to increase energy generation in response to mission growth. New missions should fund necessary energy generation.
- Answers to the energy resilience questions should provide sufficient explanation for reviewers to understand the resilience benefits of the project. **Yes/no answers are not sufficient.** Additionally, if the project fills a gap identified in the installation's IEP, that information should be noted in the answers.

6. Measurement & Verification

All ERCIP projects require M&V to facilitate tracking of energy savings and/or energy generation/availability for the entire life of the project, as listed in the LCCA. Consequently, all projects must have an M&V plan that shows how the project meets, exceeds, or contributes to a

mission requirement. For energy conservation projects, M&V activities should occur at least every four years (per 42 USC 8253) to verify the energy savings expected in the LCCA. For energy resilience projects, M&V ensures that energy resilience goals are met by verifying that power is available for critical loads. In the DD 1391 for energy resilience projects, the DoD Component establishes a metric for each project, and the M&V plan establishes activities for ensuring that metric is met. For more information on developing a metric, see the upcoming *Metrics and Standards for Energy Resilience at Enduring Installations* memo. Additional guidance describing the operations, maintenance, and testing aspects of energy resilience is available in *Energy Resilience: Operational, Maintenance, & Testing (OM&T) Strategy and Implementation Guidance* dated March 2017.

M&V plans shall closely follow the Federal Energy Management Program (FEMP) M&V guidance - Option A, B, C, or D (See Appendix II for FEMP M&V guidance). Slight variations of these Options, such as using a “calculated” method for small projects can be utilized.

The M&V cost estimate shall be part of the DD 1391 package, as well as a draft plan, if available. The M&V plan must be uploaded to the Portal before project award can be made. If, within the lifetime of project operation, a technology, environmental, or other change occurs that significantly alters the project scope or performance, then the DoD Component must prepare a new M&V plan that is more suitable for the new conditions. The DoD Component shall notify ODASD(Energy) of the change using the Change Notification template available in Appendix V prior to implementing the change. The new M&V plan and Change Notification shall then be uploaded to the Portal to replace the current plan.

If a project does not easily fit into FEMP’s M&V options, then the DoD Component will create a plan that follows the criteria below:

M&V plans shall identify M&V activities that have the most likelihood of being performed in the current budget and resource constrained environment. Automating data collection and data analysis to the maximum extent possible may reduce the amount of resources necessary to document project performance. In addition, for energy conservation projects, the cost of conducting M&V activities should be commensurate with the estimated savings potential of the project. In other words, M&V costs should not significantly affect the savings realized from the project. M&V plans shall address, at a minimum:

- 1) Details of baseline conditions and data collected;
- 2) Documentation of all assumptions and sources of data;
- 3) Equipment necessary for M&V;
- 4) Processes to ensure data are captured accurately and in a timely manner;
- 5) How data will be used to monitor equipment performance;
- 6) Opportunities for continuous improvement of data collection;
- 7) Overview of proposed energy and cost savings;
- 8) Utility rates and the method used to calculate cost savings;
- 9) Details of post-installation verification activities, including inspections, measurements, and analysis; and
- 10) Costs associated with performing M&V and the source of the funds.

7. Economic Analysis

An economic analysis is required for all MilCon projects; therefore, ODASD(Energy) requires LCCAs for all ERCIP projects to assess their long-term cost-effectiveness. An LCCA considers all costs associated with an alternative over its entire useful life, as well as the cost arising from constructing or procuring, operating, maintaining, and ultimately disposing of a project. Projects proposed as a replacement for a cancelled project also require an LCCA.

As in previous years, DoD Components shall base the SIR and the LCCA on the recommended useful life of a new asset, retrofit, or the remaining life of the basic system being retrofitted, whichever is less (see Appendix VI). In addition, DoD Components shall use the actual cost of energy purchased for use at the facility as the basis for energy cost analysis rather than stock fund prices or Working Capital Fund rates as these rates are often out-of-date and may include storage and other overhead costs. DoD Components should also ensure they are using the most up-to-date data from the International Energy Agency (IEA) / National Institute of Standards and Technology (NIST) for their cost factors, which means they may have to download new versions of the LCCA / Building Life-Cycle Cost (BLCC) templates. There is an ERCIP-specific module available for download at the energy.gov website: <https://www.energy.gov/eere/femp/building-life-cycle-cost-programs>.

There are three changes to the Economic Analysis requirements for FY 2022/2023 ERCIP submissions.

- 1) The SIR calculation savings are limited to savings that cash flow to DoD.
 - a. As in previous years, the SIR is required for all projects. In order to ensure the SIR is calculated in a standard fashion across installations and Components, this guidance requires that cost savings included in the SIR calculation are limited to those that result in cash flow savings to DoD. Cash flow savings may include energy and power cost savings (with associated escalation rates), utility rebates, demand response program payments, avoided demand charges, rate/tariff adjustments, net metering credits, and O&M costs directly eliminated, such as contracts related to replacing equipment. Any savings included must be as accurate as possible and defensible.
- 2) The project amount used for the SIR calculation must include A&A.
 - a. The anticipated cost for A&A shall be included in LCCA calculations to determine SIR and Simple Payback. LCCAs must be submitted with documentation on all cost savings included in the calculation so that ODASD(Energy) can understand the factors considered. For more information, see Section 8 – Operational Technology and Control Systems.
- 3) For projects with energy resilience attributes that do not cash flow, DoD Components may add a section to their submission describing the project's value beyond cash flow savings (e.g., cost avoidance, such as the labor cost of a work stoppage). This section is **OPTIONAL**.
 - a. If Components choose to include this type of information, the resilience value described by the Components should include the following elements:
 - i. Qualitative description of the value ascribed to the resilience attribute;
 - ii. Methodology for calculating the resilience attribute; and
 - iii. Dollar amount for the resilience attribute.

ODASD(Energy) recognizes that adding requirements to ERCIP submissions is cumbersome and

labor-intensive. In spite of the added effort, there are several reasons this guidance encourages Components to describe the added value of resilience projects:

- Support for ODASD(Energy)'s justification to Congress on the on-going need and value of ERCIP;
- Justify the project's value to Congress, despite a low SIR;
- Describe and quantify the project's value perceived by DoD Components;
- Collect information on the potentially disparate types of additional value provided by resilience projects; and
- Support the DoD-wide conversation about the value of resilience.

8. Operational Technology and Control Systems

Many ERCIP projects require installation or modification of Operational Technology (OT), which is hardware and software that detects or causes a change through the direct monitoring and control of physical devices, processes, and events in the enterprise, including Control Systems (CS) and Facility-Related Control Systems (FRCS). CS encompass several types of systems used in operating DoD buildings, facilities, utilities, and other infrastructure that require specialized actions to ensure they remain cybersecurity. Examples of CS on DoD facilities include:

- Advanced Metering Infrastructure
- Building Automation Systems
- Building Management Control Systems
- CO₂ Monitoring
- Emergency Management Systems
- Energy Management Systems
- Exterior Lighting Control Systems
- Fire Alarm Systems
- Fire Sprinkler Systems
- Fuel Storage & Distribution Systems
- Interior Lighting Control Systems
- Public Safety/Land Mobile Radios
- Renewable Energy Geothermal Systems
- Renewable Energy Photovoltaic Systems
- Shade Control Systems
- Smoke and Purge Systems
- Vertical Transport System (Elevators and Escalators)
- Laboratory Instrument Control Systems
- Laboratory Information Management Systems
- Water and Wastewater Control Systems
- Utility Control Systems
- Utility Monitoring & Control Systems
- Energy Management Control Systems
- Distribution Control Systems
- Supervisory Control and Data Acquisition systems
- Substation Automation
- Systems associated with microgrids and on-base distribution systems
- "Smart" devices (Wi-Fi or Bluetooth-enabled)

To ensure that CS systems installed or modified under ERCIP have the proper NIST cybersecurity controls applied during the design phase, all ERCIP projects involving CS must account for and fund the initial cost of A&A for the CS under the Risk Management Framework (RMF). At the end of the A&A process, the project shall achieve Authority to Operate (ATO) as a contract deliverable, if applicable. ERCIP funds and other funding sources (e.g., procurement funding) may be used to fund A&A. Pre-award, ERCIP P&D can be used for CS, and post-

award, ERCIP construction funding can be used. Generally, the following are construction costs related to the installation of FRCS that ERCIP can fund: procurement and installation of FRCS, procurement and installation of government owned OT supporting FRCS, and certification and/or accreditation of these systems in accordance with the RMF (listed separately in Block 9 as "RMF Accreditation"). All other costs related to the design and initial A&A of these systems required prior to construction may use ERCIP P&D, or other funding sources. These requirements should be listed in the Supplemental Data section of the DD 1391 (Block 12) by identifying the requirement, fund source to be used, and line item costs. Regardless of funding source, all DD Form 1391s for ERCIP projects shall identify the anticipated cost of A&A and identify the source of the funding, if it is not ERCIP. DD Form 1391s should also identify expected recurring costs for sustainment of CS cybersecurity as an Operations & Maintenance (O&M) appropriation expense and acknowledge that the appropriate organization agrees to budget for future sustainment costs. These recurring O&M costs may include, but are not limited to, technology refreshes, annual contract labor support, installation management of the ATO, cyclical contract maintenance review of O&M for compliance with system design requirements, etc. ERCIP funds may be used for IT costs if directly required for A&A, but shall not be used for any IT costs beyond initial A&A. All FRCS projects must be designed in accordance with Unified Facilities Criteria (UFC) 4-010-06 *Cybersecurity of Facility-Related Control Systems* dated September 2016, and Defense Federal Acquisition Regulation Supplement (DFARS) 252.204-7012 *Safeguarding Covered Defense Information and Cyber Incident Reporting*. All energy projects must adhere to the applicable DoD Component's existing cybersecurity policy and guidance.

For ERCIP projects funded in FY 2017 or earlier, ERCIP funds may be used to pay for CS A&A ONLY, if those costs are identified and accounted for before contract award. ERCIP funds shall not be used to modify existing contracts to include the cost of A&A. No additional ERCIP funds will be made available from ODASD(Energy) to account for A&A costs on prior year projects. Funds must come from a DoD Component's available unobligated balance. DoD Components shall notify ODASD(Energy), before contract award, on any previously approved project that intends to add A&A using ERCIP funds.

New for FY 2022/2023 proposals, the anticipated cost for A&A shall be included in LCCA calculations to determine SIR and Simple Payback. Guidance for applying the RMF and CS A&A can be found in Appendix II. ODASD(Energy) Subject Matter Experts (SMEs) are available to assist project teams in performing RMF A&A, including documentation and packages.

9. Utilities Privatization

ERCIP funds cannot be used to improve privatized utility systems including systems that are in the procurement phase for utilities privatization. For the purposes of this guidance, the procurement phase begins on the date that a request for proposal is issued and ends on the date that either the system is conveyed or the date that the procurement is terminated.

For projects that involve, or are connected to privatized systems, submission documentation must:

- Indicate who owns the current systems and who will own the completed ERCIP project;
- Include a line item for a "Service Connection Fee" in Block 9 of the DD 1391 as a "Supporting Facility" cost. The "Service Connection Fee" shall include all costs to be incurred by the private system owner as necessary to connect the new government-owned

infrastructure to their system;

- Include UP contract financial analysis supporting project implementation;
- Include a site plan and/or notional system layout depicting system boundaries and points of demarcation between the new government-owned infrastructure and the privatized system.
- Describe how O&M of the government-owned system will be coordinated and de-conflicted with O&M of the privatized systems within relatively close physical, and/or operational vicinity of one another.

Note that ERCIP investments in military owned utility systems anticipated to be privatized may not be lifecycle cost effective in comparison to other funding alternatives, such as those to be provided by a future privatization system owner. For more information, view the *OSD Supplemental Guidance for the Utilities Privatization Program* dated February 7, 2019.

10. DoD Component Responsibilities and Program Administration

DoD Components are responsible for identifying and executing ERCIP projects and providing regular updates on the progress of their program's implementation. As such, each DoD Component shall:

- 1) Develop and submit projects for ODASD(Energy) approval;
- 2) Execute approved projects forwarded to Congress within funds allocated by the Under Secretary of Defense (Comptroller);
- 3) Maintain current, auditable documentation and report consistently on the execution of each approved ERCIP project, including M&V;
- 4) Identify a main point of contact for matters related to programmatic decisions, administration, and communication with ODASD(Energy); and
- 5) Provide evidence of A&A and ATO for CS ERCIP projects.

10.1 ERCIP Portal Requirements

To streamline management and administration of the program and to facilitate the proposal, approval, tracking, and monitoring processes of ERCIP projects, ODASD(Energy) maintains a centralized web based ERCIP Portal (Portal), which supports all project submissions and subsequent updates. The Portal enables the DoD Components and ODASD(Energy) to track the status and actual performance of projects, and thus offer better insight into the program's overall effectiveness. Additionally, the Portal allows convenient access to project data to complete the ERCIP Annual Report to Congress as well as data calls to support Congressional and other inquiries. Appendix III contains instructions on accessing the Portal and requirements for maintaining project records.

10.2 Reporting Requirements

Annual Report to Congress: 10 U.S.C. 2914c requires OSD to submit to Congress an annual report on the status of the planned, active, and completed projects. Each year, ODASD(Energy) collects the required information from the Portal, such as original and expected SIR, Simple Payback estimates, and original and actual M&V costs. DoD Components should ensure that their Portal records are up-to-date by October 31 each year, so OSD has the correct information for the report,

which is due no later than 90 days after the end of each fiscal year. Refer to Appendix III for more information on the Annual Report.

Actual Performance Data: DoD Components shall provide actual performance data obtained through the identified project M&V plan of their completed projects on an annual basis. If, per the M&V plan, no data collection is required in a given year, that information should be noted in the Portal. Data will be submitted through the Portal no later than October 31 each year and shall reflect data for the previous year. Annual updates shall be made in the Portal during the entire life-cycle of the project. Refer to Appendix III for more information.

Quarterly Reports: To provide ODASD(Energy) updates on the status of the projects, each quarter, DoD Components will validate a report generated from Portal data. ODASD(Energy) will prepare the report and send to DoD Components for validation each year on January 31, April 30, July 31, and October 31. DoD Components will be required to verify information, such as PA, SIR, Payback, bid savings, energy cost savings, energy resilience metrics (critical load and availability data), energy resilience economic performance, and award data (if applicable). Refer to Appendix III for more information on the data required for the Quarterly Reports, and the upcoming *Metrics and Standards for Energy Resilience at Enduring Installations* memo for more information on energy resilience metrics.

Program Reviews: DoD Components will brief the DASD(Energy) annually (or every other year, at the discretion of ODASD(Energy)) providing a strategic overview of their program; summarizing the performance of their projects; discussing successes, challenges, and lessons learned; and reviewing program financial information, such as obligation rates, available funding, and status of expired funds. ODASD(Energy) will provide a briefing guide prior to each program review.

10.3 Project Changes and Cancellations

DoD Components are responsible for ensuring their projects can be executed within their PA; however, **all** changes to PA or scope must be approved by ODASD(Energy). If, at any stage during the life of the project, there is any change in cost, scope, or any other aspect of the project (including M&V plans), the DoD Component shall notify ODASD(Energy) of the change using the Change Notification template in Appendix V. The documentation must include reasons for the change, cost and scope impacts, the program appropriation years affected, as well as revised DD Form 1391 and LCCA. Specifically, DoD Components will provide the FY and Project Number that will be utilized to fund an increased PA or, in the case of a decreased PA, the FY and amount of remaining funds available for future use. Funding increases may be derived from multiple projects, and funding decreases may be used to fund increases to multiple projects.

Provided no objection exists, contracts or contract modifications may be awarded upon written approval from ODASD(Energy). When ODASD(Energy) approves changes to a project, the DoD Component shall upload the email approval of the change, the revised DD Form 1391, and the LCCA to the Portal project record.

If a contractor submits a Request for Equitable Adjustment (REA) on an ERCIP project, the DoD Component must notify ODASD(Energy) as soon as possible.

If, for any reason, a project must be cancelled, the DoD Component shall notify ODASD(Energy) using the Change Notification template in Appendix V. The DoD Component shall upload

ODASD(Energy) email approval of the project cancellation to the Portal. The DoD Component may propose a previously unfunded project as a replacement project or may propose that the funds from the canceled project be used to support an existing ERCIP project requiring PA increase. ODASD(Energy) must approve **any** transfer of funds from a canceled project. Replacements for cancelled projects will be selected by ODASD(Energy) from a prioritized list of previously submitted, but not selected projects, or other emerging mission requirements. If necessary, the cancelled project's funds can be returned to the OSD Comptroller for redistribution to a different DoD Component.

For energy conservation projects, if the project change reduces the project SIR below the programmed SIR (provided in the program year's Congressional Notification), additional information may be requested to justify the change.

11. ERCIP Annual Timeline

Due Date	Task	Action
December 31, 2019	ODASD(Energy) submits Annual Report to Congress	ODASD(Energy)
January 2020	ODASD(Energy) releases ERCIP guidance for upcoming cycle ODASD(Energy) submits selected FY 2021 ERCIP portfolio to Under Secretary of Defense (Comptroller/Chief Financial Officer) (USD(C)) for inclusion in President's Budget (PB)	ODASD(Energy)
January 31, 2020	Quarterly Portal validation report distributed	ODASD(Energy)
February/ March 2020	USD(C) submits PB to Office of the President	USD(C)
APRIL 1, 2020	DoD Components submit proposed FY 2022 projects to ODASD(Energy)	DoD Components
April 2020	Upon receipt of FY 2020 construction appropriations, ODASD(Energy) sends Congressional Notification for projects intended to be awarded, and includes any changes to previously appropriated projects. Following waiting period of 14 days, USD(C) will distribute funds to Components. ODASD(Energy) will receive construction appropriations to fund FY 2022 ERCIP portfolio by 3 rd quarter of project's programmed year.	ODASD(Energy)
April 30, 2020	Quarterly Portal validation report distributed	ODASD(Energy)
April/May 2020	ODASD(Energy) and some DoD Components participate in ERCIP brief for Congressional Staffer Days	ODASD(Energy)/ DoD Components
July 31, 2020	Quarterly Portal validation report distributed	ODASD(Energy)
AUGUST 3, 2020	DoD Components submit proposed FY 2023 projects to ODASD(Energy)	DoD Components
AUGUST 30, 2020	DoD Components submit proposed projects for FY 2024 – FY 2026 (Attachment E)	DoD Components
October 31, 2020	Quarterly Portal validation report distributed and annual performance updates due	ODASD(Energy)/ DOD Components
Ongoing	Working group meetings (if necessary) conducted to continuously improve ERCIP process	ODASD(Energy)/ DoD Components
As needed	ERCIP Change Notification Submissions and supporting documentation	ODASD(Energy)/ DoD Components

Appendix I: Additional Planning and Design Funds Request Template

[Date]

Additional Planning and Design Funds Request

[Fiscal Year, Project Number and Title, Location]

DETAILS:

- a. Original P&D amount, remaining P&D, and requested P&D amount.
- b. Rationale for funding request.
- c. Any other pertinent details.

Appendix II: References

Technical Assistance for Life-Cycle Cost Analysis

- a. *Financial Management Regulation*, DoD 7000.14-R, Vol 2b, Chapter 6
https://comptroller.defense.gov/Portals/45/documents/fmr/Volume_02b.pdf
- b. *Economic Analysis for Decision Making*, DoD Instruction (DoDI) 7041.03, Sept 9, 2015
<https://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/704103p.pdf>
- c. The Department of Energy (DOE) Federal Energy Management Program (FEMP) maintains a webpage entitled “*Building Life Cycle Cost Programs*”
<http://energy.gov/eere/femp/building-life-cycle-cost-programs>

This page includes links to many life-cycle costing resources including:

- 1) *Life-Cycle Costing Manual for the Federal Energy Management Program*, NIST Handbook 135 (current version 1995)
 - 2) The Annual Supplement to NIST Handbook 135, *Energy Price Indices and Discount Factors for Life-Cycle Cost Analysis - 2019*, NISTIR 85-3273-34
 - 3) *Energy Escalation Rate Calculator*
 - 4) NIST *Building Life-Cycle Cost (BLCC5) Program Version 5_3_19*
- d. *The Memorandum of Agreement on Criteria/Standards for Economic Analysis/Life-Cycle Costing for MilCon Design (1991)* - The Tri-Services memorandum establishes criteria and standards for performing economic analysis for MilCon projects using a different discounting approach, yet consistent with the LCC rule promulgated in 10 CFR 436.
<https://www.wbdg.org/files/pdfs/moa.pdf>

Measurement & Verification (M&V) Guidance

- e. DOE FEMP *M&V Guidelines: Measurement and Verification for Performance-Based Contracts Version 4.0*
http://energy.gov/sites/prod/files/2016/01/f28/mv_guide_4_0.pdf

Information Technology (IT) and Control Systems (CS) Security

- f. NIST Special Publication 800-53, *Security and Privacy Controls for Federal Information Systems and Organizations*
<http://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-53r4.pdf>
- g. NIST Special Publication 800-82, *Guide to Industrial Control Systems (ICS) Security*
<https://nvlpubs.nist.gov/nistpubs/SpecialPublications/NIST.SP.800-82r2.pdf>
- h. Federal Information Processing Standards Publication 200: *Minimum Security Requirements for Federal Information and Information Systems*
<http://csrc.nist.gov/publications/fips/fips200/FIPS-200-final-march.pdf>

- i. DoDI 8500.01, *Cybersecurity*
http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/850001_2014.pdf
- j. DoDI 8510.01, *Risk Management Framework (RMF) for DoD Information Technology (IT)*
http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/851001_2014.pdf
- k. DoDI 8530.01, *Cybersecurity Activities Support to DoD Information Network Operations*
<http://www.esd.whs.mil/Portals/54/Documents/DD/issuances/dodi/853001p.pdf>
- l. Additional information about DoD CS and associated cybersecurity requirements may be found on the DoD Chief Information Officer's Risk Management Framework Knowledge Service portal, and the ESTCP Cybersecurity Guidelines Resources website. Contains FOUO documents and guidance such as Joint Staff Mission Assurance Benchmarks. (CAC required)
<https://rmfks.osd.mil/login.htm>
- m. ESTCP Cyber Security Guidelines Resources website. Contains a cyber effort cost sheet, the EI&E Control Systems Master Naming List, how to create Test and Development Environments and other relevant guidance. (No CAC required, all public domain, no FOUO).
<https://www.serdp-estcp.org/Tools-and-Training/Installation-Energy-and-Water/Cybersecurity>
- n. Department of Homeland Security Industrial Control Systems *Cyber Security Evaluation Tool (CSET)*
<https://www.us-cert.gov/forms/csetiso>
- o. Unified Facilities Criteria (UFC) 4-010-06 *Cybersecurity of Facility-Related Control Systems* Sep 2016
<https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc/ufc-4-010-06>
- p. UFGS 25 05 11 Unified Facilities Guide Specifications Cybersecurity for Facility-Related Control Systems 11/1/2017
<https://www.wbdg.org/ffc/dod/unified-facilities-guide-specifications-ufgs/ufgs-25-05-11>
- q. National Institute of Standards and Technology (NIST) Special Publication (SP) 800-30 Rev 1, "Guide for Conducting Risk Assessments," Sep 2012.
<https://csrc.nist.gov/publications/detail/sp/800-30/rev-1/final>
- r. National Institute of Standards and Technology (NIST) Special Publication (SP) 800-171 Rev. 1, "Protecting Controlled Unclassified Information in Nonfederal Information Systems and Organizations," June 2018.
<https://csrc.nist.gov/publications/detail/sp/800-171/rev-1/final>
- s. Defense Federal Acquisition Regulation Supplement (DFARS) 252.204-7012, Safeguarding Covered Defense Information and Cyber Incident Reporting, Oct 2016.

<https://www.acq.osd.mil/dpap/dars/dfars/html/current/252204.htm#252.204-7012>

Technology Test Bed Links

- t. DoD Environmental Security Technology Certification Program
<http://www.serdp-estcp.org/Program-Areas/Energy-and-Water>
- u. General Services Administration (GSA) Proving Ground
<https://www.gsa.gov/governmentwide-initiatives/sustainability/emerging-building-technologies/about-gsa%E2%80%99s-proving-ground-gpg>
- v. DOE Commercial Buildings Integration Funding Opportunity Announcement
<https://www.energy.gov/eere/buildings/buildings-funding-opportunities>
- w. Navy's Technology Validation (TechVal) Program
https://www.navfac.navy.mil/navfac_worldwide/specialty_centers/exwc/products_and_services/energy_and_public_works/UEM-PS.html
- x. National Renewable Energy Lab (NREL) Technology Performance Exchange (TPEX)
<https://www.tpex.org/>

Energy Resilience and Energy Security

- y. 10 USC § 101(e)(6). Definition of energy resilience.
The term “energy resilience” means the ability to avoid, prepare for, minimize, adapt to, and recover from anticipated and unanticipated energy disruptions in order to ensure energy availability and reliability sufficient to provide for mission assurance and readiness, including mission essential operations related to readiness, and to execute or rapidly reestablish mission essential requirements.
- z. 10 USC § 101(e)(7). Definition of energy security.
The term “energy security” means having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet mission essential requirements.
- aa. OASD Memo: *Energy Resilience Operations, Maintenance, and Testing Guidance*; March 2017.
[https://www.acq.osd.mil/eie/Downloads/IE/2%20-%20Energy%20Resilience%20-%20OM&T%20Guidance%20\(v17\)%20-%20PR%20Version%20-%20approved.pdf](https://www.acq.osd.mil/eie/Downloads/IE/2%20-%20Energy%20Resilience%20-%20OM&T%20Guidance%20(v17)%20-%20PR%20Version%20-%20approved.pdf)
- ab. Upcoming USD(A&S) Memo: *Metrics and Standards for Energy Resilience at Enduring Installations*

Energy Resilience Assessment Tool

- ac. Energy Resilience Assessment Tool website.
<https://osdera.ll.mit.edu/er>

Utilities Privatization

- ac. *Supplemental Guidance for the Utilities Privatization Program*, February 7, 2019.
https://www.acq.osd.mil/eie/IE/FEP_Utilities.html

Appendix III: ERCIP Portal

Portal Access

The Portal is found at the following link: <https://dais.osd.mil/DAIS/index.jsp>. The *ECIP Manual*, found within the Portal, provides information and instruction on how to navigate through the site, submit, update, and track projects.

Users are required to register to access and use the site:

- 1) User Requirement
 - a. Users must have a valid Certificate/Certificate Authority and Common Access Card.
 - b. Users must be on NIPR to access the site.
- 2) Registration Process
 - a. Click the link on the DAIS Home Page to begin registration for basic DAIS access.
 - b. Fill out the required (marked with an asterisk) fields on the registration form, and submit the request.
 - i. The sponsor must be a government employee who currently has DAIS access.
 - c. Wait for the sponsor in Step 2 to approve the DAIS access request.
 - i. On the home page, there should now be a message that states “Until your sponsor has approved your account, you will not be able to access DAIS or its communities.”
 - d. Once the sponsor approves the request, the user will receive an email notifying him/her of the approval, and the user can now request ERCIP community access. Return to the DAIS Home Page, and click “ERCIP” on the toolbar. Click the “Request Community Access” button at the bottom of the page.
 - e. Complete the access request, and select one of the additional permissions if the user must submit or approve project data. Basic community access only allows users to view project data that has already been approved.
 - i. Project Manager
 - ii. Service Representative – non-contractors only
 - iii. ERCIP Head
 - f. The user can access the ERCIP community once the administrator selected during registration approves the request.

Portal Project Records

It is critical that the Portal consistently and accurately reflects the current ERCIP portfolio. It is most useful for all users when the data is current, and analysis, inquiries, and reports can be completed without data calls. All projects’ Portal records shall be updated at the following milestones at a minimum:

- 1) **Project Creation**: All projects submitted for consideration for FY 2022/2023 ERCIP funds shall be uploaded as “proposed” projects in the Portal no later than the submission FY 2022 deadline of **APRIL 1, 2020** and submission FY 2023 deadline of **AUGUST 3,**

2020, along with appropriate supporting documentation: FY 2022/2023 ERCIP Project Submission Template, DD Form 1391, LCCA, Quad Chart, Energy Resilience Questions (Appendix IV, if applicable), and ERA tool input and results, if applicable. Projects not uploaded to the Portal by the deadlines will not be considered for the FY 2022/2023 program. DD Form 1391 must include a description of the expected M&V plan, estimated M&V cost, and appropriation that will be utilized to resource the M&V effort.

- a. Responsibility: Service Point of Contact (POC) or Project POC (Service POC and Project POC are role-based access types established within the Portal)*
- 2) **Project Creation:** For all other projects added to the program using available prior-year funds, project data including DD Form 1391 and LCCA shall be uploaded immediately upon approval of the project by ODASD(Energy).
 - a. Responsibility: Service POC or Project POC*
- 3) **Project Selected for Funding:** Upon notification of selection for ERCIP funding (i.e., included on the President’s Budget submission), project status shall be changed to “budgeted.” The ODASD(Energy) ERCIP manager will notify the DoD Components of projects selected to be “budgeted.”
 - a. Responsibility: ODASD(Energy) and Service POC or Project POC*
- 4) **Project Included in Annual Congressional Notification:** Upon receipt of appropriations for a particular program year, ODASD(Energy) submits a notification to Congress, which identifies projects that will be funded. Project status for projects identified on the notification shall be changed to “appropriated.” The ERCIP manager will notify the DoD Components of projects selected to be “appropriated.”
 - a. Responsibility: ODASD(Energy) and Service POC or Project POC*
- 5) **Project Awarded:** Upon contract award, the project status shall be changed to “awarded.” In addition, ensure project cost is updated with actual award amount and award date is populated. Project status change to “awarded” also requires an M&V plan be uploaded to the Portal. See Appendix II for M&V guidance.
 - a. Responsibility: Service POC or Project POC*
- 6) **Project Under Construction:** When construction begins, the project status shall be changed to “under construction.”
 - a. Responsibility: Service POC or Project POC*
- 7) **Construction Completed:** Upon commission and initiation of energy savings, project status shall be updated to “completed/operational.”
 - a. Responsibility: Service POC or Project POC*
- 8) **Project Cancelled:** Upon notifying ODASD(Energy) of a project cancellation at any stage of a project life, project status shall be updated to “cancelled.” A template for cancellation notification is included as Appendix V. For detailed instructions on the Project Cancellation process, see Section 10.3 – Project Changes and Cancellations.
 - a. Responsibility: Service POC or Project POC*
- 9) **Project Decommissioned:** When the project is taken out of operation because it has

served its useful life or for other valid reasons, the project status shall be updated to “decommissioned.”

a. Responsibility: Service POC or Project POC

- 10) **Project Change:** If, at any stage during the life of a project, there is any significant change in cost, scope, or any other aspect of the project (including M&V plan), notify ODASD(Energy) of the change using the Change Notification template in Appendix V. The template should be used for all change notifications going forward, including changes to projects authorized in prior fiscal years. If and when ODASD(Energy) approves changes to a project, upload the email approval of the change and the associated revised project documentation (DD 1391, LCCA, etc.) to the Portal project record. For detailed instructions on the Project Change process, see Section 10.3 – Project Changes and Cancellations.

a. Responsibility: Service POC or Project POC

- 11) **Actual Performance Data:** DoD Components shall provide actual performance data obtained through the identified project M&V plan of their completed projects on an annual basis within the ‘Performance Update’ tab of the Portal Menu. Updates shall reflect actual performance data for the previous year. Annual updates shall be made in the Portal no later than **October 31** each year during the entire life-cycle of the project. See Appendix II for M&V guidance.

a. Responsibility: Service POC or Project POC

- 12) **Annual Report to Congress:** In addition to the Portal records updates, the DoD Components shall supply project information to ODASD(Energy) by **October 31** each year to support the Annual Report to Congress, which is due no later than 90 days after the end of each fiscal year (beginning with FY 2018). ODASD(Energy) submits the Annual Report on the status of the authorized and active projects (including completed projects), which includes the following:

- a. The title, location, a brief description of the scope of work, the original project cost estimate, and the current working cost estimate.
- b. For energy conservation projects—
 - i. The original expected SIR and Simple Payback estimates and M&V cost estimate;
 - ii. The current expected SIR and Simple Payback estimates and M&V plan and costs; and
 - iii. A brief description of the M&V plan and planned funding source.
- c. For energy resilience/energy security projects, the rationale for how the project would enhance mission assurance, support mission critical functions, address known vulnerabilities, SIR, Simple Payback, and estimated/actual savings.

Responsibility: ODASD(Energy) with Service POC input and coordination

- 13) **Quarterly Reports:** Each quarter, DoD Components will validate a report generated from Portal data. ODASD(Energy) will prepare the report and send to DoD Components for validation. DoD Components will be required to:

- a. Verify that projects listed in the report reflect the current program;
- b. Verify that project data, including PA, SIR, Payback, bid savings, energy

cost savings, energy resilience metrics (critical load and availability data), energy resilience economic performance, and award data (if applicable) is accurate;

- c. Validate the balance of Construction and P&D funds for each year of active funding;
- d. Provide feedback on any discrepancies; and
- e. Update the Portal to correct any discrepancies.

Validation will occur each year on **January 31, April 30, July 31, and October 31.**

Responsibility: ODASD(Energy) with Service POC input and coordination

Appendix IV: Energy Resilience Project Questions

When proposing an energy resilience project, provide answers to the questions below as a supplement to the project's DD Form 1391 to support the energy resilience claim. Ensure answers are complete and thorough (i.e., yes/no answers are **not** sufficient).

Project Description

1. What are the components of the project (e.g., generation, infrastructure, equipment, and fuel) that are tied to the critical load and are needed to remediate disruption risk?

Critical Mission

- 2a. What is the critical mission(s) the project supports?
- 2b. What are the requirements of the critical mission(s) (e.g., downtime risk tolerance requirement used to help determine energy resilience metrics, such as availability, reliability, and quality thresholds)?
- 3a. What is the critical load (e.g., kW, MW, etc.) of the critical mission? For information on determining critical load, see the upcoming *Metrics and Standards for Energy Resilience at Enduring Installations* memo.
- 3b. What portion of the critical load is being affected by the project (if different from amount provided)?
- 4a. Does the project directly remediate disruption risks to critical mission operations on the base? This is determined by the current state of the availability/reliability of the current system and the improvement expected by the project to meet the critical mission requirements. If so, describe.
- 4b. Provide quantification of resilience metrics (e.g., technical metrics: availability, reliability, and quality).
- 5a. Is the base currently compliant with near-term energy resilience requirements to assure critical mission operation during disruptions (e.g., current level of reliability is aligned to what missions require, generator and other system OM&T, etc.)? If so, how?
- 5b. Does the base require additional energy resilience? If so, describe (reference IEP or analysis performed, if applicable).

Project Planning

- 6a. Has an analysis of alternatives been conducted? If so, describe.
- 6b. Have the cost and mission tradeoffs been assessed across the alternatives (inclusive of upgrades)? If so, describe.
7. How have the near-term execution impediments been remediated prior to project selection (e.g., infrastructure ownership, integration of power systems, land ownership, and host-tenant/installation-mission agreements)?

- 8a. Describe how the M&V plan will ensure performance.
- 8b. Describe how the M&V metrics will be included in contracting to ensure the performance of contractors/vendors and ensure that missions' requirements are met.

Stakeholder Support

- 9. Does the project have support and commitment from mission owners, operators, and other affected tenants (e.g., commitment documents, such as a letter of support from a commanding officer)?

- 10a. Have the appropriate mission owners and other stakeholders coordinated on the project selection (e.g., installation support, financial support)? If so, describe.
- 10b. Is there commitment to sustain the project over its life?
- 10c. Have each stakeholders' budgets been reviewed to identify "fair share" contributions to implement/execute the project?

Appendix V: Changes Notification Sample/Template

[Date]

[Fiscal Year, Project Number and Title, Location] Change/Cancellation Notification

BLUF: A short description of the reason for the change or cancellation, the cost impacts, the SIR/Payback impact, and recommended action.

DETAILS:

- d. Scope
 - a. Original Scope: A description of the original approved scope.
 - b. Revised Scope: A description of the proposed scope. (If cancellation, N/A)

(Complete tables and bullets below; for cancellation, new values are NA)

Program Amount		SIR		Payback		Energy/Water Savings	
Original	New	Original	New	Original	New	Original	New

Funds being moved to/from:

Amount	To (FY/Project #)	From (FY/Project #)

Funds remaining for future use:

Amount	Planned Use

- e. Reason for Change/Cancellation: A description of the circumstances that necessitate the proposed change.
- f. Financial Impacts: Any financial impacts beyond the information in the tables above.
- g. Other Details: A discussion of any other pertinent details or alternative solutions considered.

RECOMMENDATION: Recommended action for which you are seeking ODASD(Energy) approval
 Attachments: *(Include all appropriate attachments)*

1. Original DD Form 1391
2. Revised DD Form 1391
3. Original LCCA
4. Revised LCCA
5. Original M&V Plan
6. Revised M&V Plan
7. Any other pertinent documents

Appendix VI: Estimated Useful Life of Energy Efficiency, Renewable Energy, and Water Conservation Technologies

Project Category	Technology	Economic Life	Description
Energy Efficiency (EE)	EMCS or HVAC Controls	15 years	Projects that centrally control energy systems with the ability to adjust temperature, shed electrical loads, control motor speeds, or adjust lighting intensities.
EE	Steam and Condensate Systems	20 years	Projects to install condensate lines, cross-connect lines, distribution system loops, repair or install insulation, and repair or install steam flow meters and controls.
EE	Boiler Plant Modifications	20 years	Projects that upgrade or replace central boilers or ancillary equipment to improve overall plant efficiency, this includes fuel switching or dual fuel conversions.
EE	Heating, Ventilation, Air Conditioning	20 years	Projects to install more efficient heating, cooling, ventilation, or domestic hot water heating equipment, this includes the HVAC distribution system (ducts, pipes, etc.).
EE	Weatherization	15 years	Projects that improve the thermal envelope of a building, this includes building insulation (wall, roof, foundation, doors), windows, vestibules, earth berms, shading, etc.
EE	Lighting Systems	15 years	Projects to install replacement lighting systems and controls, this would include new fixtures, lamps, ballasts, photocells, motion sensors, light wells, highly-reflective painting, etc.
EE	Energy Recovery Systems	20 years	Projects to install heat exchangers, energy wheels, heat reclaim units, or other systems to recapture energy lost to the environment.
EE	Electrical Energy Systems	25 years	Projects that increase the energy efficiency of an electrical device or system or reduce the cost by reducing peak demand.
EE	Daylighting	25 years	Projects that optimize natural light for internal lighting.
Water Conservation (WC)	Potable Water Conservation	20 years	Projects that involve devices or processes to reduce potable water loss, waste, or use. Most of these are in the ground, but liners will be less in ponds, but under normal maintenance.
WC	Non-Potable Water Conservation	25 years	Projects that involve the re-use, recycling, and eventual reduction of non-potable water such as waste water and irrigation run-off. Most of these are in the ground, but pumps etc. are under normal maintenance.
Renewable Energy (RE)	Geothermal	40 years	Projects that generate electrical power or process thermal energy using a high-temperature geothermal source.
RE	Ground Source Heat Pump	40 years	Projects to install a central heating and/or cooling system to store and retrieve heat from the ground: 40 years for in-ground systems, 15 years for control systems.
RE	Hydroelectric	30 years	Projects to generate electrical power using water as the potential energy source.
RE	Solar Power	25 years	Projects to generate electrical power with a heat engine using solar energy as the source (solar Stirling engines, heliostats, etc.).
RE	Solar Photovoltaic	25 years	Projects to install solar photovoltaic panels to generate electrical power.
RE	Solar Thermal	25 years	Projects to generate thermal energy using solar energy as the source.
RE	Waste to Energy	30 years	Projects to generate electrical power using waste products as the energy source.
RE	Waste to Fuel	30 years	Projects to generate fuel products from waste products.
RE	Wind	25 years	Projects to generate electrical power using wind energy as the source.
RE	Ocean Thermal Energy Conversion (OTEC) – Ocean	25 years	Projects to generate electrical power using deep ocean thermal gradients as the source.
RE	Biofuels	25 years	Projects to develop liquid fuel sources (biodiesel, ethanol, etc.) from biomass feedstocks.
RE	Biogas	25 years	Projects to develop gas fuel sources from the breakdown of organic matter.
RE	Hydrokinetic	25 years	Projects to generate electrical power using the energy available in waves or water currents.

Appendix VII: Conversion Factors for Calculations of Energy Savings

Commodity	Conversion
Purchased electricity	3,412 BTU per kWh
Purchased steam	1,000 BTU per lb
Distillate fuel oil	138,700 BTU per gal
Natural gas	1,031 BTU per ft ³
LPG, propane, butane	91,960 BTU per gal
Butane	102,032 BTU per gal
Bituminous coal	24,000,000 BTU per short ton
Anthracite coal	25,000,000 BTU per short ton
Residual fuel oil #1	135,425 BTU per gal
Residual fuel oil #2	138,000 BTU per gal