ENERGY CONSERVATION INVESTMENT PROGRAM ANNUAL GUIDANCE

OCTOBER 2012

Headquarters, Department of the Army
Assistant Chief of Staff for Installation Management

ENERGY CONSERVATION INVESTMENT PROGRAM ANNUAL GUIDANCE

Fort Hunter Liggett, California – 1 MW Solar Photovoltaic

This guidance, which supplements the OSD ECIP Program Guidance, is provided to help users better understand the OSD ECIP Program and to create and accomplish accurate, well-justified Army ECIP projects. A successful ECIP program will help the Army ensure energy security and independence and will pave the way toward larger energy projects.

This year's annual guidance supports the FY14 ECIP and FY15-18 ECIP Future Years Defense Program (FYDP)

October 2012

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Executive Summary

(UNCLASSIFIED)

(U) ECIP ANNUAL GUIDANCE (U) (DAIM-ODF) ECIP annual guidance for FY14 and FYDP (FY15-18) submission of projects is contained herein. The guidance incorporates recent OSD ECIP Guidance and provides information required to prepare ECIP projects that will compete successfully for OSD ECIP funding. The FY14 ECIP Program is included in the current FYDP and will be submitted to OSD by 20 December 2012. Requests to add, delete, or modify previously submitted and accepted projects for FY 14 shall be submitted through Headquarters and reach OACSIM NLT **4 December 2012**. Projects for the FYDP, FY15-18, shall be submitted through Headquarters and reach OACSIM NLT **31 January 2013**. ECIP Projects are executable under a Continuing Resolution.

During the past year, several major events occurred which have greatly transformed the ECIP Program and the Army's roles and responsibilities to the Program.

1. In June 2012, the OACSIM-ECIP Program Manager, Mr. Ron Diehl, passed away. We dedicate this year's annual guidance to his vision of "Every Project, Every Time, Done Right".
2. The OACSIM welcomed Tom Delaney onboard 27 Aug 12, as the new ECIP Program Manager.
3. On September 27, 2012, OSD released revised ECIP Guidance, included in next section, which included templates for narrative submission templates that should be addressed with each ECIP project.
4. The submission to the FY18 program last year resulted in only a few projects which followed the ECIP guidance. These projects were advanced into the earlier FY and some funded in the FY13 program! Therefore, read and understand the guidance.

OACSIM has enlisted the assistance of the USACE Huntsville Center (HNC) and Idaho National Labs (INL) to provide superior technical assistance to the ECIP Program to ensure highly effective project programming and execution. These resources will be used to develop specific FYDP programs for NZEI installations and are also available to installations to generate great ECIP projects. The ECIP supports the goals of DoD I 4170.11, "*Installation Energy Management".*

OSD Memorandum

THE UNDER SECRETARY OF DEFENSE
3010 DEFENSE PENTAGON
WASHINGTON, DC 20301-3010

ACQUISITION, TECHNOLOGY AND LOGISTICS

SEP 2 7 2012

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

SUBJECT: Submissions of Projects for the FY 2014 Energy Conservation and Investment Program and Plans for the Remainder of the Future Years Defense Program

This memorandum is a data call for Components to submit their ECIP projects planned for FY2014 and for the remainder of the Future Years Defense Program (FY2015 to FY2018).

Introduction

ECIP is a critical element of the Department of Defense's strategy to improve the energy performance of its fixed installations. As a Military Construction (MilCon) program, ECIP has traditionally funded small projects that promise a significant payback in reduced energy costs. Although ECIP has enjoyed strong support from Congress and the Office of Management and Budget, it is, and will remain, a relatively small program. We are planning $150M annually for FY2014 to FY2018. At this funding level, the program will provide less than 10% of the Department's investment needs to meet the energy goals. The Services will continue to budget for the majority of investments needed to reach the energy goals and manage larger programs aimed at reducing energy demand, expanding renewable energy supply, and integrating energy security considerations into investment decisions.

Strategic Vision for the Program

Game changing role for ECIP

In agreement with the Department's facility energy strategy, ECIP will fund more holistic projects, leveraging the Services' larger investments that will produce "game-changing" improvements in energy consumption, cost, management and security. The following six overarching Program objectives guide this concept:

1. Dramatically change the energy consumption at an individual installation or joint base;
2. Implement a technology validated in a demonstration program such as the Environmental Security Technology Certification Program (ESTCP) or an innovative technology that represents significant improvement over existing technology. (The list of technologies currently being demonstrated in the ESTCP program is located here: http://www.serdp.org/Program-Areas/Energy-and-Water/(list)/1/(view_all)/1/);

3. Integrate multiple energy savings, monitoring, and renewable energy technologies to realize synergistic benefits;
4. Integrate distributed generation or energy storage in a way which improves supply resilience for critical loads;
5. Implement an energy security plan at a given installation especially when such an investment entails partnering with the Department of Energy (DoE); and,
6. Maximize contribution towards a Service's or installation's energy intensity, renewable energy and water consumption reduction goals put forth in the Department's Strategic Sustainability Performance Plan or a Service or Installation strategic energy plan.

In keeping with the competitive selection process established for the FY 2013 ECIP program, in FY2014 and beyond the program will eliminate service guaranteed minimum allocations. OSD will use project prioritization metrics and criteria to rank, compare and select projects for funding. The selection criteria are shown in Attachment A, Table 2.

Data Call and Responsibilities
Please provide your proposed FY2014 projects in the "FY14 ECIP Project Submission Template" (Attachment B). In general, your submissions should focus on proposing projects that would not be candidates for third party financing or Operations and Maintenance (O&M) funds. Please return Attachment B with proposed FY2014 projects by **20 December 2012**.

To support advanced project and program planning, submit proposed projects across the remainder of the five-year planning period (FY2015 – FY2018) using the "FY15-18 ECIP Project Submission Template" (Attachment C). In addition to aligning ECIP with the rest of your MilCon planning process, this will enable you to communicate funding plans for phased ECIP projects. Please return Attachment C with proposed FY2015 – FY2018 ECIP projects (in descending order of priority) by **31 March 2013**.

Please direct all submissions and questions to CDR Matt McCann at matthew.mccann@osd.mil. Thank you for your continued support of this critical program.

J R Sikes

Joseph Sikes
Director, Facilities Energy
and Privatization

Attachment:
As stated

Attachment A

ECIP GUIDANCE

Definition

ECIP is a subset of the Defense-Wide Military Construction Program (MilCon), specifically designed to fund projects that save energy, reduce DoD's energy costs, or improve energy security or energy reliability. The Program supports construction of new, high-efficiency energy systems and the improvement and modernization of existing ones.

Funding Allocation

Consistent with the strategic vision for the Program, ECIP funding will be allocated in FY2014 using a methodology that:

a) Allows projects to compete within a category based on several criteria; and sets aside specific target shares of capital across four categories of projects: Renewable Energy, Energy Conservation, Water Conservation and Energy Security.

Table 1 below illustrates the target funding allocation by project category, assuming $150M FY2014 ECIP Appropriation. This target allocation may be adjusted based on the quality of projects submitted in each category.

	Renewable Energy	Energy Conservation	Water Conservation	Energy Security
Percent Allocation	25%	60%	5%	10%
Funding Allocation	$37.5M	$90M	$7.5M	$15M

Table 1 - Target ECIP Funding Allocation by Category

Prioritization Criteria and Process

ODUSD (I&E) FE&P will evaluate and prioritize projects within each of the four categories using several quantifiable metrics and related criteria. Each project will be given an overall score then ranked against all other projects within a category. Table 3 below identifies selection criteria and associated weights.

Table 2 – Project prioritization metrics and criteria

	Metric	Energy Efficiency		Renewable Energy		Water Conservation		Energy Security	
		Weight	Units	Weight	Units	Weight	Units	Weight	Units
Financial	SIR	10%	$/$	10%	$/$	10%	$/$		
	Payback	10%	Years	10%	Years	10%	Years		
Energy Savings	Benefit-to-Investment	20%	MMBTU/$	20%	MMBTU/$	20%	MMBTU/$		
Goals	To what degree does the Energy/Water Savings or Renewable Energy Production compare to the installation's annual goal?	10%	MMBTU (Project) / MMBTU (Target)	10%	MMBTU (Project) / MMBTU (Target)	10%	MGAL (Project) / MGAL (Target)		
Energy Security	How does the project support critical load security or reliability							25%	Narrative
Synergistic Effect	1. Does the project integrate multiple technologies? (Yes/No) 1.1 If Yes, explain how the project realizes synergistic benefits. 2. Is the project part of a multi-year/multi-phase project? (Yes/No) 2.2 If yes, explain how it is consistent with the installations's strategic or energy plan?	10%	Narrative	10%	Narrative	10%	Narrative	15%	Narrative
Partnership	1. Does the project provide partnership opportunities with DoE or other Federal agencies? (Yes, No) 1.1 If yes, provides an explanation.	10%	Narrative	10%	Narrative	10%	Narrative	15%	Narrative
Test Bed Application/ Innovative Technology	1. Does the project implement a demonstrated test bed technology or innovative technology not deomstrated by a test bed program? (Yes, No) 1.1 Describe the technology, the test bed program (if applicable) and the potential impact on energy management, consumption or production.	10%	Narrative	10%	Narrative	10%	Narrative	20%	Narrative
Service Priority	Where does this project fall on the Service/Component prioritized list of all submitted projects?	20%	Project rank (1-n)	20%	Project rank (1-n)	20%	Project rank (1-n)	25%	Project rank (1-n)
		100%		100%		100%		100%	

Responsibilities and Program Administration
The Office of the Deputy Under Secretary of Defense (Installations & Environment) Facilities Energy and Privatization Directorate (ODUSD (I&E) FE&P), centrally manages the Program, and is responsible for keeping Congress informed of Program execution and results. In turn, the Defense Components are responsible to identify and execute ECIP projects, and provide consistent and regular updates on the progress of their Program's implementation.

As such, each Defense Component shall:

a) Execute those projects forwarded to Congress within funds allocated by the Under Secretary of Defense (Comptroller),
b) Maintain current, auditable documentation and report consistently on the execution of each approved ECIP project, and
c) Identify a representative to serve as point of contact for matters related to programmatic decisions, administration and communication with ODUSD (I&E) FE&P.

In an effort to streamline the management and administration of the Program and facilitate the proposal, approval, tracking and monitoring processes of ECIP projects, ODUSD (I&E) FE&P, implemented a centralized web-based reporting portal which supports all ECIP project submissions and subsequent updates. The ECIP portal enables the Defense Components and the ODUSD (I&E) to track the status and actual performance of ECIP projects, and thus, offer better insight into the overall Program's effectiveness. Refer to Appendix I for detailed instructions on how to register for and use the ECIP Portal.

Defense Components shall provide update on the progress of their respective projects on a quarterly basis **for all projects appropriated since FY2009**. Updates shall reflect current status or actual performance data (savings or production) as of the prior quarter. Quarterly updates shall be made directly on the Portal no later than January 31, April 30, July 31 and October 31 of each year.

Economic Analysis
The program requires Life-Cycle Cost analysis to assess the long-term cost-effectiveness of proposed projects. This method applies to any capital investment decision in which the benefit of future cost reductions offsets the high initial costs. Life-Cycle Cost analysis considers all costs associated with an alternative over its entire useful life. It also considers the cost arising from constructing or procuring, operating, maintaining and ultimately disposing of a project.

All projects submitted as part of the initial budget submission or as part of a reprogramming require Life-Cycle Costs analysis. Notify the ODUSD (I&E) if a project cost estimate changes by more than 25 percent or the scope is reduced by 25 percent to allow award within the original estimate. Provided no objection exists, contracts or contract modifications may be awarded 21 days after submission. However, contract modifications may be awarded sooner with concurrence from ODUSD (I&E).
In general, Components are responsible for ensuring their program amount does not exceed a given year's allotment. In other words, project cost escalation must be accompanied by reduction

to or elimination of other projects to make room for desired program changes. Full description of program changes should be included in a notification to ODUSD (I&E).

Components shall base the Savings-to-Investment ratio and the Life-Cycle Cost analysis on the recommended useful life of a retrofit or the remaining life of the basic facility being retrofitted, whichever is less. In addition, Components shall use the actual cost of energy purchased for use at the facility, rather than stock fund prices, as the basis for energy cost analysis, as stock fund prices are often out-of-date and may include storage and other overhead costs.

The National Institute of Standards and Technology (NIST) publishes numerous documents to assist in the development of economic analysis of candidate ECIP projects. Appendix II provides a list of such references published by NIST and other authorities.

Appendix I
ECIP Portal

The ECIP Portal is found at the following link: https://rpuir.scott.af.mil/ECIP/index.jsp.
The ECIP Portal Manual provides information and instruction on how to navigate through the site, submit, update and track projects in the Portal.

Users are required to register first in order to access and use the site:

a) Minimum System Requirements Browser.
   You must have one of the following:
   i) Internet Explorer 7+ web browser with CSS and JavaScript support enabled
   ii) Firefox 3.6.x with CSS and JavaScript support enabled

b) User Requirements
   i) Users must have a valid Certificate/Certificate Authority and Common Access Card
   ii) Foreign nationals must have approval from the Designated Approving Authority (DAA). Contact the ECIP help desk at RPUIR@osd.mil to complete the registration process.
   iii) Any users who will need to access ECIP from outside of a ".mil" environment (e.g., ".edu," ".com") must complete a DD Form 2875 System Authorization Access Request. To access the form, see: http://www.dtic.mil/whs/directives/infomgt/forms/forminfo/forminfopage3211.html

c) Registration Process
   i) Send a signed and encrypted email to the ECIP Helpdesk at AMC.A6II.rpuir@scott.af.mil containing:
      a) Completed DD Form 2875 (if applicable)
      b) DAA approval (if applicable)
      c) Internet Protocol (IP) address
         1) Users within a .mil environment can obtain their IP address by clicking on https://gdss2support.scott.af.mil/index.jsp?c1=555.
         2) Users within a ".com" or ".edu" environment can obtain their IP address by clicking on http://www.whatismyip.com.
         3) For users with non-fixed IP addresses, it may be necessary to request firewall rule changes to account for IP and web proxy changes from their locations. A user may be unable to access the ECIP in the event they are assigned a new IP address.

   i. Click on https://rpuir.scott.af.mil/ECIP/index.jsp and complete the registration form. Each user must select an account type:
      a) Standard – Allows users to access project information and reports.
      b) Project Manager – Allows users to enter and update ECIP projects.

d) Applicants must also select a sponsor from the drop-down list to approve their registration. After the receiving the registration request, the system will notify the sponsor via e-mail. After the request is approved or rejected, the system will similarly notify the user.

Appendix II
References

Technical Assistance for Life- Cycle Cost Analysis

a. *Life-Cycle Costing Manual for the Federal Energy Management Program*, NIST Handbook 135 (current version 1987).

   PDF copies are available at the Federal Energy Management Program website at: http://www1.eere.energy.gov/femp/program/lifecycle.html. Free copies of the manual can also be ordered by calling the Energy Efficiency and Renewable Energy (EERE) Information Center at 1-877-337-3463.

b. *Present Worth Factors for Life-Cycle Cost Studies in the Department of Defense*, NISTIR 4942 (Current version 1996).

   A PDF copy is available at http://fire.nist.gov/bfrlpubs/build96/art077.html.

c. *Energy Price Indices and Discount Factors for LCC Analysis*, NISTIR 85-3273-25.

   This document provides current discount factors for life-cycle cost analysis. This information can be obtained at:
   http://www1.eere.energy.gov/femp/information/download_blcc.html

d. *NIST "Building Life- Cycle Cost" BLCC Computer Program*

   The software is available at the EERE_FEMP website under Information Resources, at:
   http://www1.eere.energy.gov/femp/information/download_blcc.html

e. *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 and presents a discounting approach that is different, yet consistent with the LCC rule promulgated in 10 CFR 436. A PDF copy of the memo is available at the National Institute of Building Sciences – Whole Building Design Guide at: http://www.wbdg.org/pdfs/moa.pdf

f. *The Life-Cycle Cost in Design (LCCID) program.*

   LCCID program and application assistance is available from the Building Loads Analysis System Thermodynamics (BLAST) Support Office, Army Construction Engineering Research Laboratory, Champaign, IL, by calling 217-333-3977 or emailing support@blast.bso.uiuc.edu.

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 ft3
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

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

	Project Category	Technology Type	Description
1	Energy Efficiency	ECMS or HVAC Controls (10 years)	Projects which centrally control energy systems with the ability to automatically adjust temperature, shed electrical loads, control motor speeds or adjust lighting intensities.
2	Energy Efficiency	Steam and Condensate Systems (15 years)	Projects to install condensate lines, cross connect lines, distribution system loops, repair or install insulation and repair or install stream flow meters and controls.
3	Energy Efficiency	Boiler Plant Modifications (20 years)	Projects to upgrade or replace central boilers or ancillary equipment to improve overall plant efficiency. This includes fuel switching or dual fuel conversions.
4	Energy Efficiency	Heating, Ventilation, Air Conditioning (20 years)	Projects to install more energy efficient heating, cooling, ventilation or hot water heating equipment. This includes the HVAC distribution system (ducts, pipes, etc).
5	Energy Efficiency	Weatherization (20 years)	Projects improving the thermal envelope of a building. This includes building insulation (wall, roof, foundation, doors), windows, vestibules, earth berms, shading, etc).
6	Energy Efficiency	Lighting Systems (15 years)	Projects to install replacement lighting systems and controls. This would include day lighting, new fixtures, lamps, ballasts, photocells, motion sensors, IR sensors, light wells, highly reflective painting, etc.
7	Energy Efficiency	Energy Recovery Systems (20 years)	Projects to install heat exchangers, regenerators, heat reclaim units or recapture energy lost to the environment.
8	Energy Efficiency	Electrical Energy Systems (20 years)	Projects that will increase the energy efficiency of an electrical device or system or reduce cost by reducing peak demand.
9	Energy Efficiency	Facility Energy Improvements (20 years)	Multiple category projects for any type of energy conservation or those that do not fall into any other category.
10	Energy Efficiency	Day lighting	Projects that involve optimizing natural light for internal lighting.
11	Water Conservation	Water Conservation, Potable	Projects that involve a measure, device, technology, improved design, process or other, implemented to reduce potable water loss, waste or use.
12	Water Conservation	Water Conservation, Non-Potable	Projects that involve the reuse, recycling and eventual reduction of non- potable water such as waste water, and irrigation run-off.
13	Renewable Energy	Geothermal	Projects to develop a geothermal plant for the purposes of generating electricity of heat.
14	Renewable Energy	Ground Source Heat Pump	Projects involving the installation of a central cooling and or heating system pumping heat to and or from the ground.
15	Renewable Energy	Hydro Electric	Projects that would develop a hydro electric generation station/plant.
16	Renewable Energy	Solar	Projects that install solar systems that do not fall in the specific category of photovoltaic or thermal, such as solar Stirling engines.
17	Renewable Energy	Solar Photovoltaic	Projects to install photovoltaic solar panels to generate electricity or heating.
18	Renewable Energy	Solar Thermal	Projects to install solar thermal collectors to harness thermal energy (heat).
19	Renewable Energy	Waste to Energy	Projects to implement technologies and processes to take in waste products and generate energy.
20	Renewable Energy	Waste to Fuel	Projects to implement technologies and processes to take in waste products and generate fuel products only.
21	Renewable Energy	Wind	Projects to install wind turbines and related systems to generate electricity.
22	Renewable Energy	OTEC – Ocean	Projects to develop or harness energy to install Ocean Thermal Energy Conversion technologies or systems.
23	Renewable Energy	Biofuels	Projects to develop and install technologies that would generate liquid fuels from biomass feedstock such as biodiesel, ethanol or other.
24	Renewable Energy	Biogas	Projects to develop and install technologies and processes to generate gas through the biological breakdown of organic matter.
25	Renewable Energy	Hydro Kinetic	Projects to develop or install energy conversion devices to generate energy from waves or currents.

SAMPLE FORMAT – LIFE CYCLE COST ANALYSIS FOR ECIP PROJECTS

1992 38806 S REVISION DATE: 07 NOV 1991
MCA (AS OF 11/22/1991 AT 07:41:48) 09 AUG 1991
LAF=1.08

DATE 09 AUG 1991 FY 92 PROGRAM
PROJECT NUMBER: 38806
PROJECT TITLE: ECIP: Insulate Steam Lines
INSTALLATION: Charles Melvin Price Spt Ctr
LOCATION: Illinois

SECTION 11 – ECONOMIC ANALYSIS

11C CONSIDERATION OF ALTERNATIVES

Maintain Status Quo
Insulate Steam Distribute System

11K ECONOMIC JUSTIFICATION SUMMARY

Life Cycle Cost Analysis Data Base

1. Investment costs were calculated using R.S. Means estimating publications. Total investment costs, including contingency and SIOH = $224,890
2. Energy savings were calculated using various energy conservation publications.
   a. Documents included:
      1) Architects & Engineers Guide t Energy Conservation in Existing Buildings, DOE, 1979.
      2) ASHRAE Fundamentals, 1985.
      3) The 1975 Energy Management Guidebook, published by editors of Power Magazine, McGraw Hill Inc., NY, NY, 1973.
   b. Distillate fuel oil will not be affected by the project. Initial firing of the boilers uses #2 fuel oil. Firing up procedures at the beginning of the heating season will not change. Distillate fuel oil savings = 0
   c. Residual fuel oil (#6 fuel oil) is the primary fuel used in the central heating plan steam distribution system.
      1) Data base:
         a) Boiler data – temperature at 100psi 338F
         b) Assume average steam/condensate temperature in the line – 240 to 250 F
         c) To be conservative, assume some of the lost heat from the pipes will find its way to the ground level, due to both the large amount of heat lost and the circulation built up by both the temperature gradient and the unit heater blowers. Assume 25 percent of the lost heat is returned to the floor level.
      2) Current situation --- No insulation on steam or condensate lines in warehouse 2. No insulation on the condensate lines in warehouse 3. The steam lines in warehouse 3 do have insulation installed.
         a) Heat loss calculations:

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Q(bare) = HL* T*L
Where Q(Bare) = bare pipe seasonal heat loss
HL = Unit heat loss
T = 7-month heating season = 5040 hours
L = unit length of pipe

b) Heat loss

Pipe Size	BTUH/10'	10' Lengths (L)	Q(MBTU/season)
½ in	1125	226.8	1,285,956
¾ in	1250	154.0	1,047,816
1 ½ in	2300	226.8	2,629,066
2 ½ in	3250	913.7	14,966,406
4 in	5160	446.4	11,609,257
6 in	7260	12.0	445,133

Total Q(bare) = HL*T*L =			31,983,634

3) Proposed Situation: Install 2 inches of insulation on all bare steam and condensate lines in warehouse 2 and 3.

a) Health loss calculations:

Pipe Size	BTUH/LF	Length (LF)	Q(MBTU/season)
½ in	12	2268	137,169
¾ in	13	1540	100,901
1 ½ in	20	2268	228,614
2 ½ in	26	9137	1,197,312
4 in	55	4464	1,237,421
6 in	72	120	42,360

Total Q(insulated) = HL*T*L =			2,946,777

4) Residual fuel savings = Q(bare) – Q(insulated)

Q(lost) = 31,983,634 MBTU/yr – 2,946,777 MBTU/yr
= 29,036,857 MBTU/year

Not all heat lost from the pipes will be lost to the facility. Even though the warehouses have high bays, we can assume 25 percent of the heat is recycled through the buildings.

Therefore Q(lost) = 29,037 MBTU/year* .75 = 21,777 MBTU/yr

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Considering boiler efficiency of 78%, this equates to a residual fuel input equal to 21.777 MBTU/yr/.78 = 27.919 MTBU/yr

11E ECONOMIC ANALYSIS

LIFE CYCLE COST ANALYSIS SUMMARY
ENERGY CONSERVATION INVESTMENT PROGRAM (ECIP)
(In Constant FY91 Dollars)

LOCATION: Price Spt Center REGION NO: 2 PROJECT NUMBER: 38806
PROJECT TITLE: ECIP: Insulate Steam Lines FY92
DISCRETE PORTION NAME: Insulate Warehouse Steam Distribution Lines
ANALYSIS DATE: Aug 91 ECONOMIC LIFE: 25 PREPARED BY: J. Hooten

1. INVESTMENT
   A. CONSTRUCTION COST $ 200,800
   B. SIOH $ 12,048
   C. DESIGN COST $ 12,048
   D. SALVAGE VALUE -$
   E. TOTAL INVESTMENT (1A+1B+1C+1D) ------>$224,896
2. ENERGY SAVINGS (+) / COST (-)
   ANALYSIS DATE ANNUAL SAVINGS, UNIT COST & DISCOUNTED SAVINGS

DISCOUNTED FUEL	COST $/MBTU/YR(1)	SAVINGS MBTU/YR(2)	ANNUAL $ SAVINGS(3)	DISCOUNT FACTOR(4)	SAVINGS(5)
A. ELEC	$16.29	11	185	15.05	2,785
B. DIST	0	0	0	0.00	0
C. RESID	$6.61	27,919	184,545	28.23	5,209,694
D. NG	0	0	0	0.00	0
E. COAL	0	0	0	0.00	0
F. TOTAL		$27,930	184,730		5,212,479

3. NONENERGY SAVINGS (+) / COST (-)
   A. ANNUAL RECURRING (+/-) 0
      1) DISCOUNT FACTOR (TABLE A)
      2) DISCOUNTED SAVING/COST (3A X 3A1)
   B. NONRECURRING SAVINGS (+) / COST (-) 0

Breaking News

1. NEW THIS YEAR: With the FY14 submission, OSD has now eliminated guaranteed service minima (block funds) set aside for the various services to increase competition. Any cancelled Army ECIP projects may result in forfeiting funds. As part of the OSD increased competition for funds, narratives are required for each project. For additions, deletions, and changes to the projects in FY14 and FYDP, the documentation must follow the ECIP checklist. Incomplete DD Form 1391s will be returned. Errors, which would result in immediate return include, but not limited to, lump sum costs, vague scope of work, no measurement and verification, incomplete NEPA, OSD narratives and Commander's actual signature not uploaded into the Attachments Tab of the project DD Form 1391. In addition, projects should be submitted correctly in PAX.

2. ECIP DEFINITION: The Energy Conservation Investment Program (ECIP) is part of the OSD Military Construction (MILCON) program. To qualify, projects must be greater than $750K. However, projects less than $2M are not line item approved and must accomplish energy reduction in Army facilities and / or provide renewable energy to reduce dependence on fossil fuels and commercial sources. ECIP funds cannot be used for repair, maintenance, or environmental remediation work.

3. PROGRAM SCOPE: The Department of Defense (DoD) FY14-18 ECIP funding level, excluding design, is projected to be $150 million annually. Strategic vision for the ECIP program, Game changing role for ECIP, is addressed in the OSD memorandum, as well as, the project prioritization metrics and criteria.

4. GENERAL INFORMATION:

a. Congress appropriates ECIP funding to OSD for projects that promote renewable energy technologies and reduce energy intensity and costs in facilities owned by the Services. DoD manages the overall program and funds are allocated to the services based on a competition using metrics and criteria published in the OSD ECIP Guidance (Table 2, page 4 of the OSD Memorandum). Further information about the program can be found at (http://www.acq.osd.mil/ie/energy/ecip/ecip.shtml).

b. The Army is committed to use approx 60% of its annual ECIP budget for energy efficiency projects. ECIP projects over $2M are now line-item approved by Congress. Narratives are now required to justify project goals of the Army Energy Security Implementation Strategy, the Energy Policy Act of 2005 (EPAct 2005), Executive Order 13423 "Strengthening Federal Environmental, Energy and Transportation Management", and the Energy Independence and Security Act of 2007 (EISA2007). Narratives will be used by Army and OSD to rank projects for final submission. Additional assistance with ECIP projects can be found on the Army Energy website http://army-energy.hqda.pentagon.mil/.

c. ECIP projects are prioritized based on the OSD MEMORANDUM. The projects will be ranked based on Energy Efficiency (60%), Renewable (25%), Energy Security

(10%) and Water Conservation (5%) categories. The Army encourages installations to create more microgrid projects for energy security. OACSIM requests all Components submit at least one, if not two projects, for this technology and add projects for each year, FYDP 15-18, submission.

d. A life cycle cost analysis (LCCA) for the overall project and each discrete section (i.e., high efficiency motors, insulation, economizer, etc.) shall be performed and shall be included with the DD1391 project documents submitted for consideration.

e. Generally, projects and discrete portions of projects must have a SIR ≥ **1.25**. Renewable and water conservation energy projects may have a SIR ≥ **1.0** but the overall program average SIR should be greater than 2.0. For energy security projects a SIR is not required. The LCCA calculations are based on the recommended economic life (see OSD Guidance). It's important the LCCA costs or MMBTU entered, such as, O&M costs/savings, rebates, salvage value, and annual recurring costs/savings and non-recurring costs/savings be documented and uploaded into the Attachments Tab of the DD Form 1391.

f. The method of M&V (measurement and verification) savings **must** be included in the DD Form 1391, Tab D. Metering equipment installation is the responsibility of the project contractor while measurement and verification is the responsibility of the installation. All projects will be metered locally and a SCADA system included as required (in construction) to provide daily analysis of energy production. Failure to complete the M&V portion of the DD1391, Tab D, will result in return of the project to the installation. All new meters must be integrated with the Army Metering Program.

g. Contingencies are 5% for normal projects and 10% for difficult-to-access projects (provide justification). SIOH is 5.7% for CONUS projects and 6.5% for OCONUS projects. Any changes to these set percentages will be approved by OACSIM provided valid justification is received.

h. Non-appropriated Funded Facilities will not be included in an ECIP project without a statement certifying that utility costs are paid by Army appropriated funds.

i. In accordance with 32 CFR 651, no construction activities shall begin until the proper NEPA documentation, Tab J, has been completed to include, but not limited to, a Record of Environmental Consideration which may lead to either a Categorical Exclusion, Environmental Assessment, and/or an Environmental Impact Statement. A written description shall be provided to summarize the anticipated actions and schedule to meet the NEPA requirements.

j. Components must provide prioritized projects with all narrative questions complete and accurate for each project submitted on the Army Submission Template.

k. Test bed projects or innovative projects are projects in which the energy savings technology has been proven via the Environmental Security Technology Certification Program (ESTCP), other organizational labs, and/or has been constructed with measurement and verification validated to achieve energy savings.

Management Responsibilities

Over 100 projects, $160M, were submitted for the FY18 program. An administrative review of the PAX DD Form 1391, Special Reports, Critical Items Data Sheet, found errors in majority of the project submissions. By reviewing the print directory, it was evident not one project was submitted in PAX correctly to ECIP level. This short administrative review found that not one project met the full ECIP guidance.

a. Installation: Energy Manager is responsible to know their installation energy goals, requirements, and systems. ECIP projects should include a holistic approach for project development of a DD Form 1391 to include all supporting documentation. Projects must be developed and kept current. The energy manager must follow the ECIP checklist. It is the installations responsibility to complete the project documentation for National Environmental Policy Act (NEPA) and Measurement and Verification (M&V) or the project will be returned. Only complete and accurate DD Form 1391s meeting the ECIP guidance/checklist will be submitted to the Command in PAX. Ensure narratives are submitted with each project.

b. Commands: The Commands (ACOMs, Army Service Component Commands, and Direct Reporting Units) receive projects from installations, vet each project to ensure compliance with the ECIP guidance/checklist, prioritize projects to align with the Command energy strategic goals, and submit validated projects on the required Army Template and submit projects in the PAX DD Form 1391 system.

c. OACSIM ODF: ODF has the responsibility to provide annual ECIP Guidance to Installations, entrepreneurial support for good project ideas and ongoing dialogue with Installations, Major Commands, DASA (I,H&P), DASA (E&S), USACE and OSD to create interest in the ECIP Program and seek additional funding for ECIP projects. ODF also organizes project submissions, leads a panel to evaluate submissions and creates the annual ECIP submission thru ASA (IE&E) to OSD. Once the projects have been approved by OSD, ODF has a responsibility to oversee execution by USACE, NAVFAC, or other approved executing agents, to ensure that installations re-validate LCCA calculations and demonstrate the value of each ECIP investment. ODF is also responsible for reporting project completion and function to ASA (IE&E) and OSD on a regular basis and ensuring that energy savings and / or generations are reported to AEWRS.

d. Executing Agent (USACE, NAVFAC, etc.): The main responsibility of the Executing Agent is to execute Army ECIP projects in a professional, timely, cost-effective manner. The Executing Agent has the responsibility to have the necessary technical skills to comprehend each ECIP DD Form 1391 and negotiate final changes with ODF before execution. Once execution begins, the Executing Agent shall keep detailed records of all meetings, attendees, decisions, schedules and associated issues and shall provide timely communication to inform ODF of progress, planning, and issues to be resolved. All Project Managers must provide the USACE National Account Manager a monthly update of all projects, due at HQ by the Friday before the second Tuesday of each month. The Executing Agent has the responsibility to obtain professional design and construction services (each with thorough knowledge of the renewable energy technology) and use cost-competitive acquisition strategies to optimize the expenditure of ECIP P&D and construction funds. The Executing Agent is also responsible to meet all fund obligation reporting requirements of the OSD Comptroller.

Process Summary

The Office of Assistant Chief of Staff for Installation Management (OACSIM) provides all primary Army Commands with ECIP Annual Guidance on project development, submittal, and economic analysis. The Commands (ACOMs/ASCCs/DRUs) use this guidance to prepare projects (DD Form 1391) and all supporting documentation to ensure projects are technically sound and can be validated. Validated projects are ranked in four categories, renewable energy, water conservation, energy efficiency, and energy security. Projects are then prioritized according to the OSD memorandum referenced in this guidance

The OACSIM, in coordination with DASA (E&S), is responsible for final review and ranking of annual ECIP project list submission thru the DASA (I,H&P) / DASA (E&S) to the Office of the Secretary of Defense (OSD-ATL). OSD consolidates candidate projects from all Services and Defense Agencies for the program submitted for the President's FY14 Budget in January 2013. When FY14 P&D funds are appropriated (FY2013 funds), OACSIM will authorize the Executing Agent to initiate designs of projects to be funded in FY14.

Once FY14 construction funds are appropriated, OSD notifies Congress of the intent to execute the ECIP program. After a 14-day waiting period, project funds are transferred by OSD to the Executing Agent. The Program Manager (PM) may execute projects through Corps of Engineers, NAVFAC, Installation resources or other approved entities. In some cases, by OACSIM direction, funds are transferred to State National Guard offices to award projects. OACSIM tracks construction and funding progress with the Executing Agent and updates execution status to OSD quarterly.

Following is the approximate timeline for FY14 and FYDP, FY15-18 ECIP program development and execution:

Nov 2012	OACSIM ECIP Annual Guidance, FY14 and FYDP request sent to Commands
4 Dec 2012	Commands submit FY14 Program
20 Dec 2012	OACSIM submit FY14 Program to OSD
31 Jan 2013	Commands submit additions/changes/modifications to the FYDP
2 Q FY13	ECIP FYDP briefed to Council of Colonels, 2 Star GOSC, SSRG
31 Mar 2012	OACSIM submit FYDP to OSD
Oct 2013	OACSIM ECIP Annual Guidance, FY15, and FYDP request sent to Commands

Commands must use the ECIP Army Submission templates, or spreadsheets, for ECIP submission for FY14 and FYDP. These templates are found in the Tabs assigned by the ECIP memorandum. The design percent for all projects will equal 10%.

Business Rules

Business Rules

The ECIP Program Manager for the Army is OACSIM (DAIM-ODF).

All ECIP projects shall conform to the OSD Memorandum, ECIP selection criteria.

Project must follow the ECIP Annual Guidance, OSD Memorandum, and ECIP Checklist

All ECIP projects must have Command "actual" signature.

All ECIP projects for consideration must be submitted in PAX up to the ECIP level.

All ECIP projects must be submitted by Command on the Army Submission Template.

Each component shall have the right to make additions, deletions, and changes to previously submitted projects subject to OACSIM and ASA (IE&E) approval.

Each FY program is based on competition among all services. In the event of reduced or increased funding by OSD, projects will be removed from the current list and added from the FYDP (next FY). In the event of substantial additional funding (FY09 ARRA, FY13) projects from the subsequent FY program will be used in priority order.

Any ECIP project which is funded by any non-MILCON funding (OMA, QUTM, etc.) must be withdrawn from the ECIP program and removed from PAX. Notify OACSIM directly if outside the normal process.

The Army ECIP Program will strive to use 2/3 of the annual budget for energy efficient projects and achieve an average SIR of 2.0 for each annual program. Designated NetZero energy and Water Installations will receive priority consideration for ECIP projects. The Reserve Components shall compete for funding since projects are no longer block funded by OSD, but competitive.

Each component, DASA (E&S), DASA (IH&P), and USACE shall designate a representative to participate in ECIP discussions/meetings.

DD Form 1391 Review Checklist

Energy Conservation and Investment Program (ECIP)

Last Update – October 2012

References

a. Office of the Under Secretary of Defense (OSD), 16 Dec 11, Subject: Submission of Projects for the FY2012 Energy Conservation Investment Program Congressional Notification, the FY2013 Budget Exhibit, and plans for the FY2014-FY2017 Future Years Defense Program.

b. Assistant Chief of Staff for Installation Management, Subject: Energy Conservation Investment Program (ECIP) Annual Guidance.

c. Knowledge and skills of experts from U.S. Army Corps of Engineers, Engineering and Support Center, Huntsville, and Idaho National Labs, who are expert in the field of Energy, as it relates to technology, cost, savings, and systems used for ECIP.

Purpose

Active Army, Army Reserve, and Army National Guard users, especially Energy Managers, to use as they prepare ECIP project submittals. Commands may use the checklist to ensure projects are complete and properly vetted prior to submittal.

The DD Form 1391 for ECIP should be a complete and accurate project description and analysis for the year of submission. Installations must also review and reverify their submitted DD Form 1391s on a yearly basis to ensure data is updated with current information on projects that are resubmitted.

This document is in compliance and reflective of the referenced OSD and ECIP guidance.

Access to the System

Access and submittal of ECIP projects shall be accomplished through the Programming Administration and Execution (PAX) system. You may go to the web address https://pax.csd.disa.mil and click on the NEW USER button. Complete the new user request form and click the SUBMIT REQUEST button. PAX accounts are managed by BAE Systems. Their email address is acoe.support@baesystems.com and their customer service telephone number is (202) 761-8888.

After you have obtained your PAX account, you may request a DD1391 password via email to paxspt-huntsville@usace.army.mil. Please include the following:

PAX ID:
Full Name:
Description: (Provide a brief description of how you will be utilizing the DD1391 Processor System.

Note: Most Energy Managers need "write" access to their installation, such as write access to Fort Hamilton. Most Government Energy Managers gain verbal or written approval from their DPW to have a "submit" password. A submit password is provided to the designated individuals to submit projects from the installation to the region or region to OACSIM ECIP Program Manager. Contractors will need a Government sponsor.

Tutorial, Reference Guide, and Help Feature

____ Recommend that new users view the tutorial and "print" the DD1391 reference guide from the PAX Support – Huntsville website: http://www.hnd.usace.army.mil/paxspt/. The help feature in the DD1391 is useful and kept up-to-date as system changes are implemented.

PAX System Tips

____ Ensure users have downloaded the latest version of software, especially for PC-Cost and PDM and Print or the cost displayed on the users screen or printed may not reflect the latest Area Cost Factors. Users select the download icon to download the latest version.

____ Learn how to print all ECIP projects in the activity using the expanded directory format which includes the CWE.

____ Learn how to print a directory of a form or one project number which lists all activities that have access to the project and the authority codes. Authority code descriptions are described in the reference guide. It is important to know "W" means write, "S" means submitted to the activity and the activity with "S" can write to the project, "Q" means the project was transferred, and "P" means read-only. The authority code descriptions in the reference guide also include what Tabs can be updated even though the project has been submitted.

____ Understand and be familiar with special reports, such as, change history, comments, critical item data sheet, route history, and snapshots. ECIP Validation Team will enter comments into the PAX system. Learn to display or retrieve the comments.

____ If users want to increase or decrease the CWE by a percentage, change the FY, update SIOH or contingency factor by specific form number or by specific rank code, select DD1391 form control and then click cost update of form.

____ If users want to calculate cost for a primary facility without creating a DD Form 1391, select tools and then calculate cost.

____ If users want to work on the data offline, they may open the PC-Cost program and download, edit, and then upload the cost from a project, as long as the activity has write access to the project, typical authority codes are W, S, or Q.

____ Users may utilize CAPCES Module of the PAX system to view reports such as: Basic project, releases, P2 Des/Const, CAPCES/DD1391, Primary Facilities, Ad Hoc, etc. If

users want to get a basic understanding of primary facility costs for a specific category code, such as 84610, Water Storage Tank, Potable, select the primary facility report and filter by category code to see list of existing projects and filter by FY or select multiple FY.

Notes from Prior Year ECIP Reviews

____ Tab J, NEPA, was not complete.

____ Review the OSD memorandum to ensure the Tab D, economic life, is correct.

____ The Tab D, LCCA, is based on the total investment cost and calculated energy & non-energy savings cost data from each installation. Verify all calculations are current and upload supporting data into the Attachments Tab.

____ Upload backup data to show how costs were developed for the project in the Attachments Tab.

____ Ensure the Tab B Acquisition Strategy is entered (i.e., Design-Build)

____ Ensure engineering calculations supports the costs to ensure $ per Watt is not inflated. Enter detailed costs in Tab A or upload into the Attachments Tab.

____ Provide justification for Tab D, LCCA, non-energy savings (3A), non-recurring savings (3Ba), annual recurring costs, operation and maintenance (O&M) costs/savings, salvage value, and/or claimed rebates in the Attachments Tab.

____ Upload detailed calculations to justify MMBTUs to ensure project is not inflated.

____ Verify energy source such as electric rate is current, verify unit costs from AEWRS, and update Tab D.

____ When applicable for the technology, upload into the Attachments Tab items such as: building number, square feet per building, building location, and proposed direction of exposure.

____ If multiple sources of funding are being requested for the project, ESPC, QUTM, etc., annotate the information in the Attachments Tab of the project. If ESPC, please provide justification the requested ECIP funding will not impact the contractor's savings.

____ Ensure the FY is correct.

____ Scan and upload the Commander's "actual" signature into the Attachments Tab.

____ Ensure the project category from OSD memorandum is listed in the Tab A, Description of Proposed Construction (Renewable, Water Conservation, Energy Efficient, and Energy Security).

____ Ensure the Army Energy and Water Reporting System (AEWRS) statement is added to the additional block and POCs for the project as well as the cost engineer has been added to Tab A.

____ Ensure the power production for all renewable projects (i.e., 1MW Photovoltaic) is included in the title. Do not include "ECIP" in the title of the project.

____ The method of measurement and verification (M&V) savings must be included in Tab D and any project requiring a new meter must include the statement that meter(s) must be integrated with the Army Metering Program.

____ Verify the generation value is not mixed in with non-energy savings.

____ Verify renewable energy resource performance quantities (kWh, MBtu, etc) are consistent with engineering based performance values and etc.

____ Verify that demand charges are correct and provide billing data for validation.

____ Verify that the conversion factors for calculations of energy savings have been used consistent with data provided below:

Purchased electricity	3,412 Btu/kWh
Purchased steam	1,000 Btu /lb
Distillate fuel oil	138,700 Btu /gal
Natural gas	1,031 Btu /cu. ft.
Propane	91,690 Btu /gal
Butane	102,032 Btu /gal
Bituminous coal	24,000,000 Btu /short ton
Anthracite coal	25,000,000 Btu /short ton
Residual #1fuel oil	135,425 Btu /gal
#2 Fuel Oil	138,000 Btu /gal

____ Verify energy prices submitted for the project and supply a breakdown of the utility bill or other info needed to verify the savings.

____ Verify projects submitted for the same location have the same energy costs used in calculating savings on different submittals. Verify the proposals do not include prior year submittals that were re-submitted in the current program and have not changed escalation, discount, and different, energy rates, etc.

_____ Verify submittals have been updated to current rates and discount factors for consistency and accuracy.

Note: Users should open Tab A and Tab D to refresh the updates automatically.

____ Verify project has annual recurring costs for annual O&M after the warranty runs out. All projects have scheduled non-recurring costs (example: solar storage batteries have to be changed every 2000-3000 charge cycles).

_____ Calculate or identify reoccurring and non-reoccurring costs/savings in the calculations. Verify the savings are not over estimated and provide documentation for the basis of cost. Integrate a comprehensive description of recurring cost/savings.

____ Provide economic life expectancies for the projects consistent with the ECIP guidance or verify and justify exceptions.

____ Verify cost estimates to ensure they are consistent with current construction costs.

____ Provide cost basis descriptions, current maintenance expenditures, details for cost savings.

____ Verify O&M costs for projects explicitly complete with material costs (example: wind turbines have to have the transmission oil changed every 2-3 years, annual filter replacements, etc. and these costs are $5,000-$9,000 annually).

____ Complete the mandatory validation justification with description of validation method. Describe how the savings or production is going be measured and verified as compared to current installation baseline.

____ Verify Contingency percentage is consistent with the ECIP Guidance.

____ Verify the accuracy of utility rates; especially the demand and energy components.

____ Verify the name plate data is provided. For example, watts, type of energy generated, power, capacity, etc. should be included. The data should not be written in Tab A so as to require a particular brand name or product or a feature of a product, peculiar to one manufacturer.

____ Do not include any statements in Tab A referring to the design, procurement, or execution strategy of the project.

____ Verify the discount factor is consistent with NIST guidelines. Make sure Tab A and Tab D are refreshed with the current discount factors. Verify the mandatory fields are edited correctly, the Fiscal Year, economic life, region, and location. (This dictates the NIST discount factor for the project).

____ Properly identify, if applicable, the use of salvage values for both old and new systems at end of life with a detailed description.

____ Verify that the project is stand alone, not coupled with or contingent upon other projects.

DD FORM 1391 REVIEW CHECKLIST

Energy Conservation and Investment Program (ECIP)

Project: _____

Form Number: _____ Date: _____

Project Manager: _____ Date: _____

Command: _____ Date: _____

ECIP project submittals have common challenges and have to be updated with corrected information, at minimum, yearly. Listed below is a checklist to assist in developing complete projects that can be assessed and evaluated.

1. General DD Form 1391

Users should ensure DD Form 1391s are complete and that reviewers can clearly understand the scope of the project, the basis for all costs, the methodology of metering and validation, and a concise summary of energy consumption values before and after the project is completed.

Write all text in simple English, not technical language. Remember, your audience is non-technical.

State the need in short concise sentences. Do not embellish with statements like "continue to impair mission execution."

Write the document to be current in the execution year.

Creating a New DD1391 Form, users must use the program type, ECIP, select the future occupant, and enter the preparer's information. This information should designate the most knowledgeable person and POC for the project. In order for the project to be considered ECIP, the user must select all the standard statements. Please read these statements and understand the impact to your installation if the project is selected to be funded by ECIP (such as installations are responsible for the future O&M cost of the project). Know what you are committing your installation to when you create the ECIP project.

2. Tab A, DD1391 Form

Header Information

____ Verify the appropriate FY.

____ Verify the proper location/Installation/Sub-Installation. This field and the Economic Life field can be found on Tab D, Economic Analysis, determine the region and discount factors from the current NISTR.

____ Verify that the Type of Work qualifies for ECIP funding. Avoid use of ECIP for projects that can be accomplished with O&M funds or Third Party Financing.

____ Verify the category code IAW DA PAM 415-28.

Cost Data

Cost estimates for many installations are not consistent with current construction costs. Ensure your projects are updated annually.

____ Facilities should include Unit Cost versus Lump Sum with units of measure IAW DA PAM 415-28. Often the energy metric or square feet of facility is missing. Without the basis of cost listed, the demand savings and energy savings cannot be verified. *Those projects which use Lump Sum without any description of how the cost was calculated are subject to be returned without further review.*

____ Verify the major work items (primary line items) are identified with costs in block 9 (cost estimate) and also identified in the Description of Proposed Construction (block 10). For example, buy American estimate versus Foreign made.

____ Verify the correct CAT CODEs are used for individual major line items under Primary Facilities IAW DA PAM 415-28.

____ Verify the facility unit costs are reasonable as compared to the current Office of the Under Secretary of Defense or US Army Corps of Engineers cost guidance.

____ Ensure the Antiterrorism (AT) costs are appropriately identified in the cost estimate for Primary and/or Supporting Facilities. If AT exceeds 2% of Primary or Supporting Facilities cost, then include detailed justification.

____ Ensure supporting facilities do not exceed 25% of the Primary Facilities cost without an explanation of why in the Description of Proposed Construction (i. e., supporting facilities are high due to remote location and extensive utility line runs).

____ Ensure Associated Costs for ECIP projects Contingency are 5% and SIOH 5.7% CONUS / 6.5% OCONUS. If these amounts are changed, then include a detail justification in the additional block of Tab A.

____ Verify a Design Build (D-B) project, shows 4% D-B costs. Select Tab B, Planning & Design, Status, paragraph G drop down box and select D-B to show the 4% D-B costs. Ensure any additional cost to the design is included in the Tab A cost data.

Description of Proposed Construction
General DO's and DON'Ts:

____ Do not discuss type of construction (permanent, semi-permanent, temporary). This paragraph should contain no design details (e.g., steel frame, reinforced concrete, R-30 insulation).

- Discuss what, not why. **AVOID ACRONYMS.** If they are necessary, ensure the acronym is spelled out the first time used in the DD Form 1391.
- Do not use negative statements (e.g., Handicapped not provided for).
- Begin paragraph with Construct/Renovate/Modernize, etc.
- Outline all primary and support facilities.
- Mention unusual site conditions.
- Describe how the project contributes towards energy security, such as mitigation of vulnerability to grid loss (Microgrid, Energy Storage).
- Do not list building numbers or how many buildings are affected by the project proposed construction on Tab A. The building data may change during design phase of the project and replaced with another "like" building. Therefore, upload into the Attachments Tab of the project all building numbers, floor design, building type, square feet per building, building location, proposed direction of exposure when technology requires, and if retrofit, include current and retrofit technology, as well as, current wattage and retrofit wattage to validate energy savings.

____ Rule of Thumb: Describe what's shown on the cost estimate (Block 9), and estimate what's described in Description of Work (Block 10).

____ Ensure the project type is listed and correct (Energy Efficiency, Renewable Energy, Water Conservation, Energy Security). List the appropriate technology. See OSD Memorandum.

____ Since ECIP does not have a Tab C, Misc, users should include the total project scope in block 10.

Project

____ Should be one sentence statement like "Install a 500 kW Solar Photovoltaic Array" or "Install a 378KW Solar Electric Car Port Structural System to generate 480,800kWh during first year". Always start with the verb. Avoid using quantities in the title; quantities should be included in the cost data. Provide any imperative information for the system (i.e., if the system is tracking or fixed, provide the size of the unit).

____ If project is power generation, provide the amount of power to be produced in the title.

Requirement (Why is it needed now)

____ Include any compliance or contribution towards energy and water related mandates such as energy conservation, renewable energy, metering/energy management systems, information management systems (i.e., AMI, EMCS, UMCS, SCADA), and water

conservation.

____ Does this paragraph show continuing need? Does the paragraph say what the project is being built for, what the requirement for the project is? Use positive statements only.

____ Standard Statements that must be included for specific projects:
- Training Projects – State average daily loads/throughput.
- Barracks – What is maximum and intended utilization?

____ Verify the math: ADEQUATE plus "the amount of scope on the project" cannot exceed the amount shown in "REQUIRED." Do not leave blank. This line is meant to cover installation totals for this type of facility.

Current Situation (How is the need currently being met)

____ Does paragraph show how need is currently being met (how does unit currently operate) and what hardships are being overcome and current facility deficiencies?

- Include the Installation Status Report (ISR) rating.
- Address any waivers that may apply (i.e., OSHA, Safety, Security, etc.).

Impact if not Provided

____ Describe what happens if project is not approved. Be specific and factual. **Do not repeat current situation. Do not be hyperbolic!**

Additional

____ Ensure Army Energy and Water Reporting System (AEWRS) statement is added to the additional block and that the POC for the project and cost engineer point of contact information has been added.

____ If there have been any feasibility studies/surveys completed for the project, list the report/date and POC to obtain a copy of the electronic file. If the file is less than 1MB, upload any additional information required to verify the report to the Attachments Tab of the DD Form 1391.

Recommendation/Examples:

"The AEWRS data input for Fort Installation is up-to-date and has been certified by Mr. John Doe, john.doe@us.army.mil, (256) 555-1212.

The POC for this project is Mr. John Doe, john.doe@us.army.mil, (256) 555-1212 and the Cost Engineer which approves the cost is Ms. Jane Doe, jane.doe@us.army.mil, (256) 555-1313."

____ Use the Standard Statement Assistance button to select standard statements which "prints" when the form is printed.

Commander's Signature Block

____ Ensure the signature block is included, correct and signed by the Installation Commander

and upload the "Actual" signature to the Attachments Tab.

- The project must not be submitted from the installation without the actual Installation Commander's signature affixed to the signature block on Tab A of the DD Form 1391. The actually signatures may be requested by OACSIM.

- To reduce any delays, installations should upload the Commander's actual signature of the DD Form 1391 to the Attachments Tab.

- If the Installation Commander doesn't sign the DD Form 1391, then how would they know they will be responsible for the operation and maintenance of the potential funded ECIP projects?

Estimated Construction

____ Are construction dates correct?

Note: ECIP Projects are not incrementally funded.

3. Tab B, Planning & Design

Tab B is reserved for USACE use

____ During the Planning Charrette the proposed Acquisition Strategy will be chosen. The choices are design-build, design-bid-build, or adapt-build.

Note: Choosing design-build will automatically add 4% to your cost estimate. Any additional costs for design should be included in the Tab A, cost data.

____ The construction dates, Tab B, must "Match" the construction dates on Tab A.

Note: Some tabs will be missing in alphabetical order, such as Tab C, due to the programming of the PAX system.

4. Tab D, Economic Analysis

A Life Cycle Cost Analysis (LCCA) is required to assess the long-term cost-effectiveness of all submitted projects. Life-Cycle Cost is the total cost of owning, operating, and maintaining a system over its useful life, where costs are adjusted to their present value based on time of occurrence and time value of money, or discount rate. The LCCA includes costs arising from constructing or procuring, recurring and non-recurring costs/savings, operating, maintaining, and ultimately disposing of a project.

____ Ensure mandatory fields are entered correctly.

- Enter the Economic Life of the project. See ECIP guidance for technology selected. Depending upon the Economic Life entered and the location selected from Tab A, the

system automatically generates from the current NISTR the discount factors. Make sure you have the correct economic life entered for the technology selected. See OSD Memorandum.

- DD Form 1391 must include the measurement and verification (M&V) statement. Describe how the installations will measure energy consumption for existing facilities for energy reduction projects, what instrumentation will be included in the ECIP project, and how the reduced energy and or renewable energy will be measured and reported to AEWRS. Include any information systems such as AMI, EMCS, UMCS, SCADA, etc., as well as identify verification plan and methodology for any metering/energy management systems. The M&V is mandated by OSD.

____ Follow current ECIP Guidance to complete Tab D.

____ Ensure the total energy savings were converted correctly from kWhr to $MBtu, block 2I(2).

____ Ensure the installations O&M costs for the project are entered into the Annual Recurring Cost, block 3A. Justification should be uploaded into the Attachments Tab.

____ Ensure all non-energy savings or costs, annual recurring and non-recurring costs, are entered into the LCCA. Justification should be uploaded into the Attachments Tab.

____ Additional or decrease in operators/maintenance personnel should be included in the LCCA. Justification should be uploaded into the Attachments Tab.

____ Ensure any salvage value is defined in the Additional Block of Tab A. Justification should be uploaded into the Attachments Tab.

____ Ensure the minimum Savings-to-Investment Ratio (SIR) is equal to 1.00 or greater for renewable project to include water conservation or SIR is equal to 1.25 or greater for non-renewable projects. The energy security projects do not require a SIR.

Note: ECIP projects submitted that do not meet the minimum SIR will be returned without further review.

____ Ensure you include savings for avoided costs, size (SF) and type and detail of replacement system, such as high energy sodium vapor lights, cost per MMBTU (or Mwh) to operate the new system, and current MMBTU cost of current system to operate.

5. Tab F, Information Systems

____ Ensure Network Enterprise Center (NEC), future occupant, and installation master planner identify IT requirements.

____ Ensure the Information Management (IM) representative completed the cost estimate.

____ Ensure NEC/DCSIM signature is included / signed.

____ Ensure the United States Army Information Systems Engineer Command (USAISEC) certified the IT costs in Tab F.

____ Make sure costs from estimate rolled up in cost block of Tab A.

6. Tab J, Regulatory Data

In accordance with 32 CFR 651, no construction activities shall begin until the proper NEPA documentation has been completed to include, but not limited to, a Record of Environmental Consideration which may lead to either a Categorical Exclusion, Environmental Assessment, and/or an Environmental Impact Statement. A written description shall be provided to summarize the anticipated actions and schedule to meet the NEPA requirements.

Environmental Analysis

____ Ensure the Environmental Office reviewed the analysis.

(DATE OUT:_____; DATE IN _____.)

____ Ensure this section summarize all environmental impacts.

____ Verify the correct standard statement is selected (radio button in Tab J).

____ Verify the appropriate environmental documentation is included (Categorical exclusion, project category, etc.).

____ Verify proper approval signatures (environmental rep and DPW).

Note: Beware; failure to complete environmental documentation is a project stopper. It is of such importance that IMCOM reports status of environmental documentation to the Assistant Secretary of the Army's office on a regular basis.

NEPA

____ Type

____ Cost

____ Timeline

Evaluation of Flood Hazard

____ Environmental Office review: (DATE OUT:_____; DATE IN _____.)

____ Verify project is not in a flood plain (100 year flood) or wetlands. If sited in a flood plain, state reason to site the project there and that mitigation measures will be incorporated into the facility design.

____ Verify that siting is not in flood plain or wetlands (500 year flood plan for critical facilities, hazardous materials, or toxic waste sites).

____ Verify standard statement is provided.

Historic and Archeological Sites

____ Environmental Office review: (DATE OUT:_____; DATE IN _____.)

____ Verify the project been reviewed for impact.

____ Verify the standard statement is included.

____ Verify the appropriate documents are included.

____ Verify ALL the proper signatures are provided.

Energy and Utility Requirements

____ Ensure capacities and utilization for each utility is shown in tabular format.

____ Ensure all energy sources been evaluated.

____ Ensure utility ownership identified.

____ Verify the owner of utility provided the cost estimate for the project.

____ Ensure written description of proposed utilities used to develop cost estimate or sketch is attached in Attachment Tab.

Provision for Individuals with Disabilities

____ Ensure all applicable standard statements are selected (Radio button).

Commercial Activities (Optional, Not Required by HQDA)

____ List any Commercial Activities Analysis required (cite AR 5-20 exception)?

____ Ensure the Commercial Activities Analysis is signed by Comptroller.

7. Attachment Tab

Below are files users are required or should upload (1 MB file limitation):

____ Commander's actual signature on the DD Form 1391 (Required)

____ Responses to narratives required by OSD Memorandum

____ Building numbers, floor designs, square feet per building, building location, and proposed direction of exposure, when technology required.

____ Engineering Basis of Estimate or Cost/LCCA Engineers Notes

____ Approved site plan sketch

____ Utilities plan sketch

____ Photos of site proposed location

____ Reports of any prior feasibility studies or survey's, such as wind survey and solar.

If any electronic file exceeds 1MB, make a note of the file in Tab A, Additional Text Block, and list the POC to obtain a copy of the electronic file.