UESC PROJECTS WORKSHOP

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Providence, RI
April 13, 2010

FEMP
Federal Energy Management Program

UESC Workshop, Providence, RI

Agenda

9:00 – 9:15	Welcome – Dan Dessanti, National Grid – David McAndrew, DOE-FEMP
9:15 – 9:45	Federal Energy Management Requirements - FEMP Mission - Energy Requirements
9:45 – 10:45	UESC Basics - Enabling Legislation & Contract Vehicles
10:45 – 11:00	Break
11:00 – 11:30	Project Planning and Identification Phases – Audit & Feasibility
11:30 – 12:00	Contract Development
12:00 – 1:00	Lunch – on your own
1:00 – 1:45	Financing
1:45 – 2:00	Break
2:00 – 2:45	Project Implementation Phase – Design & Construction
2:45 – 3:15	UESC Process Overview
3:15 – 4:00	Project Discussion and Q&A

FEMP
Federal Energy Management Program

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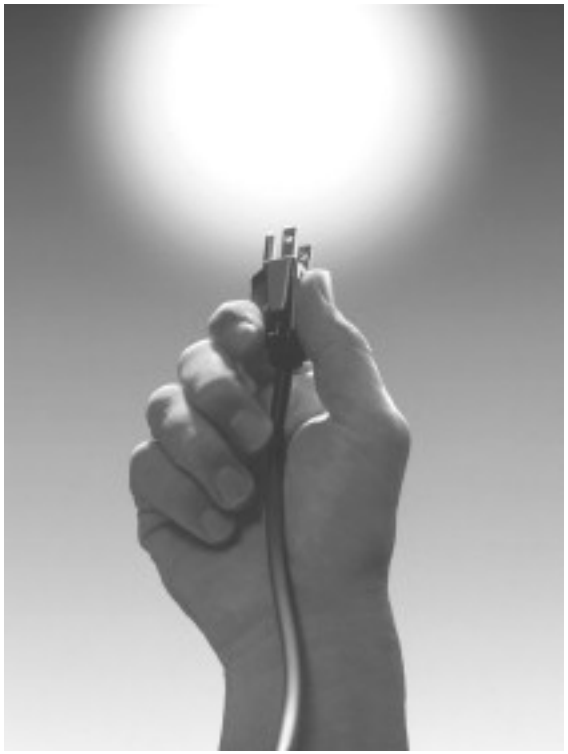

FEMP
Federal Energy Management Program

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Sources of FEMP Support – Contacts

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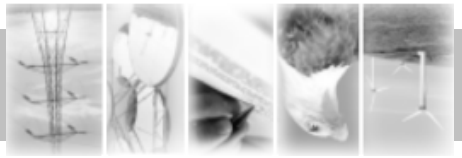
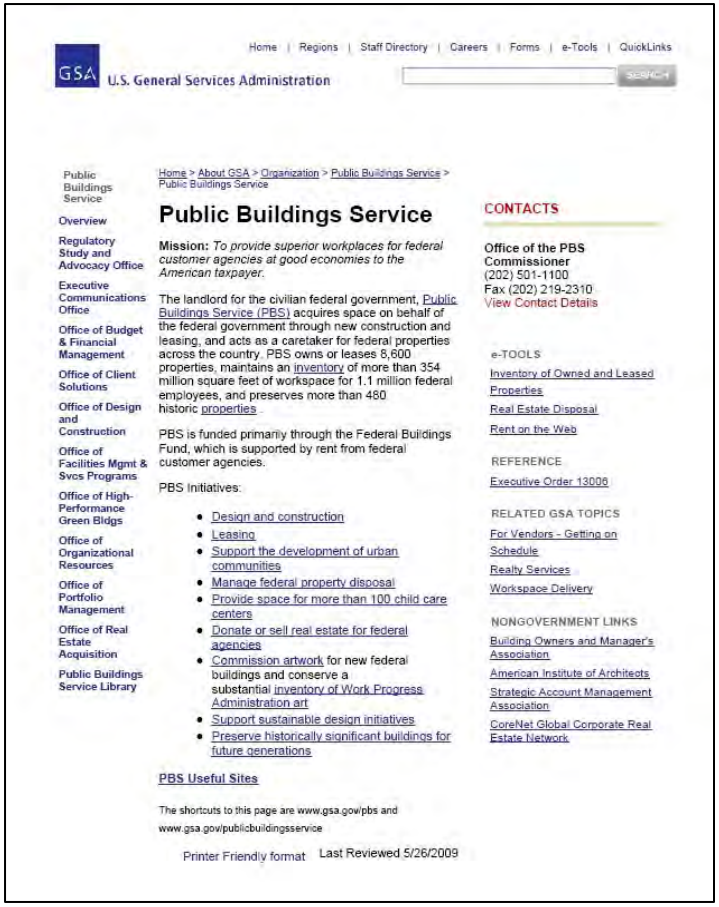
Sources of FEMP Support – GSA Contacts



Energy Center of Expertise
www.gsa.gov/energy

Public Utilities Center
www.gsa.gov.pbs.xu



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Sources of FEMP Support – Web Resources

GSA Areawide Contracts Listing
http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/Areawidelist_Oct_6_2008_R2HI18_0Z5RDZ-i34K-pR.doc

GSA Utility Areawide Guide
http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/procuring_energy_R2H915_0Z5RDZ-i34K-pR.pdf

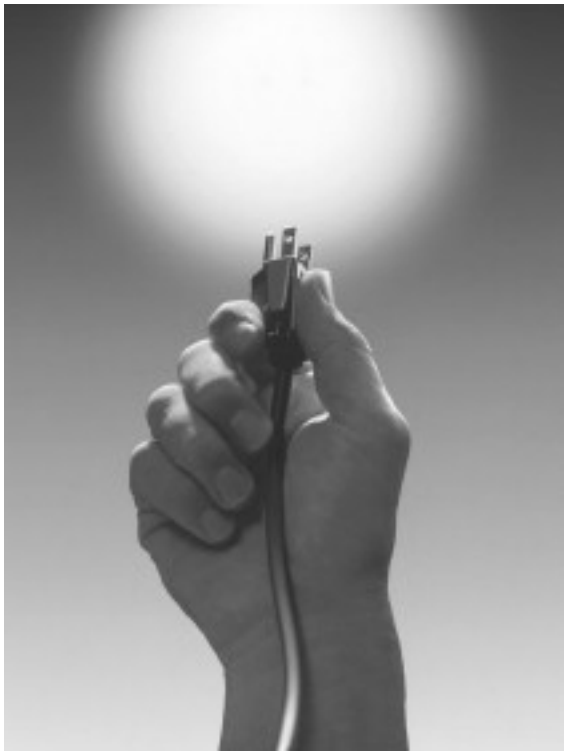
UESC Enabling Documents
http://www1.eere.energy.gov/femp/pdfs/28792.pdf

Model Areawide Contract
http://www.gsa.gov/gsa/cm_attachments/GSA_DOCUMENT/procuring_energy_R2H915_0Z5RDZ-i34K-pR.pdf

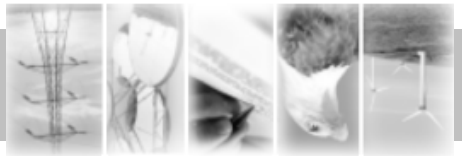
FEMP M&V Guidelines
www1.eere.energy.gov/femp/pdfs/26265.pdf

Analytical Software Tools:
http://www1.eere.energy.gov/femp/information/access_tools.html

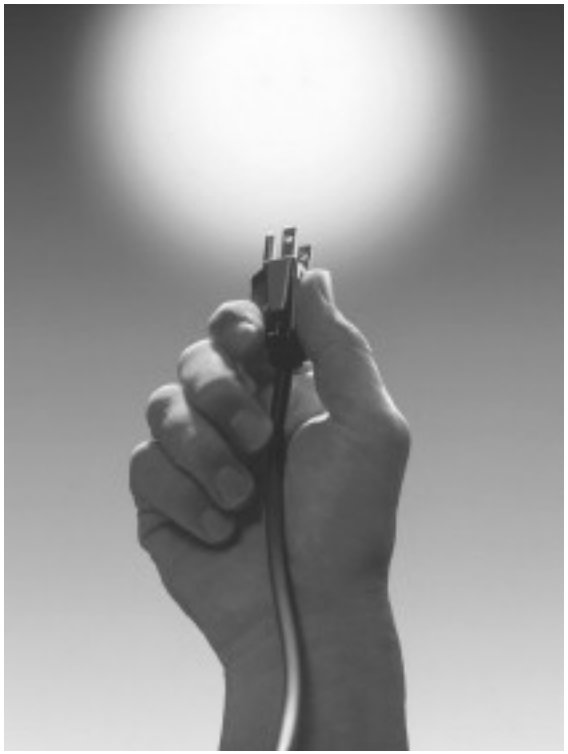
Federal Reserve Selected Interest Rates
www.federalreserve.gov/releases/h15/current/



Acronyms and Abbreviations



AMA	Agency Master Agreement
AWC	Area-wide Contract
BOA	Basic Ordering Agreement
BP	Basis Point
Btu	British Thermal Unit
CBD	Commerce Business Daily
CFC	Chlorofluorocarbon
CFR	Code of Federal Regulations
CO	Contracting Officer
COR	Contracting Officer's Representative
COTR	Contracting Officer's Technical Representative
DEPPM	Defense Energy Program Policy Memorandum
DESC	Defense Energy Support Center
DFSC	Defense Fuel Supply Center
DO	Delivery Order
DoD	U.S. Department of Defense
DoE	U.S. Department of Energy
DSM	Demand Side Management
E&D	Engineering and Design
ECM	Energy Conservation Measure
EEI	Edison Electric Institute
EMCS	Energy Management Control System
EIA	Energy Information Agency
EISA	Energy Independence & Security Act of 2007
ESA	Energy Services Agreement
EO	Executive Order
EPACT	Energy Policy Act of 1992 & 2005
ESPC	Energy Savings Performance Contract
ESCO	Energy Service Company (also "contractor")
FAR	Federal Acquisition Regulation
FEMP	(Office of) Federal Energy Management Program(s)
GSA	General Services Administration
HVAC	Heating, Ventilation, and Air Conditioning
IRR	Internal Rate of Return
J&A	Justification and Authorization
kW	Kilowatt
kWh	Kilowatt-hour
LBNL	Lawrence Berkeley National Laboratory
LCC	Life Cycle Cost
MOU	Memorandum of Understanding
LCC	Life Cycle Costing
MOU	Memorandum of Understanding
MW	Megawatt
M&V	Measurement & Verification
NECPA	National Energy Conservation Policy Act
NEPA	National Environmental Policy Act
NIST	National Institute of Standards and Technology
NREL	National Renewable Energy Laboratory
O&M	Operations and Maintenance
OH	Overhead
ORNL	Oak Ridge National Laboratory
PM	Program Manager
PNNL	Pacific Northwest National Laboratory
PUC	Public Utility Commission
RFP	Request for Proposal
SOW	Statement of Work
TO	Task Order
UESC	**Utility Energy Services Contract**
U.S.C.	United States Code



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FEMP
Federal Energy Management Program

*Congratulations on your decisions to achieve greater energy efficiency in your facility and to learn about **Utility Energy Service Contracting (UESC)**. FEMP is pleased to offer you this training course designed to assist you in making informed decisions concerning financing for energy projects within the federal government. Opportunities exist for reducing energy consumption through improved energy management practices, the replacement of old and inefficient energy consuming equipment, and the use of renewable energy systems and sources.*

The Federal Energy Management Program (FEMP)

FEMP is your partner for making projects happen

FEMP's Mission

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

The Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.

eere.energy.gov

FEMP's mission:

a.Directly and indirectly influence the implementation of energy projects throughout the federal sector
b.and to reduce costs to the federal government by advancing energy efficiency, water conservation, and the use of renewable energy sources.

Legislation and Executive Orders (EO) have been instrumental in increasing the importance of agency action and FEMP's mission:

a.The Energy Policy Act of 1992 (EPACT)
b.Executive Orders 13423 & 13514
c.The Energy Policy Act of 2005
d.The Energy Independence Act of 2007 (EISA)

The Federal Energy Management Program (FEMP)

The use of alternative financing mechanisms by federal agencies to improve system efficiency and procure energy efficient equipment continues to be encouraged and supported through legislation.

Please introduce yourself.....

- Tell us you facility/job function.
- Questions and expectations?
- Tell us about your potential project.

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Our Objectives

During this workshop, we will:

- Review Federal requirements.
- Present the steps involved in developing Utility Energy Service Contracts.
- Identify tools and resources available to assist you in implementing your project.

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Today's energy climate, including rising utility costs and transmission issues, add urgency to our efforts toward energy and water efficiency.

The Federal Energy Management Program (FEMP)

Federal Energy Management Requirements

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

P.L. 110-140 (H.R. 6)
ENERGY INDEPENDENCE
AND SECURITY ACT (EISA) OF 2007

FEMP Guidance Resource for the EISA:
New and Enhanced FEMP Responsibilities

http://www1.eere.energy.gov/femp/pdfs/eisa_femp.pdf

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The Federal Energy Management Program (FEMP)

The Energy Independence and Security Act of 2007 (EISA)

Federal Energy Management Requirements

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Energy Independence & Security Act of 2007 Overview

Energy Reduction Goals for Federal Buildings

Section 431 adopts the energy intensity reduction goals of Executive Order 13423 beginning in FY 2008

- Reduce Btu per gross square foot:
  - 9% in 2008
  - 12% in 2009
  - 15% in 2010
  - 18% in 2011
  - 21% in 2012
  - 24% in 2013
  - 27% in 2012
  - 30% in 2015
- Compared to FY 2003 base year

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Facility Management Requirements

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Energy Independence & Security Act of 2007 Overview

Section 432 establishes a framework for facility project management

- Agencies must identify all "covered facilities" that constitute at least 75% of energy use.
- Each facility must have a designated energy manager responsible for:
  - Completing comprehensive energy and water evaluations (25% of facilities each year)
  - Implementing identified ECMs; (bundling permitted)
  - Following up on implemented ECMs
- Web-based tracking system to certify compliance; including each facility's potential measures, estimated cost and savings of measures.
  - Tracking system will be available to Congress, other Federal agencies, industry, and the public
    - Some specific data exempted from disclosure for national security purposes.
- In addition to tracking system, energy managers shall enter energy use data for each facility into a benchmarking system (i.e., Energy Star Portfolio Manager)

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The Energy Independence and Security Act of 2007 (EISA) was signed by the President on December 19, 2007. The bill aims to increase our energy security, expand the production of renewable fuels, and make America stronger, safer, and cleaner for future generations.

Key components of the bill will directly impact the Federal agencies.
a.Energy reduction goals for Federal buildings are 30% by 2015 and energy and water evaluations are to be conducted in 25% of an agency's facilities at least every four years.
b.EISA directs agencies to install meters on natural gas and steam, and bundle individual energy and water efficiency measures of varying paybacks in order to implement comprehensive projects.
c.Agencies are authorized to use their appropriations in combination with private financing, such as UESC, to increase the breadth and scope of implemented projects.

The continued and increased use of UESCs will play a major factor in helping agencies realize the legislative mandates

The Energy Independence and Security Act of 2007 (EISA)

Facility Management Requirements (cont'd)

Energy Independence & Security Act of 2007 Overview

DOE Guidance/Decisions:

- Guidelines on designating energy managers criteria for covered facilities and
- Guidelines for project implementation and follow-up measures
  Select benchmarking system (Energy Star) or develop another
  OMB energy scorecards to be based on the requirements of Section 432
- Scorecards available to Congress, other Federal agencies, and the public
- Authorizes agencies to use appropriations, private financing, or a combination to comply with its requirements
  - Resource Energy Managers (REMs) for assigned energy managers
  - ESPCs, UESCs for evaluations/project implementation

Section 434(b), Metering: Not later than 1 Oct 2016, each agency shall provide for equivalent metering of natural gas and steam (as currently required for electricity)

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Standards for New Buildings/Renovations

Energy Independence & Security Act of 2007 Overview

Section 433, Federal Building Energy Efficiency Performance Standards, directs DOE to issue revised Federal building standards that:

- require that the fossil fuel-generated energy use of the new buildings is reduced (compared to 2003) by:
  - 55% for 2010
  - 65% for 1015
  - 80% for 2020
  - 90% for 2025
  - 100% for 2030
- require that sustainable design principles shall be applied

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Standards for New Buildings/Renovations (cont'd)

Energy Independence & Security Act of 2007 Overview

Section 434 requires that each Federal agency ensure that major renovations/expansions employ the most energy efficient designs, systems, equipment, and controls that are life-cycle cost effective. Each Federal agency shall:

- Develop a process for reviewing each decision made on a large capital energy investment to ensure that the requirements are met; and
- Report to the Director of the Office of Management and Budget on the process established.

Section 523 requires 30 percent of the hot water demand in new Federal buildings (and major renovations) to be met with solar hot water equipment, provided it is life-cycle cost-effective.

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Leased Space

Energy Independence & Security Act of 2007 Overview

Section 435 prohibits Federal agencies, effective 19 Dec 2010, from leasing buildings that have not earned an EPA Energy Star label. Exemptions are provided if:

- no space is available in a labeled building that meets the functional requirements of an agency, including locational needs;
- the agency proposes to remain in a building that the agency has occupied previously;
- the agency proposes to lease a building of historical, architectural, or cultural significance (as defined in section 3306(a)(4) of title 40, United States Code) or space in such a building; or
- the lease is for not more than 10,000 gross square feet of space.

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EISA authorizes the use of appropriations, private financing, or a combination of the two to comply with the new energy intensity reduction goals.

EISA requires agencies to meter natural gas and steam

The Federal Energy Management Program (FEMP)

The Energy Independence and Security Act of 2007 (EISA)

High Performance Buildings

Energy Independence & Security Act of 2007 Overview

Section 436, High-Performance Green Federal Buildings, directs GSA to establish Federal High-Performance Green Building Office and Advisory Committee to:

- coordinate outreach with other agencies
- establish green practices and standards for the Federal sector
- review/analyze current Federal budget practices and life-cycle costing issues

For conducting life-cycle cost calculations

Section 441, Public Building Life-Cycle Costs, increases the time period *from 25 years, in prior law, to 40 years.*

- Provide findings to DOE regarding a certification system identifying new and existing Federal facilities as high-performance green buildings
  - Section 433 requires DOE to identify certification system and level
- Identify incentives to expedite H-P green buildings
  - Recognition awards
  - Retention of savings for re-investment

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Energy Savings in Government and Public Institutions

Energy Independence & Security Act of 2007 Overview

Sec 513: Promoting Long-Term ESPCs and Verifying Savings

- Prohibits agencies from establishing a policy to limit ESPC, *and all privately financed contract vehicles,* projects to less than the *maximum 25 year term*
- Prohibits agencies from establishing policies to limit the size of individual projects

Sec 514: Permanent Reauthorization

- Deletes sunset provision, authorizes ESPC permanently

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EISA increases the LCC time period from 25 years to 40 years

Energy Efficient Procurement

Energy Independence & Security Act of 2007 Overview

- Section 522 prohibits, except under certain circumstances, the purchase of incandescent light bulbs for use in Coast Guard office buildings.
- Section 524 encourages Federal agencies to minimize standby energy use in purchases of energy-using equipment.
- Section 525 requires Federal procurement to focus on use of Energy Star and Federal Energy Management Program (FEMP)-designated products.

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Web Access

Energy Independence & Security Act of 2007 Overview

http://www1.eere.energy.gov/femp/pdfs/eisa_femp.pdf

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EISA prohibits agency policy limiting the size and term of privately financed contract vehicles

The Federal Energy Management Program (FEMP)

Executive Order 13423 and National Defense Authorization Act of 2007

Guidance

Energy Efficiency & Renewable Energy

Renewables

- At least half of the statutorily required renewable energy (7.5% by FY 2013) from new renewable sources (EO, EPACT)
  - http://www1.eere.energy.gov/femp/pdfs/epact05_fedrenewenergyguid.pdf

Water

- Reduce water consumption intensity 16 % by the end of FY 2015 (EO)
  - http://www1.eere.energy.gov/femp/pdfs/water_guidance.pdf

Green Buildings

- New Construction/Major Renovations to comply with the Guiding Principles
- 15% of existing building inventory must comply by the end of FY 2015
  - http://www.wbdg.org/references/sustainable_eo.php
  - Additional guidance to be completed by end of FY08

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10 USC 2911-2918

Energy Efficiency & Renewable Energy

National Defense Authorization Act for 2007

Consolidation and Enhancement of Laws to Improve DoD Energy Efficiency and Conservation

- Repeals 10 USC 2865, old enabling UESC legislation - (language similar w/ some key additions)
- Reaffirms congressional & presidential support for UESCs
- Clarifies & expands authority to work with utilities
- Expand application to include the consideration of alternative energy initiatives for vehicles and military support equipment
- Authority to consider longer positive net present value returns for industrial process equipment upgrades

2911. Energy performance goals & plan for DoD
2912. Availability & use of energy cost savings
2913. Energy savings contracts & activities
2914. Energy Conservation
2915. New construction: use of RE and EE products
2916. Sale of electricity from alternate energy and cogeneration production
2917. Development of geothermal on military lands
2918. Fuel sources for heating systems

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10 USC 2911

Energy Efficiency & Renewable Energy

National Defense Authorization Act for 2007

Energy Performance Goals & Plan for DoD

- Energy Performance goals are to be submitted annually for the next 5, 10 and 20 years
- Energy Performance Plan – comprehensive plan to help achieve the energy performance goals for DoD
- Special Considerations – flexibility to evaluate ECMs to include alternative energy initiatives and energy reduction goals, *as opposed to requiring assessment of measures based solely on economic return within 10 years to justify the investment*

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10 USC 2911(d)

Energy Efficiency & Renewable Energy

National Defense Authorization Act for 2007

2911(d): Selection of Energy Conservation Measures

- Readily available
- ***Demonstrate economic return on investment***
- Consistent with energy performance goals and energy performance plan
- Supported by special considerations

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Reduce water consumption 16% by the end of FY 2015

The Federal Energy Management Program (FEMP)

National Defense Authorization Act of 2007

10 USC 2912

National Defense Authorization Act for 2007

Availability and use of energy cost savings

- Availability – fiscal year appropriations equal to the amount of energy cost savings, including financial benefits from shared energy contracts shall remain available until expended
- Use – one-half shall be used for the implementation of additional ECMs; *one-half shall be used at the installation at which the savings were realized*

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10 USC 2913

National Defense Authorization Act for 2007

Energy savings contracts and activities

- *Encourages participation* in gas or electric utility programs for the management of energy demand or for energy conservation
- Accept financial incentives, goods and services generally available from the utility

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The new provisions address energy performance goals, the availability and use of energy cost savings, energy contracts, energy conservation, the use of renewable and energy efficiency in new construction, for starters.

Defense agencies are also granted authority to evaluate energy conservation measures with economic returns greater than ten years.

Additionally, one-half of energy cost savings are to be used for the implementation of additional measures; while the other half is to be used at the installation where the savings were realized.

DOD Authorization and Emergency Economic Stabilization Act of 2008

Amendment to Section 10 USC 2866

U.S. Department of Energy | Energy Efficiency & Renewable Energy

National Defense Authorization Act for 2007

Amendment to Section 10 USC 2866:
Water Conservation Authority

- Water cost savings realized – One-half of the savings shall be used for water conservation activities as designated by DoD; *One-half of the savings to be used at the installation at which the savings were realized*

Section 103(a) Extension of Energy Credit

U.S. Department of Energy | Energy Efficiency & Renewable Energy

Emergency Economic Stabilization Act of 2008

Public Utility Taken Into Account

- *Allows Public Utilities* to use Investment Tax Credits (ITC) extended through December 31, 2016
  - Effective February 12, 2008
    - Applicable to:
      Energy Efficiency
      Combined Heat & Power Systems
      Solar Systems

The Federal Energy Management Program (FEMP)

Executive Order 13514, "Federal Leadership in Environmental, Energy and Economic Performance"

President Obama Signing EO 13514

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

On October 5, President Obama Signed Executive Order 13514, *Federal Leadership in Environmental, Energy, and Economic Performance.*

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EO 13514 and You

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

EO 13514 establishes an integrated agency strategy for sustainability, including greenhouse (GHG) emissions, within the Federal government in order to lead by example and achieve a clean energy economy.

Federal Government to reduce GHG pollution by *28 % by 2020 (baseline year 2008)* -

- Measure current energy and fuel use
- Shift to clean energy sources like solar, wind and geothermal
- OMB will validate and score agency's sustainability plan
- Annual progress will be measured and *reported to public*

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Executive Order 13514, "Federal Leadership in Environmental, Energy and Economic Performance" was signed by President Obama on October 5, 2009. This EO sets measurable performance goals for Federal agencies and its actions aim to spur clean energy investments that will create private-sector jobs, and drive long-term savings. Federal agencies must reduce greenhouse (GHG) emissions by 28% by 2020, based on 2008 levels.

The Federal Energy Management Program (FEMP)

Executive Order 13514, "Federal Leadership in Environmental, Energy and Economic Performance"

EO 13514 Goals

The EO sets goals for improvements in the following areas:

- The Executive Order also requires agencies to meet sustainability reduction targets, including:
  - greenhouse gas emissions
  - energy efficiency
  - water use efficiency and management
  - pollution prevention and waste elimination
  - regional and local integrated planning
  - sustainable Federal buildings
  - sustainable acquisition
  - electronic stewardship
  - environmental management

Greenhouse gas emissions

Agencies shall consider GHG emissions reductions from:

- Reducing energy intensity in agency buildings
- Increasing agency use of renewable energy
- Implementing renewable energy generation projects on agency property
- Reducing use of fossil fuels by:
  - Using low GHG emitting vehicles, including Alternative Fuel Vehicles
  - Optimizing the number of vehicles in the agency fleet
  - Reducing vehicle petroleum use by 2% annually through FY2020 (Baseline FY2005)

Questions?

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Contact the Office of the Federal Environmental Executive at info@ofee.gov

The Federal Energy Management Program (FEMP)

Project Financing Resources

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Why we need to finance projects: Allows for needed infrastructure improvements without increasingly scarce direct appropriations
- Financing resources:
  - Utility Energy Service Contracts (UESC)
  - Energy Savings Performance Contracts ESPC)
- "Choosing a Financing Vehicle for Energy Efficiency Projects for Federal Sites" http://www1.eere.energy.gov/femp/docs/choosing_financing.doc

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FEMP supports two methods of project financing: Utility Energy Service Contracts (UESCs) and Super Energy Savings Performance Contracts (Super ESPCs). Both methods allow agencies to enter into procurements without the need of direct appropriations.

FEMP recommends that agencies investigate both project financing options and consult DOE Utility Program Lead or Federal Financing Specialists to obtain advice on the available options.

For more information on project financing options, refer to the FEMP web site: www.eere.energy.gov/femp/financingmechanisms.cfm

This workshop provides you with the detailed step-by-step guidance, as well as the necessary tools and resources, to develop and implement a utility energy services contract.

OMB Recommendations

Energy Scorecard

- OMB Energy Scorecard
  - Energy Intensity
  - Renewable Energy
  - Petroleum Reduction
  - Energy Efficient Products
  - Building Performance

(The energy scorecard is one of three scorecards, others are transportation and environmental)

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OMB Recommendations to Improve Alternative Financed Projects

- Encourage all agencies to utilize experienced Project Facilitators on their projects.
  - Explore all avenues to help agencies reduce the time from kickoff to an operating project.
- Reduce financing costs
  - Agencies to verify reasonableness of financing offer
  - Agencies to verify pricing is in line with direct-funded projects
- Streamline administration of follow-up services (M&V, O&M, R&R) during the performance period to ensure savings persistence.

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FEMP formed Federal and private sector working groups to establish guidelines for each goal in accordance with EPACT 2005 requirements. The various guidelines can be found on the FEMP website.

OMB in consultation with DOE and other agencies develop the agency energy scorecards and a scoring system.

The scorecards are based on annual energy reports and are submitted to the President.

The Federal Energy Management Program (FEMP)

FEMP Project Assistance

Implemented energy projects save energy, taxpayer dollars and contribute to a cleaner and safer environment. FEMP intends to be a resource for federal agencies, state and local governments, and private sector companies to facilitate achievement of aggressive federal energy management goals by creating partnerships, leveraging resources, transferring technology, and providing training and support to all federal agencies.

Agencies have significant goals which they are striving to meet, along with their backlog of potential projects. The game has now changed with the ARRA funding. The question is no longer how do we fund projects? – The question is how do we implement projects?

ARRA funding may represent an opportunity for utilities to expand their Federal partnerships. Federal agencies are often large customers segments with aggressive conservation goals. Now with this substantial increase in funding and guidance from the Office of Management and Budget to use UESC (and ESPC) to maximize energy project, the potential for project implementation through UESC has never been greater.

American Recovery & Reinvestment Act Funds

- Total Funding Package: $787 Billion
- Federal Construction & O&M: up to $17.3 Billion
  - Construction, Renovation & O&M backlogs
  - At least $4.7 Billion targeted at increasing EERE
- Federal Fleet Vehicles: $300 Million

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OMB's ARRA Guidance

- Encourages use of energy saving performance contracts (ESPC) *and utility energy savings contracts (UESC) to maximize investments*
- Includes EPAct 2005 and EO 13423 requirements:
  - Energy Efficient Building
  - Sustainable Design and Construction
- Highlights resources available for help:
  - FEMP
  - GSA Office of High Performance Buildings
- http://www.recovery.gov/?=node/317

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FEMP Role In Project Assistance

Technical & procurement assistance for energy and water projects

- UESC Workshops
- Build partnerships
- Contracting expertise
- Technical review
- Process improvement

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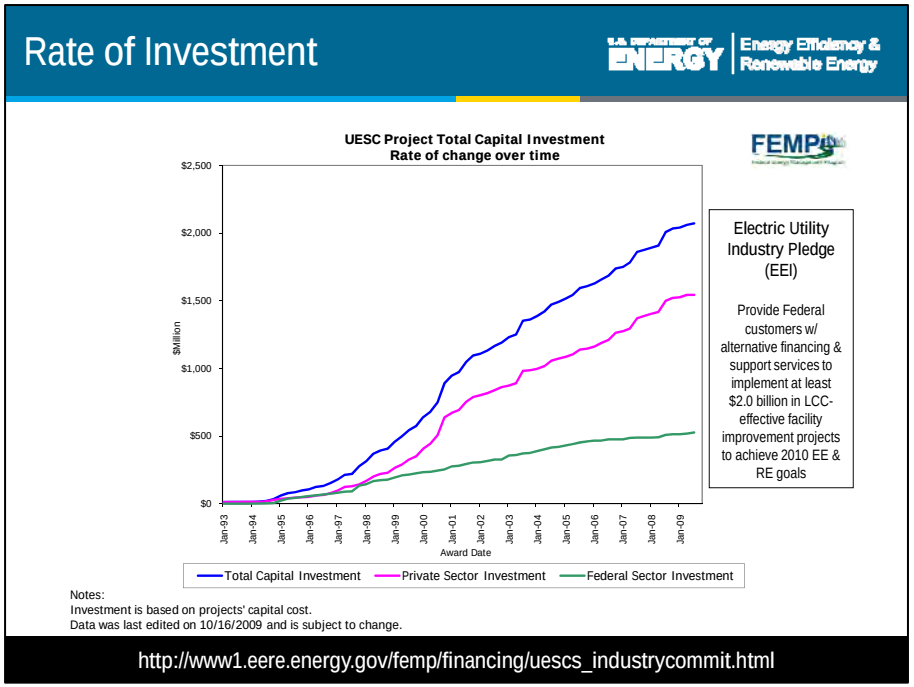
UESC Project Investment Information

In recent years, with considerable effort, federal agencies have made great progress toward achieving Federal Energy Management goals.

Building energy costs have decreased and petroleum usage in federal facilities is down.

Thanks to improvements in technology, increased use of innovative strategies for energy management and heightened awareness, we are well on our way! But we need to keep going.



Utility companies have played a significant role in ensuring Federal agencies have a partner to help them implement optimal projects. Since 1994, utilities have invested more than $1.8 billion in UESCs.

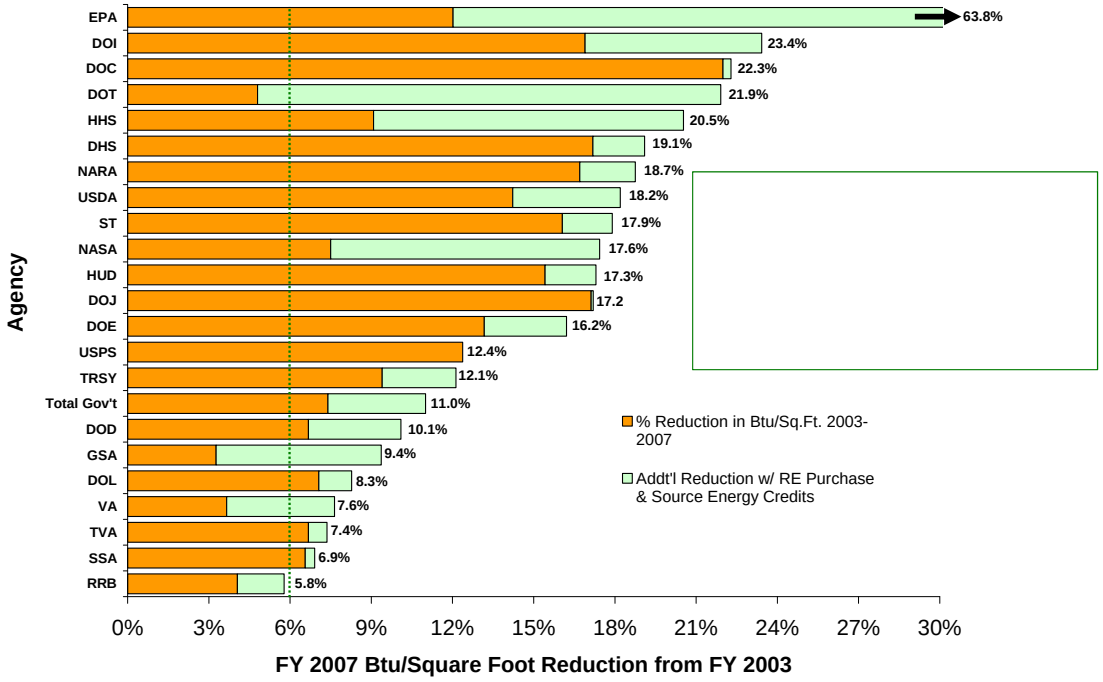
With a $2 billion commitment (by 2010) and renewed activities in conjunction with the Edison Electric Institute, the American Gas Association and the National Rural Electric Cooperation Association, Federal agencies know they can rely on stronger utility partnerships to help achieve their goals.

The Federal Energy Management Program (FEMP)

Why We Should Keep Going**

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Agency Energy Performance



Implementing energy efficiency projects through the use of utility energy service contracts is still the most cost effective way to accomplish improvements if you lack direct appropriations. Through these types of projects, federal facilities can: solve their infrastructure headaches while continuing to save energy, combat increasing energy prices, allow for dollars to stay in Operations and Maintenance (O&M) accounts to pay for mission related requirements, and fight pollution.

The Agency Energy Performance chart shown here indicates that agencies have enjoyed measurable success in meeting their goals, yet many still have quite a way to go. Especially in light of new mandates and increasing requirements.

Note: The use of Renewable Energy Credits to meet energy reduction goals will be phased out starting in 2008.

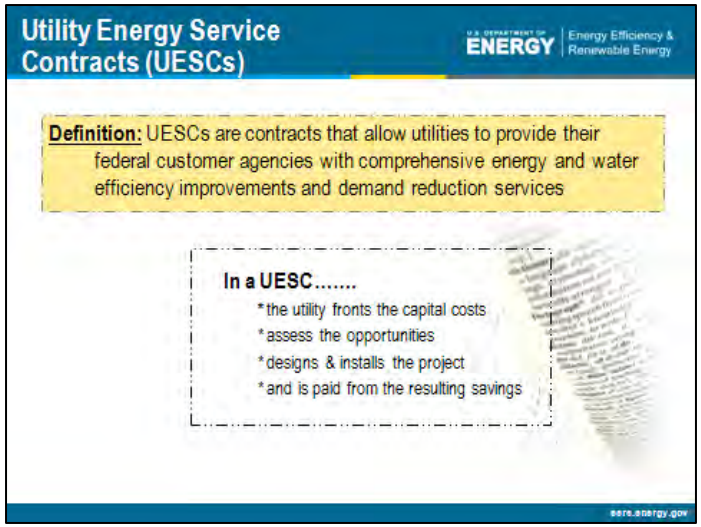
Utility Energy Services Contracts (UESC) Basics

Utility Energy
Services Contracts

Basics

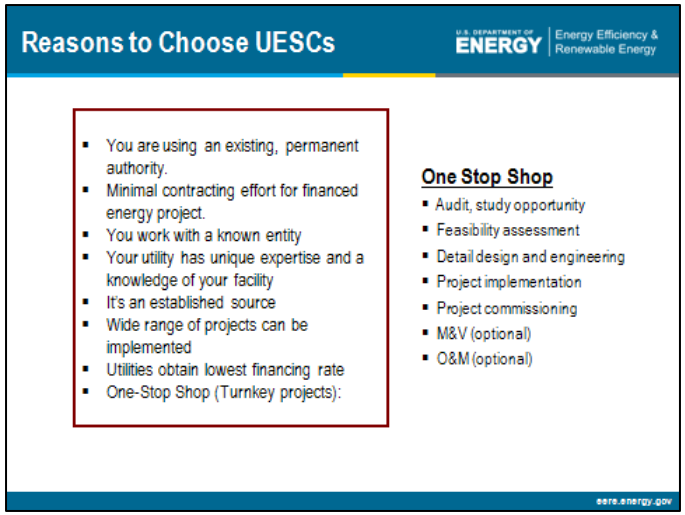
Utility Energy Services Contracts (UESC) Basics

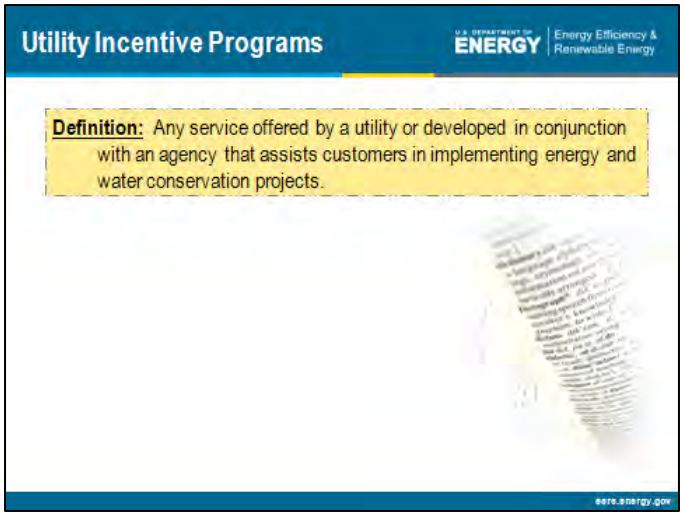
Reasons to Choose UESC



Contracting for financial energy projects can be very time consuming. Using the UESC vehicle can greatly reduce the time and efforts needed to implement energy, water and renewable energy projects. The utility offers a wide range of services based on the needs of the agency. They utility may provide project financing, assess the opportunities, and design and install the project. The agency may also opt to use it appropriations or a combination of appropriations and financing.

Agencies notice several advantages when utilizing the UESC mechanism to procure services. In a UESC, an agency works with their utility, a known entity. The utility has unique expertise and knowledge of the facility. Utilities are an established source that is motivated to provide quality service and retain their government customers. The partnership is beneficial to both the government and the utility! If a facility has more than one utility interested in providing a UESC, each should be given fair consideration. It is the agency's responsibility to define “fair consideration”, for an example see, the justification and approval in the GSA area wide guide. (Reference Enabling Documents for excerpt and link to GSA areawide guide)





Utility Energy Services Contracts (UESC) Basics

Utility Incentive Programs

This section is provided to give you an understanding of:

- The services available through the utility incentive programs.
- The definition of Utility Energy Service Contracts.
- The legislation that enables the utility financing programs.

Utility Incentive Programs range from simple rebates to full project implementation including financing, project management, and operations and maintenance. Federal agencies are eligible to use utility incentive programs. This workshop focuses on the implementation of energy efficiency projects through areawide contracts (AWCs), site specific contracts, basic ordering agreements (BOAs), or agency master agreements (AMAs). It is worthwhile for agencies to ask their utilities about energy services and incentive programs that are available.

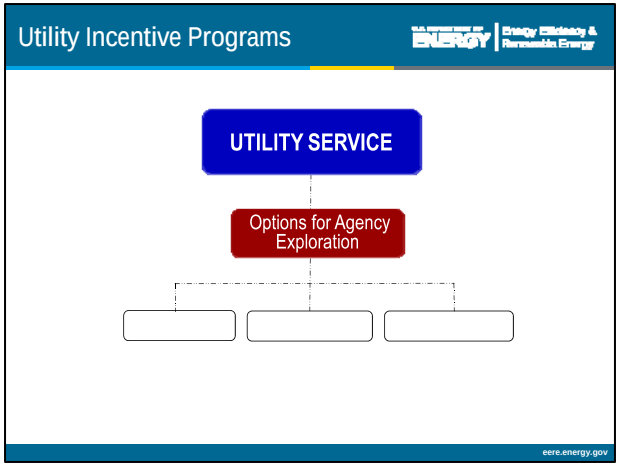
References for this section:
UESC Enabling Documents

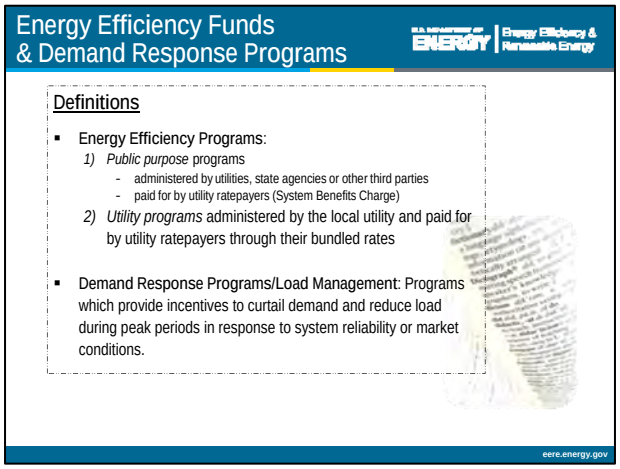
Energy efficiency funds and demand response programs

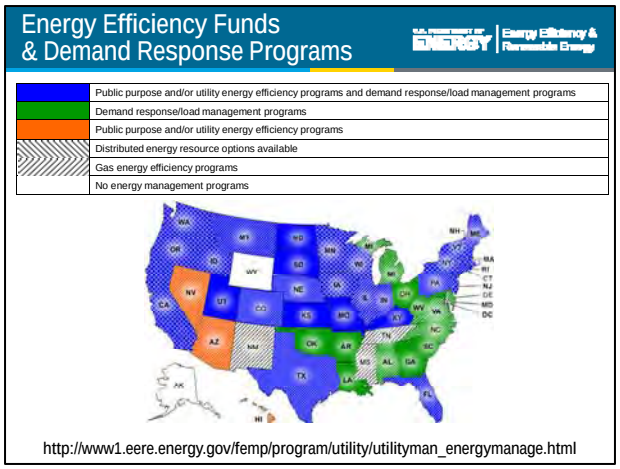
http://www1.eere.energy.gov/femp/program/utility/utilityman_energymanage.html

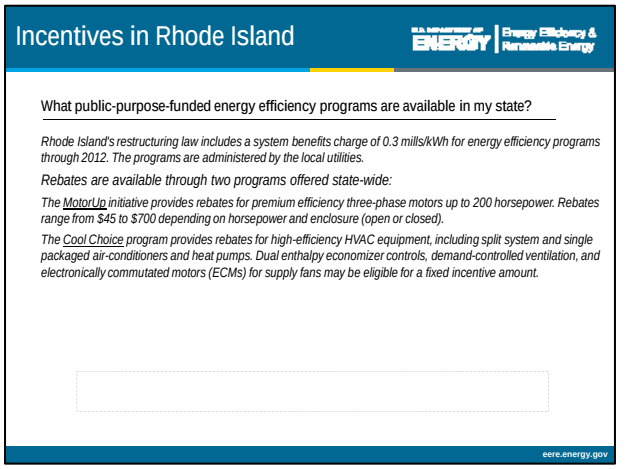
Database of State Incentives for Renewables & Efficiency

http://www.dsireusa.org









Utility Energy Services Contracts (UESC) Basics

Utility Energy Service Contracts (UESCs)

UESCs are specific contracts that allow utilities to provide federal agencies with comprehensive energy and water efficiency improvements and demand-reduction services. For meeting your advanced metering requirements, always consult with your utility partner as they have invaluable metering experience and expertise.

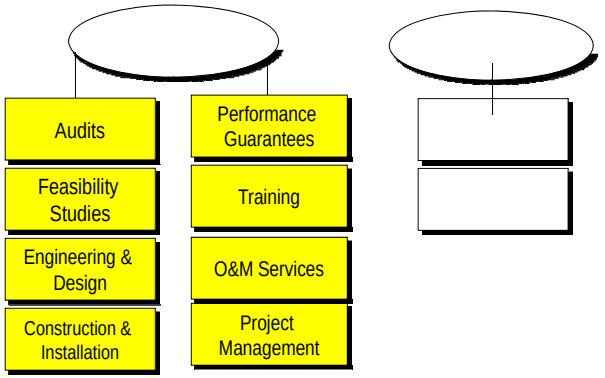
Utilities front the capital costs and are paid out of savings. These contracts allow utilities to prepare tailor-made packages of options for their federal customers. Availability of these custom-designed programs is an advantage of working with utilities. Other programs available to federal agencies are far more general and do not offer site-specific strategies.

Typical UESC Offerings:

- Audits
- Feasibility studies
- Engineering & design
- Construction & installation
- Performance guarantees
- Training
- O&M services
- Project management
- Rebates
- Financing

Typical UESC Offerings

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy



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Other Typical No Cost Utility Services

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Rebates/Incentives
- Rate analysis and load management assistance
- Technical assistance and/or design review
- Commissioning
- Electronic data transfer
- Metering
- Peak shaving
- Real time pricing
- Interruptible programs
- Renewable energy
- Power quality and reliability assistance
- Web access to utility account data

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Utility Energy Service Contracts (UESCs) (continued)

This type of contracting allows agencies great flexibility in developing energy conservation, water conservation, and renewable projects assisting agencies in meeting the goals of EPACT and Executive Orders 13423 and 13514.

Utilizing a UESC to procure services from your utility allows agencies to reallocate their utility budget dollars. The dollar amount in your utility budget does not change under a UESC.

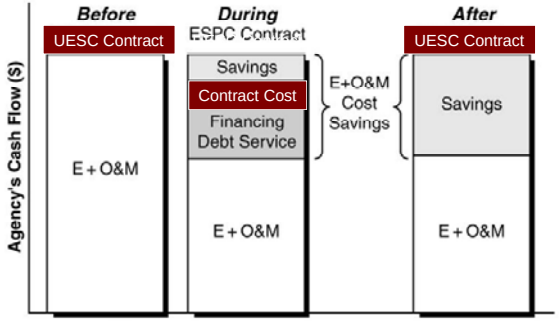
Not all utilities offer a UESC option or they may be relatively new to implementing this type of contracting resource. The contracting process for UESC is not rigid, however, there is legislation and guidance directed at its use. Other things to consider include your facility's relationship with your serving utility and contract term. The contract term for UESCs are limited, most go for ten years. Also, since this is a partnership, it is the most effective if a strong relationship or the potential for one exists.

Funds for Project Re-payment

U.S. Department of Energy | Energy Efficiency & Renewable Energy

Financed projects are paid from savings
No increase in government spending occurs

- ✓ Pay a lower utility bill
- ✓ Pay the contractor
- ✓ Avoid costs



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Considerations

U.S. Department of Energy | Energy Efficiency & Renewable Energy

- UESCs may not be available to all facilities
- Utility may be new to this type of contracting
- Contract process is not rigid
- Agency's relationship with utility
- Contract term

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Enabling Legislation for Utility Programs

This section outlines the legislative authorities that support contracting for utility services, along with regulations associated with procuring these services.

The procurement of both utility commodities (electric, gas and water) and utility services that include installation of energy-efficiency, water conservation, and renewable measures have a significant history of legislative backing.

References for this section:
UESC Enabling Documents

The Energy Policy Act of 1992 (P.L. 102-486)
Permanent authority for UESCs was established in EPACT 1992. EPACT contains provisions regarding energy management requirements, budget treatment for energy conservation measures, incentives for agencies, reporting requirements, new technology demonstrations, and agency surveys of energy-saving potential.

Prior to amendments enacted as part of EPACT, the National Energy Conservation Policy Act (NECPA) was the primary legislative authority directing agencies to improve energy management in their facilities and operations.

EPACT amended NECPA to include an additional energy management requirement for federal agencies. Section 543(b) of NECPA requires that not later than January 1, 2005, each agency shall, to the maximum extent practicable, install in federal buildings owned by the United States, energy and water conservation measures with payback periods of less than 10 years, as determined by using federal life-cycle costing methods and procedures. By definition, life-cycle cost effective, with respect to a measure, means a measure, the estimated savings of which exceed the estimated costs over the lifespan of the measure. However, this does not preclude the implementation of projects with payback periods of greater than 10 years.

Enabling Legislation for Utility Programs

Enabling Legislation for Utility Programs (continued)

The Energy Policy Act of 1992 (P.L. 102-486) (continued)
EPACT Section 152 Subtitle F - Federal Agency Energy Management, amends Sections 542 to 550, Part 3, of the NECPA. These sections have been codified as 42 USC 8256. Section 546, part (c), provides specific information as it relates to utility incentive programs. The five key elements of this section are highlighted below.

Agencies are authorized and encouraged to participate in programs to increase energy efficiency and for water conservation or the management of electricity demand conducted by gas, water, or electric utilities and generally available to customers of such utilities.

Each agency may accept any financial incentive, goods, or services generally available from any such utility, to increase energy efficiency or to conserve water or manage electricity demand.

Each agency is encouraged to enter into negotiations with electric, water, and gas utilities to design cost-effective demand management and conservation incentive programs to address the unique needs of facilities utilized by such agency.

If an agency satisfies the criteria that generally apply to other customers of a utility incentive program, such agency may not be denied collection of rebates or other incentives.

Agencies shall retain 50% of energy and water cost savings (except Department of Defense, DoD) from appropriated funds for additional energy projects including employee incentive programs.

Energy Policy Act of 1992

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Section 152(f) - Utility Incentive Programs

Agencies:

- Are authorized and encouraged to participate in utility programs generally available to customers
- May accept utility financial incentives, goods, and services generally available to customers
- Are encouraged to enter into negotiations with utilities to design cost effective programs to address unique needs of facilities used by agency

(Codified as 42 USC 8256, P.L. 102-486)

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Utility Energy Services Contracts (UESC) Basics

Enabling Legislation for Utility Programs (continued)

Regulations for Utility Financing Resources

The statutory authority for the General Services Administration (GSA) to acquire utility services (for periods up to 10 years) is authorized by section 201 of the Federal Property and Administrative Services Act of 1949 (40 U.S.C. 481). This Act has been codified in the Code of Federal Regulations, Title 48, Part 41 of the Federal Acquisition Regulations (FAR Part 41). See FAR Part 41 for more information regarding DoD and DOE authorities to acquire utility services.

Energy efficiency contracts with a utility are often done under an AWC. FAR Part 41 covers the use of areawide contracts (AWCs) for the purchase of all types of utility services. The areawide contract is between GSA and a utility service supplier to cover utility service needs of federal agencies within the franchise territory of the supplier. The basic scope of utility services includes electricity, natural or manufactured gas, water, sewerage, thermal energy, chilled water, steam, or hot water, or high temperature hot water. Acquisition of energy efficiency services provided through defined utility incentive programs is allowable since that acquisition does not conflict with the Service Contract Act of 1965.

10 USC 2911

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Energy Performance Goals and Plan for DoD

- Selection of energy conservation measures
  - Are readily available
  - Demonstrate an economic return on investment
  - Will achieve energy savings over the life-cycle of the equipment or system
- Produce or procure not less than 25% of the total quantity of electric energy it consumes within its facilities… from renewable energy resources…

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10 USC 2913

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Energy savings contracts and activities

- Encourages participation in gas or electric utility programs for the management of energy demand or for energy conservation
- Accept financial incentives, goods and services generally available from the utility

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Utility Energy Services Contracts (UESC) Basics

Enabling Legislation for Utility Programs (continued)

Amendment to Section 10 USC 2866

Energy Efficiency & Renewable Energy

Amendment to Section 10 USC 2866:
Water Conservation Authority

- Water cost savings realized – One-half of the savings shall be used for water conservation activities as designated by DoD; One-half of the savings to be used at the installation at which the savings were realized

48 CFR Part 41Acquisition of Utility Services

Energy Efficiency & Renewable Energy

- GSA authority to prescribe policies/methods governing the acquisition and supply of utility services for federal agencies & delegating authority to specific agencies to purchase utility services
- GSA authority to issue areawide contracts for utility services

Utility Service is defined as furnishing electricity, natural or manufactured gas, water, sewage, thermal energy, chilled water, steam, hot water, or high temperature hot water

http://www.eere.energy.gov/femp/financing_types.cfm

Utility Energy Services Contracts (UESC) Basics

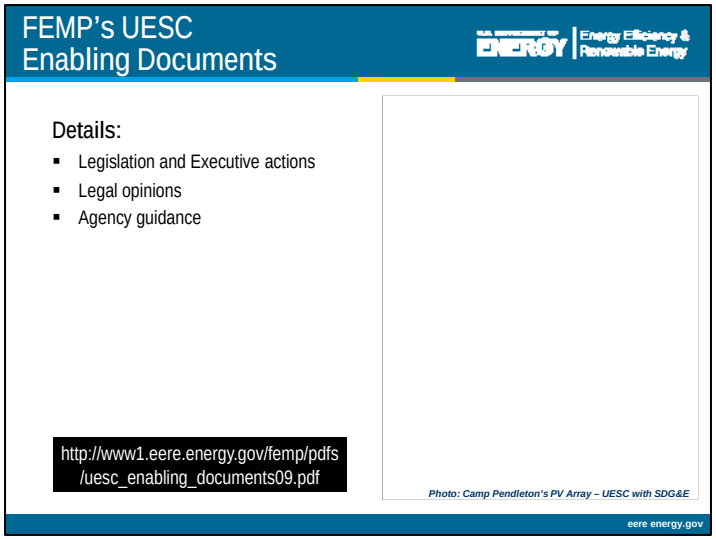
Enabling Legislation for Utility Programs (continued)

There are several key provisions in FAR Part 41 related to AWCs that should be remembered

1. Areawide contracts generally provide for ordering utility service at rates approved and/or established by a regulatory body and published in a tariff or rate schedule. However, agencies are permitted to negotiate other rates and terms and condition of service, but these may require the approval of the regulatory body.
2. The services that are acquired are for facilities located in the utility's franchise territory or service area.
3. The regulation was written with the assumption that the electric utility industry was a regulated entity, therefore adequate competition for services was not available and services were procured basically on a sole source basis. If services are available from more than one supplier, then competitive acquisition procedures apply. Before any competitive procurement can proceed, the Contracting Officer shall determine that competition would not be inconsistent with state law governing the provision of electric utility service, including state utility commission rulings and electric utility franchises or service territories established pursuant to state statute, state regulation, or state-approved territorial agreements.
4. Specific services at specific facilities are requested (executed) through delivery orders.

The Public Utilities Organization within GSA has the responsibility for maintaining and negotiating new or modified areawide contracts.

For a current listing, go to:
http://www.gsa.gov, then enter "Utility Areawide" in the search field



Specific questions regarding areawide contracts should be directed to either of the GSA staff listed below.

GSA Points of contact for AWC information

Linda Collins
Contracting Officer
(202) 708-9881
lindal.lcollins@gsa.gov

Ken Shutika
Deputy Director, Energy Center
(202) 260-9713
ken.shutika@gsa.gov

Utility Energy Services Contracts (UESC) Basics

Enabling Legislation for Utility Programs (continued)

FEMP's UESC Enabling Documents

Legal Opinions:

- DOE - Rebates - In the case of utility rebates, the rebates are essentially discounted prices for utility services and constitute refunds to the Federal Government. *...rebates can be issued directly to DOE.*
- DOE – Relationship of the Anti-Deficiency to Multi-Year Contracts Under the Utility Incentive Program... - no need to obligate total estimated cost of contract, but only necessary to cover annual costs under the contract

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FEMP's UESC Enabling Documents

Legal Opinions (continued):

- GSA - Authority for Extended Utility Agreements – authorized to enter contracts for terms greater than ten years
- GSA - Exception From The Competition-In-Contracting Act's Full and Open Competition - Section 152's plain language contains an express authorization for an agency to participate in DSM contracts... This language appears to provide express authority for an agency to directly approach a utility concerning DSM services,... without the use of full and open competition

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FEMP's UESC Enabling Documents

Agency Guidance

- Department of Air Force – Energy Savings Performance and Utility service contracts Policy, Major General Del Eulberg, October 30, 2007
  - Obtain MAJCOM approval prior to issuing Notice of Intent
  - Submit to AFCESA for technical assessment
  - Include buy out clauses in all candidate projects
  - Program robust portfolios of energy conservation projects
- Department of Army – UESC Guidance, Colonel Charles Guta & Joseph Plunkett, March 23, 2004
  - Encourages all installation to expand, promote and accelerate the use of UESC to meet the Army energy reduction goals

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The agency guidance and legal opinions included in the Enabling Documents have been essential in clarifying and interpreting the authority for utility contracts. For instance, most agencies' contracting and legal staff first question the legality of the UESC vehicle, and their next question is regarding the ability to contract with the utility on a sole source basis. Therefore, the very first Alternative Financing Guidance Memorandum (AFGM), issued by the Federal Utility Partnership Working Group addressed that very issue. AFGMs are approved by the Interagency Energy Task Force. The AFGMs, along with the other documents offered in the Utility Energy Services Contracts: Enabling Documents, have played a major role in helping UESCs move to award quickly.

Federal agencies may accept rebates which essentially constitute refunds to the Federal government. It is suggested that the rebate be disbursed as follows: 1) Utility shall apply the rebate to the next payment due to reduce capital cost of the project; 2) where allowable by the Public Utility Commission (PUC), Government may assign rebate to a third party to reduce the construction cost and thereby reducing the total amount financed; and 3) rebate may be accepted as a credit on the utility bill.

FEMP's UESC Enabling Documents

Alternative Finance Guidance Memorandums

- AFGM 1 – Sole Source Justification
  - Ample justification exists for Federal agencies to enter into sole-source agreements with their franchised and/or serving utilities for any financial incentives, goods and services...
- AFGM 4 – Federal Fund Sources to be Used to Pay for Multi-Year Contracts Under the Utility Incentive Program
  - Clarifies that the choice of fund sources is not constrained by statute. Contracting Officers of each agency have discretion to use any funds deemed appropriate to pay for utility services, to pay for Multi-Year Contracts under the Utility Incentive Program

Developed by FUPWG and approved by the IATF

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Utility Energy Services Contracts (UESC) Basics

DVD On-line

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

www1.eere.energy.gov/femp/financing/uescs_nih.html

eere.energy.gov

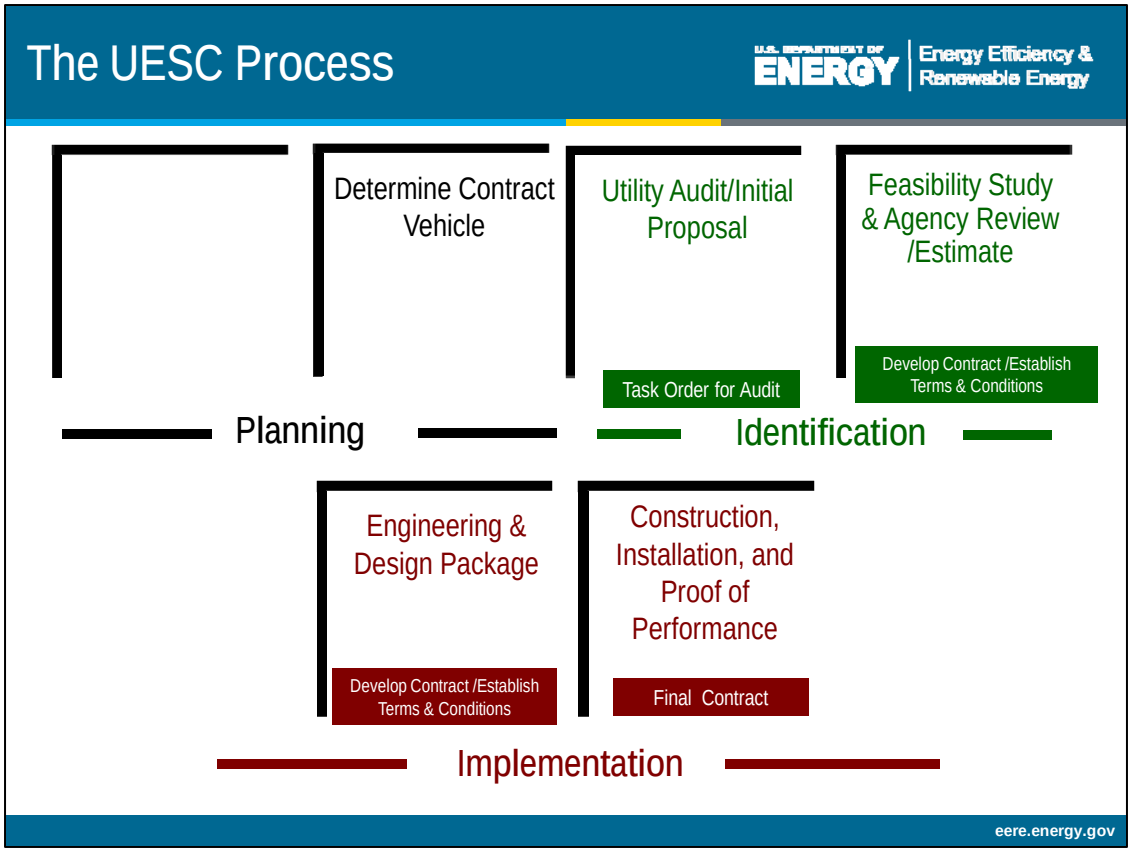
The Planning Phase

Utility Energy Services Contracts

Planning Phase

The Planning Phase

Educate The Acquisition Team



There is more than one route to a utility financed project and there is flexibility within the process. What we are covering is the most common route, however, be aware that your process can and may differ.

The Planning Phase

Educate The Acquisition Team (continued)

The first step to a successful project is pulling together the right team. Assemble and brief a team of individuals who represent all facets of your agency and have the range of skills and knowledge required to successfully implement your project. The team members are involved throughout the procurement process, providing specific expertise, as required, addressing procurement issues and developing customized procurement documents.

TEAM PLAYERS ♦ TEAM ISSUES ♦ DEVELOP STRATEGY ♦ ENLIST SUPPORT

Planning Phase

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Educate Acquisition Team

- DOE FEMP Sponsored Resources
  - UESC Project Workshops
  - UESC Webpage
    http://www1.eere.energy.gov/femp/financing/uescs.html
  - UESC Enabling Documents & Training DVD
  - FEMP supported conference calls & web-training

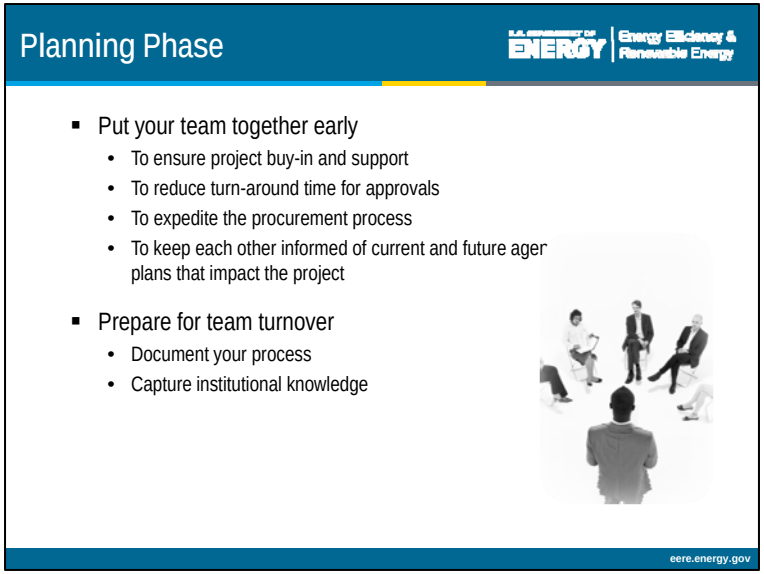
eere.energy.gov

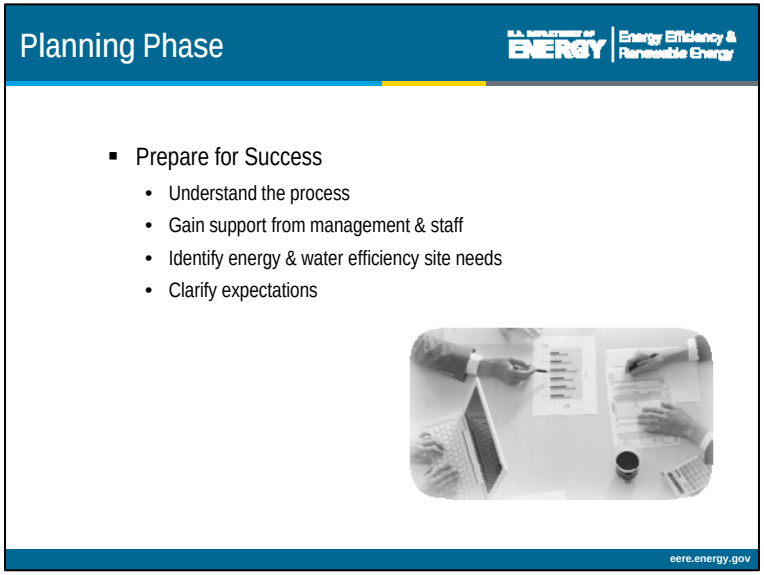
This section is provided to give you an understanding of:

- Who to include on your acquisition team.
- Issues the team should address.
- The strategy for proceeding with your project.

The Planning Phase

Educate The Acquisition Team (continued)





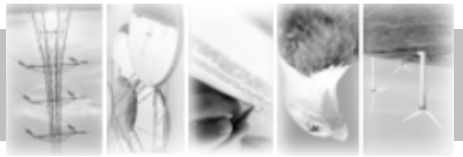
The first step to a successful project is pulling together the right team. Assemble and brief a team of individuals who represent all facets of your agency and have the range of skills and knowledge required to successfully implement your project. The team members are involved throughout the procurement process, providing specific expertise, as required, addressing procurement issues and developing customized procurement documents.

There are many advantages to bringing together the acquisition team members early in the process:

- Team members are able to support your project from the beginning, which can reduce the turn-around time for approvals and expedite the procurement process.
- Team members and other stakeholders can keep each other informed of current and future agency plans and activities that may impact the project.
- Team members identify and address their priority needs.

Even with the best of teams, be prepared for turnover. Identify a system for documenting your process; establish a Project Documentation Plan that captures institutional knowledge. Contracting Officer must maintain official, detailed contract record and basis for all decisions should be clearly articulated. When you consider that the contract term on some of these projects can extend beyond ten years, it is inevitable that you are going to have replacement personnel.

The Planning Phase



Educate The Acquisition Team – Define Team Roles

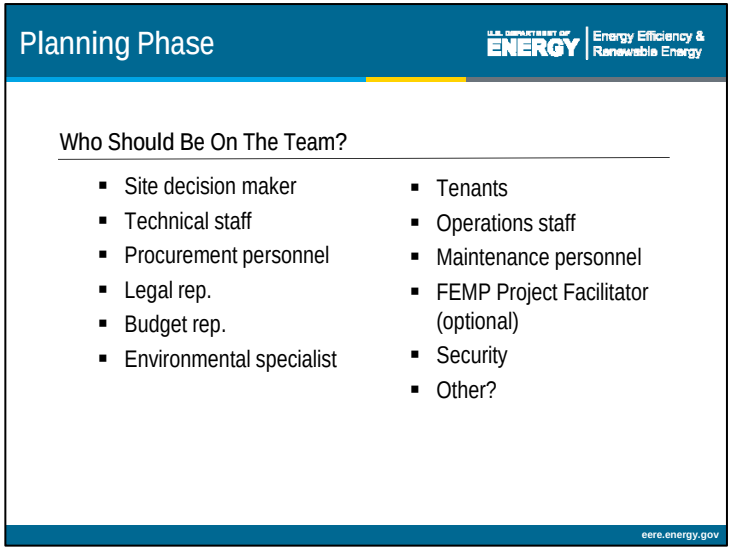
Site Decision Maker
Be sure to include your upper management and decision makers in the planning process. They are instrumental in clearing the way during the course of your project.

Technical
The technical team members, including facility engineers and building operators, may have been involved with the project from concept generation. Over time, they may have developed technical requirements for the installation of energy efficient equipment. Their knowledge of building systems is essential for developing the project, including the performance requirements in the statement of work, and for evaluating the proposed systems.

Procurement
The procurement staff ensures that all contractual elements adhere to the appropriate regulations while addressing agency needs.

Legal
Early involvement of the legal staff helps to expedite the project should a review and comment period be required. .

The roles of each team member should be defined to take advantage of their expertise. This a sample list of team members and their roles.



Identify, encourage and support your champions!

The Planning Phase

Educate The Acquisition Team – Define Team Roles (continued)

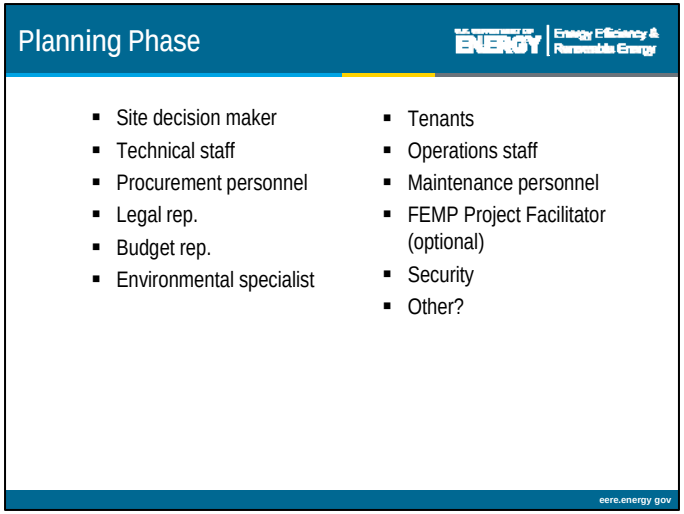
Budget
The budget staff needs to set up an accounting vehicle to allow for payment through utility bill. Crucial to this process is the budget staff's clear understanding that although utility bills may decrease after project installation, the dollars in the utility budget remain consistent

Environmental
The environmental team in your agency is best prepared to advise you on any environmental issues and reporting requirements.

Tenants
Although tenants are not necessarily involved in all the decisions and meetings necessary to your project, including a tenant representative in the process is important. A well-informed tenant is more likely to be satisfied with the proposed retrofits and to be cooperative throughout the contract term.

Operation Staff/Maintenance Personnel
If your organization transfers the actual administration of the contract to another organization within your agency, the administering organization should be included in the planning stages of the project. This ensures that they are fully aware of the terms and conditions of the contract.

The roles of each team member should be defined to take advantage of their expertise. This a sample list of team members and their roles.



You need a Contract Champion!

Educate The Acquisition Team – Define Team Roles (continued)

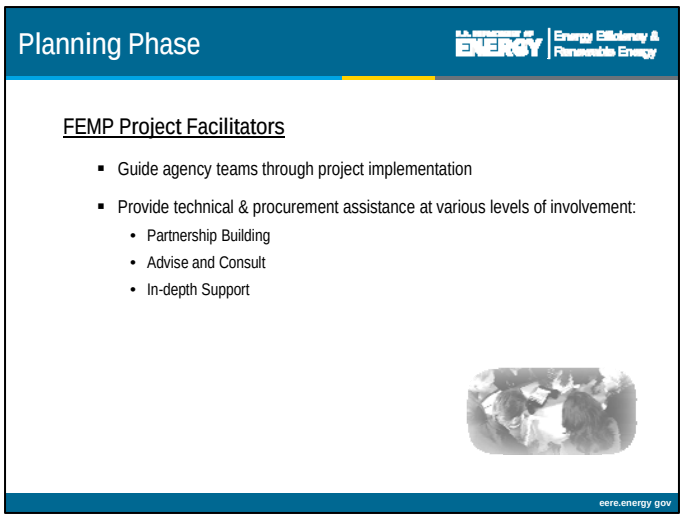
FEMP Project Facilitator

FEMP Services have been developed to assist federal agencies in achieving greater energy efficiency, water conservation, and use of renewable energy in federal facilities through the use of privately-financed mechanisms. FEMP can be a one-stop shop for any federal agency desiring technical and procurement assistance in implement UESC projects. FEMP has developed a sustainable core competency from resources including DOE Headquarters FEMP staff, Regional Offices, DOE laboratories, and DOE Operations Offices to meet any agency's energy and water conservation needs. Services provided by a Project Facilitator (PF), such as partnership-building, advice and consulting, and in-depth project support, are available on a cost-reimbursable basis. The PF then becomes a committed member of the project implementation team.

FEMP supports federal agencies using simple Interagency Agreements (IAAs). An IAA between DOE and your agency may be required to reimburse DOE/FEMP for the level of assistance provided in these services. An IAA consists of a standard form, a work statement describing the services to be provided to the agency by FEMP, and provides accounting and payment information. Your agency determines the level of assistance required to implement the project.

Support services can be tailored to meet agency needs, and are based on the estimated level of effort and FEMP Services hourly rate for the requested tasks. A blanket IAA for your agency may already be in place. To find out more about taking advantage of FEMP services, please contact your DOE Regional Office (see page ii for contact information).

It is important to keep others informed of the pending project, even if they are not part of the acquisition team.



The Planning Phase

Educate The Acquisition Team – Address Acquisition Team Issues

Acquisition Team Issues
(Planning Phase)

Budget and Financial Issues

- Project payments come from "avoided energy costs"
- Clarify the project payment funding source
- Clarify the invoice approval & payment process

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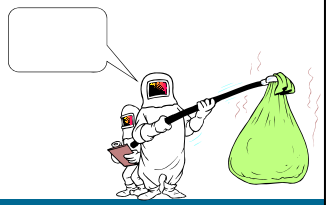
Environmental Protection Requirements

- Projects must comply with National Environmental Policy Act (NEPA)
- Detailed disposal requirements statement for hazardous materials related to the project are essential



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The team must address:
- budget and financial concerns
- environmental constraints

Other relevant issues might include:
- conflict with pending or ongoing construction projects
- changes in facility usage
- unique facility issues
- pending changes in facility O&M mission changes
- leases/contracts already in place

Budget and Financial Concerns

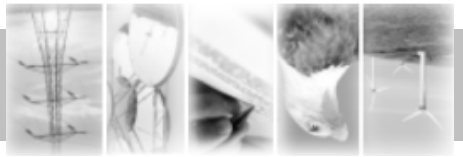
The budget staff should establish an accounting system to allow for project payments. The proposed payment schedule is specified in the final contract. In developing accounting procedures, you may want to look at the potential impacts on O&M budgets.

Environmental Protection Requirements

The acquisition team is likely to have to address environmental issues and develop mitigation strategies during the utility contracting process. The team also should address the possible need for documentation in compliance with the National Environmental Policy Act (NEPA).

If the team anticipates handling hazardous materials, develop a detailed disposal requirements statement that is relevant to the project. The solicitation should provide the procedures and responsibilities for both the contracting utility and the federal government for handling and disposing of hazardous materials in accordance with existing federal, state, and local laws and regulations.

The Planning Phase



Educate The Acquisition Team – Address Acquisition Team Issues (continued)

Potential Conflicts and Unique Issues

Be aware of energy projects, repairs, or renovations that may be planned or programmed for your agency or facility. For example, if you have a multiple building project site, you may want to exclude buildings designated for repair or renovation. These building renovations could potentially disrupt the installation of ECMs, include proposed ECMs, or impact savings projections.

- Near-Term Mission Changes. Mission changes can have a significant impact on your energy efficiency project.

- Changes in Facility Usage. Changes in facility usage could potentially disrupt your project. For instance, an installation planned for closure in five years is not a good candidate for a 10-year utility contract.

- Unique Facility Issues. Restricted access, special environmental conditions, and other elements distinct to your facility must be taken into consideration

Pending Changes in Facility Operations and Maintenance (O&M)

Facility O&M contracts may impact your project. Your facility may be maintained by in-house staff, contracted maintenance services, or a combination of both. In a typical arrangement under a utility contract, the utility is responsible for designing, financing, installing, and maintaining retrofit equipment. The utility is also typically responsible for training in-house staff in O&M procedures to ensure proper maintenance beyond the term of the project. The utility is responsible for coordinating its O&M work (per contracting requirements) with existing maintenance staff or contracted O&M personnel.

Personnel Issues

Energy Efficiency & Renewable Energy

Acquisition plans should consider potential impacts to staff:

- Operations & Maintenance
- Planning & Engineering
- Budget & Accounting

ALWAYS INCLUDE STAFF TRAINING!

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Potential Conflicts & Unique Issues

Energy Efficiency & Renewable Energy

- Consider potential conflicts:
  - Related to mission
  - Changes to facility use
- Address unique facility issues:
  - Facility specific requirements (as for labs, libraries, etc.)
  - Tenant operations
  - Restricted access

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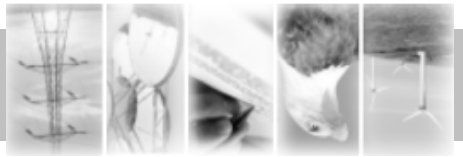


Educate The Acquisition Team – Develop an Acquisition Strategy

The team's acquisition strategy depends largely on the information available on the targeted facilities and the amount of control that the agency wants to have over the project. Depending on your comfort level, the team may choose to allow the utility to select the technologies most appropriate for your facilities. You also have the option to provide formal directives on both the technologies selected and the methodology used to install the ECMs and, if you choose, measure the savings.

The challenge of the acquisition strategy is to put together enough information to provide a clear description of the problem that must be addressed, without limiting the creative opportunities available for solving the problem.

Developing the acquisition strategy requires you to ask and answer the following questions:

- What is the appropriate scope of work?
- What technologies should be required?
- What is the maximum contract term your agency is willing to live with?

A key element in implementing a utility financed project, or any other energy efficiency project, is to conduct a preliminary assessment of the energy management needs and priorities for the specific agency or facility. This information forms the basis of the overall project definition and strategy for implementing the project.

Acquisition Strategy & Project Considerations

(Planning Phase)

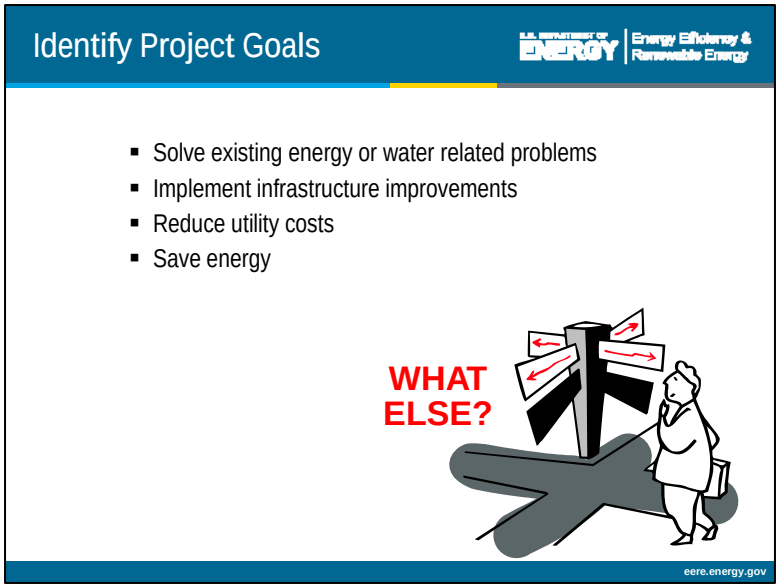
The Planning Phase

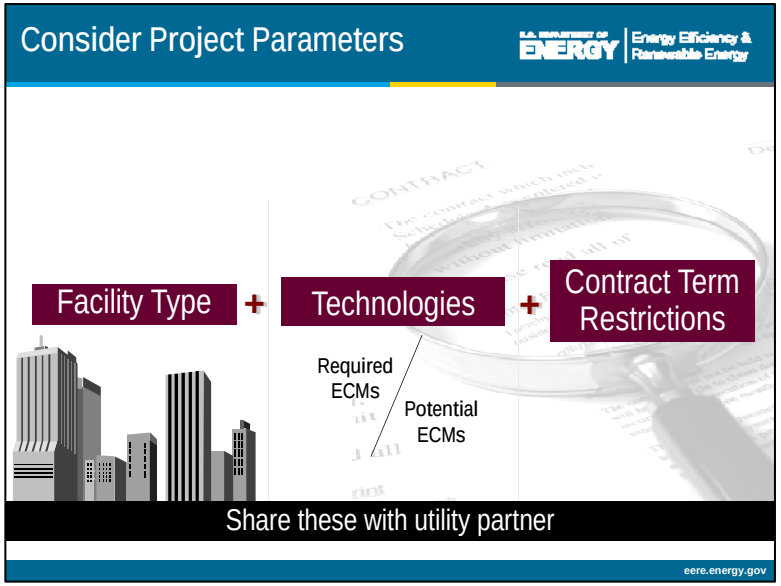
Educate The Acquisition Team – Identify The Project Goal

Implementing an energy efficiency project can be a time consuming undertaking. It is important to have a realistic idea of exactly what you are trying to accomplish at your facility. Decide what your goal is before you continue. Is it your goal to reduce energy use, improve your infrastructure, or make capital improvements? Remember, your project goal may be a combination of these or something completely different. The important thing is to know what you expect to accomplish before you get too involved in the process.

Determining Project Parameters

Typically, federal sites receive one billing statement from their utility company (even those that consist of a group of facilities). In some cases, two or more utility companies could serve a site with a large number of facilities if the land area of the site spans the service areas of the utilities or a specific site receives electrical service at multiple points. The ability of the federal government to procure electrical services is typically done via an areawide contract. Under areawide contracts, utility service is available to all federal facilities within the franchised or service territory of the utility. Therefore, agencies with multiple sites within the utility service area, or a group of agencies within the same utility service area can receive the same utility goods and services.



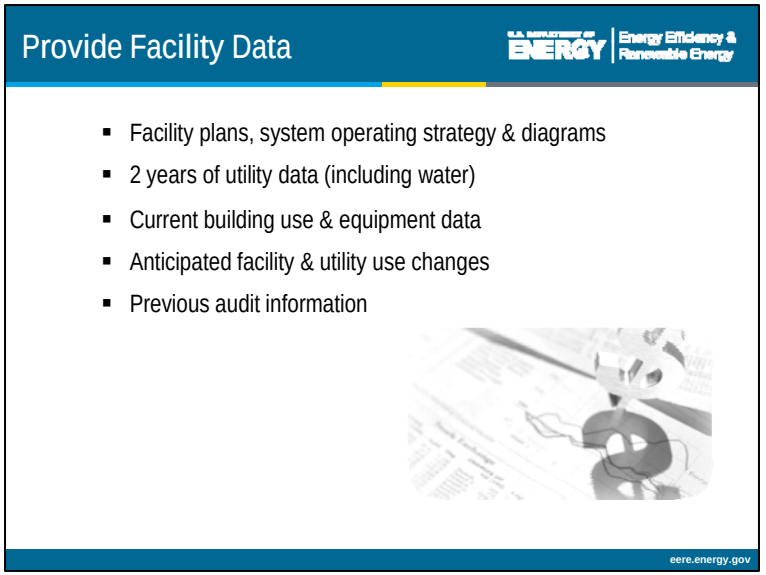


Educate The Acquisition Team –
Collect Facility Data: Historical Facility Data

How your facility has consumed energy in the past is often indicative of how it will consume energy in the future. Collect historical information from utility billing data and meter reading data.

If accurate records have not been maintained by your organization, the utility company can provide comprehensive energy consumption data. Utility companies usually have detailed billing data available, such as electrical demand by 15-minute increments.
It is helpful to collect the following types of historical facility data:

Energy Use Data
Collect information on all energy sources purchased by your agency/facility or generated by other sources. For example, if you get steam from a central government generating plant, obtain data on consumption and demand for that steam as well as for electricity, fuel oil, natural gas, and other energy sources that you purchase.



Data collection can be simplified if you divide it into categories:

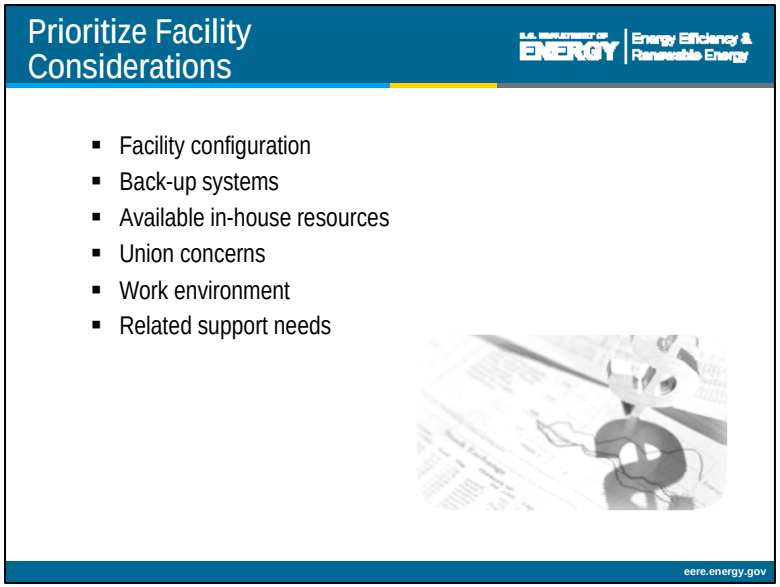
1. Collect historical utility data and past audit information.
2. Collect current building and equipment data.
3. Collect data on anticipated facility and utility changes.

Educate The Acquisition Team –
Collect Facility Data: Historical Facility Data (continued)

Energy Cost Information
Obtain the most recent cost and rate schedules for the energy consumed and research the availability of alternative rate structures. Obtain actual cost and rate structure data for as many years as possible (two years is the recommended minimum). Also, ask about alternative rate structures, such as interruptible gas or electric service and opportunities to be reimbursed for reducing your electricity consumption at your utility's request.

Previous Audit Information
Save time by using information from previous facility audits. Use this information only if the current building operating conditions (i.e., occupancy, schedule of use) are similar to how the building was used in the previous audit. (Update the audit using today's utility rates.)

Utility Incentives
Ensure the audit report takes into account any incentives the utility offers that are available to the federal customer. Incentives can have a significant impact on the savings realized by implementing the recommended measures. Request that the audit report include any necessary applications, or other pertinent materials, required in order to obtain the incentives.



Educate The Acquisition Team –
Collect Facility Data: Current Building and Equipment Data

Building and equipment data should identify what is physically present now as well as anticipated changes in facility operations, energy-using equipment, and space conditions. Collect data on the following:

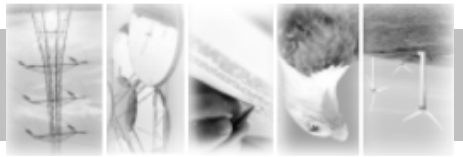
Architectural and Structural Specifications
Supplement the audit data to include a description of building materials and insulation. Clearly describe the construction and thickness of walls, floors, ceilings, slabs, and roof. Be sure to include descriptions, types, number, and locations of windows, doors, and skylights.

HVAC, Lighting and Mechanical Equipment
Update and supplement existing audit information to include all major systems that consume energy. Catalogue information on mechanical equipment within the facility, including HVAC systems, lighting systems, chillers, boilers, solar systems, etc. Include design schedules, nameplate data, equipment cut sheets, and control schemes of HVAC systems. Also include the operating conditions for all equipment; a simple listing of equipment is not sufficient.

Space Conditions
Provide a thorough description of the space and occupancy patterns for each building. Include square footage of each building and describe how the space is used (i.e., office, warehouse, dormitory, classroom, etc.). Describe the mission parameters of the building and include hours of operation for personnel and equipment. Identify special conditions that must be specified in the contract delivery orders, such as temperature and relative humidity requirements for laboratories, hospitals, and cold storage areas

Finally, collect information on upcoming mission changes for the facility that may impact occupancy patterns or energy consumption. Specify upcoming equipment additions, deletions, or changes and provide information on occupancy density, and facility expansion, remodeling, or partial demolition.

The Planning Phase



Educate The Acquisition Team – Prioritize Facility Requirements

Begin by listing all of the needs and requirements of the targeted facilities. When preparing your list, take into consideration the following factors:

Specific Facility Needs
Determine your equipment or operational needs and potential energy conservation measures (ECMs) that would provide the greatest return on investment, improve health and safety, or increase the comfort level in your facility. ECMs might include lighting retrofits, HVAC system upgrades, fuel switching, or chlorofluorocarbon (CFC) phase-out.

Facility Condition
The age and condition of your facility can be important factors in project identification. Consider issues such as air quality, ventilation, and heating when preparing your list of needs and requirements.

Impacting Issues
Also consider environmental constraints, possible conflicts with existing O&M contracts, pending mission changes, facility closure or expansion, and unique facility issues such as restricted access.

Once you have a comprehensive list, the next task is to prioritize the requirements in order of importance.

Select Potential ECMs

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- HVAC equipment, controls, & distribution
- Lighting
- Energy management and control systems
- Advanced metering
- Renewable energy systems
- Commissioning
- Water heating systems (solar hot water where feasible per EISA)

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Educate The Acquisition Team – Prioritize Facility Requirements (continued)

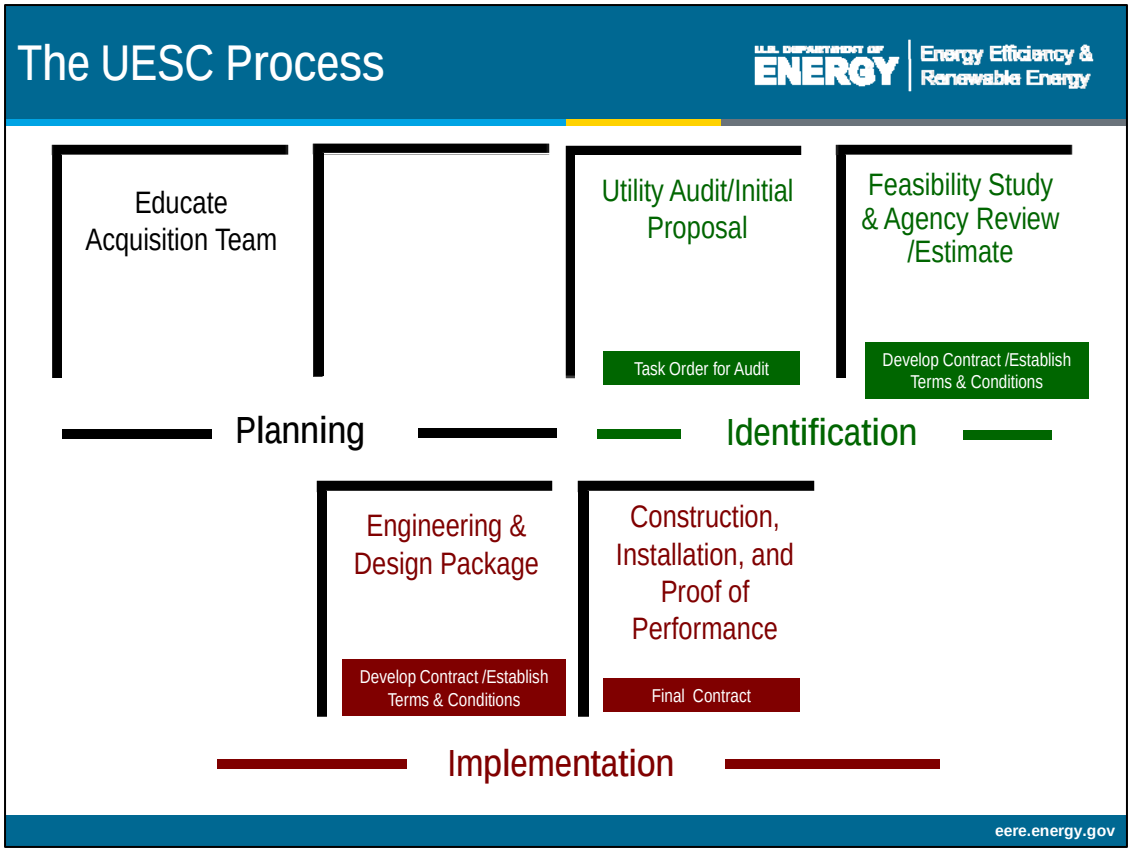
Select Potential Energy Conservation Measures (ECMs)
It is important to view every aspect of your facility as an opportunity to improve energy efficiency or reduce energy costs. Potential ECMs are organized into seven broad categories:

- Building Envelope
- HVAC Equipment
- HVAC Distribution and Water Heating System
- Lighting and Power System
- Types of Energy Management and Control Systems
- Types of Heat Reclaim Systems
- Types of Renewable Energy Systems.
- Combined heat and power, distributed energy resources.

Keep in mind that nothing is written in stone. You are simply selecting the ECMs that you would like to evaluate further. Be certain to consider the benefits of commissioning and training as you move forward.

The Planning Phase

Determine Contract Vehicle



Agencies may choose to pursue a project using one contract that establishes general and site-specific terms and conditions. Or they may choose an option that establishes general terms and conditions in the overarching contract with delivery orders that allow for negotiation of site specific terms and conditions

The Planning Phase

Determine Contract Vehicle (continued)

There are several types of utility financing vehicles currently available to the federal government. Agencies can choose to utilize areawide contracts (the most common method to access services), site-specific contracts, agency specific master agreements (based on model agreements already in place), and basic ordering agreements.

UESC Vehicles

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- Areawide Contract (AWC)
  - Task order placed under the AWC to establish terms & conditions for energy management services
- Separate Contract (Model Agreement)
- Basic Ordering Agreement (BOA)

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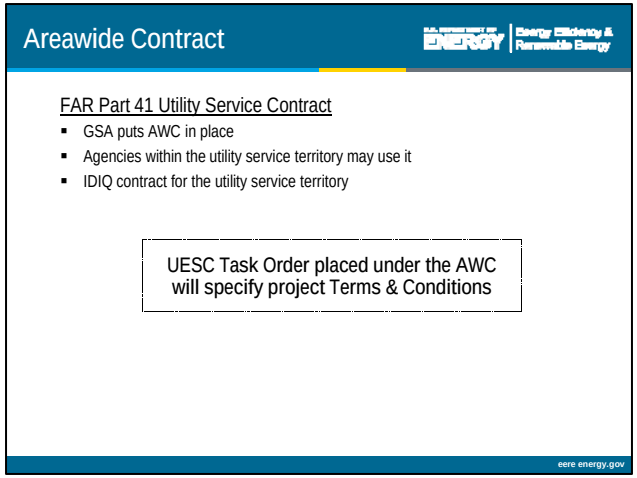
References for this section:
GSA Utility Areawide Guide
UESC Sources of FEMP Support

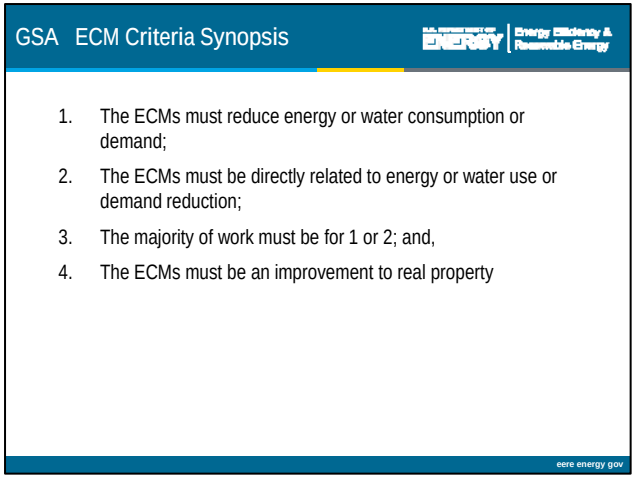
This section is provided to give you an understanding of the financing resources available through utilities.

The Planning Phase

Determine Contract Vehicle (continued)

Areawide Contracts (AWC)
Typically, contracting with a utility is done under an areawide contract. The areawide contract is between the General Services Administration (GSA) and a utility service supplier to cover utility service needs of federal agencies within the franchise territory of the supplier. The basic scope of utility services includes electricity, natural or manufactured gas, water, sewerage, thermal energy, chilled water, steam, or hot water, or high temperature hot water.

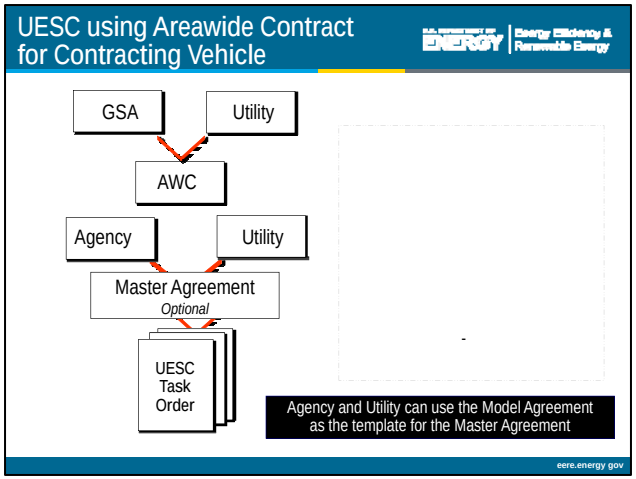




GSA is the only agency authorized to sign an AWC, but once an AWC is signed, any agency in the utility service territory can use it by placing a delivery order under it. Agencies place authorizations under an AWC that detail specific project terms and conditions. GSA has delegated authority to enter into utility service contracts not exceeding en years to DOD,DOE and for connection charges only to the Department of Veterans Affairs.

AWCs have been in existence for over 40 years, however, prior to October 1995 they did not include special authorization for energy management or DSM services. Incorporating this special authorization has led to a dramatic increase in the availability of AWCs for DSM service. To date, there are over 100 AWCs in place that incorporate DSM services.

The Public Service Company of New Mexico (PNM) was the first to include the authorization for DSM. PNM has used the authorization under the AWC for a comprehensive project that includes water conservation, renewable energy, and energy efficiency measures at White Sands Missile Range.



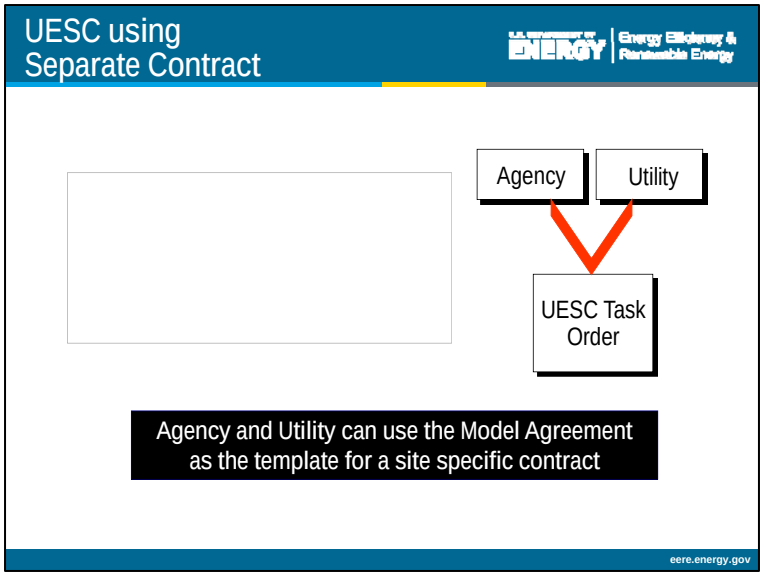
The Planning Phase

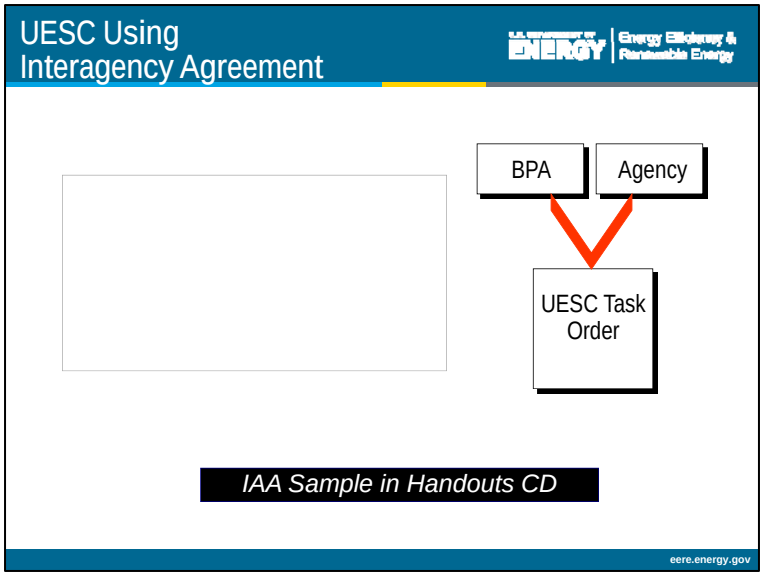
Determine Contract Vehicle (continued)

Site-Specific Contracts

Site-specific contracts or separate contracts, are agreements between a utility and an agency for work at a designated site. These contracts, though time intensive, have been popular in the recent past. Unlike the other agreements, the terms and conditions are not already in place. [F AR Part 41.205 Separate Contracts]

The US Army utilized a site-specific agreement for a large energy-saving project at Fort Lewis in Washington state. The project involved the cooperation of three partners: the U.S. Army Forces Command/Fort Lewis, the Tacoma Public Utilities, and the Bonneville Power Administration.





Determine Contract Vehicle (continued)

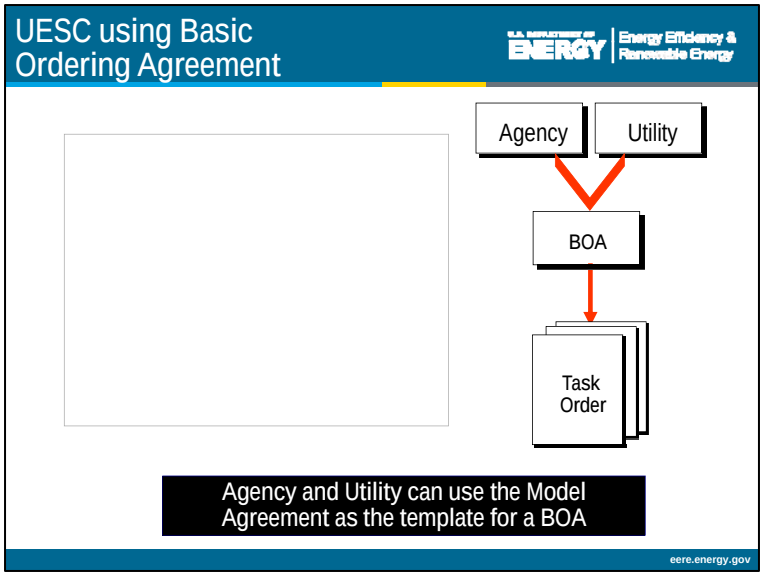
Basic Ordering Agreements (BOAs)

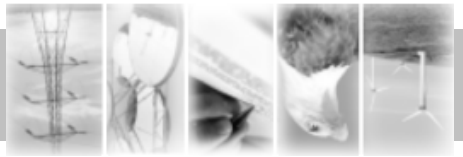
BOAs are between any agency and a utility. The GSA can put these agreements in place for all agencies, or agencies can place their own BOAs. Similar to AWCs, the procedure for using BOAs is to place delivery orders under them that detail the needs of the specific site.

A BOA is not a contract, nor does it imply that the government is bound to place a delivery order with the utility or be used to restrict competition. Regulations regarding BOAs are set forth in section 16.703 of Title 48 of the CFR. A BOA is a written instrument of understanding, negotiated between an agency and the utility with the following features:

- Description of the method for determining prices to be paid for any goods or services ordered.
- Provision of delivery terms and conditions or specifics of how they will be determined.
- List of which government activities are authorized to issue orders under the agreement.
- Specifications as to the point at which an order placed under the agreement becomes a binding contract.
- Indications of how disputes are handled.
- Provisions on payment procedures that apply to the orders.

Each BOA is reviewed on an annual basis before the anniversary of its effective date and revised if required under any new regulations that have been issued. It may need to be reviewed prior to the annual review due to mandatory statutory requirements. Only the BOA can be modified, not orders issued under it. Any BOA that is modified does not retroactively affect any orders previously issued under it.





Determine Contract Vehicle (continued)

Agency Master Agreements (AMAs)

AMAs are intended for use between an agency and its utility. This agreement contains terms and conditions specific to the agency. The primary benefit of this type of agreement is its flexibility of use. Master agreements can be attached to existing agreements or used as a stand-alone contract. If an agency decides to issue a master agreement, both DoD and DoE have developed model agreements for use as guidance.
http://www.eere.energy.gov/femp/financing/uescs_industry commit.cfm

EEI/DoD Model Agreement

In April of 1997 the Edison Electric Institute (EEI) and the Department of Defense endorsed a model agreement for the use of DoD installations and EEI member companies in developing contracts for energy conservation services provided by the utility companies. The objective of the model was to expedite the execution of such contracts through the provision of a template containing approved, must-include clauses which both parties felt were essential -- approximately 80% of the ultimate contract. The intent was for the contracting officer at an installation and the serving utility company to use the template as a base into which they would incorporate the necessary site-specific details of their specific situation.

The model was developed by technical and contract experts from the four services (Army, Navy, Air Force, and Marines), FEMP and utility representatives interested in providing energy efficiency improvement services to their DoD customers. It was based on successful BOAs and other contract vehicles that were proven to be mutually beneficial to the installations and companies.

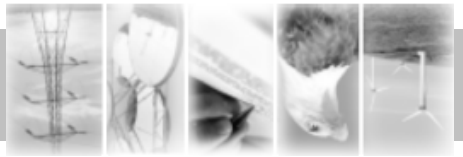
In determining which type of agreement to pursue, first and foremost, find out if your utility already has an areawide in place. If not, work with the utility to establish the financing vehicle that best meets your needs. Consider that not all agencies are eligible to use each agreement. Some sites, such as those housing research facilities, have distinct characteristics that would be best served through a site-specific agreement.

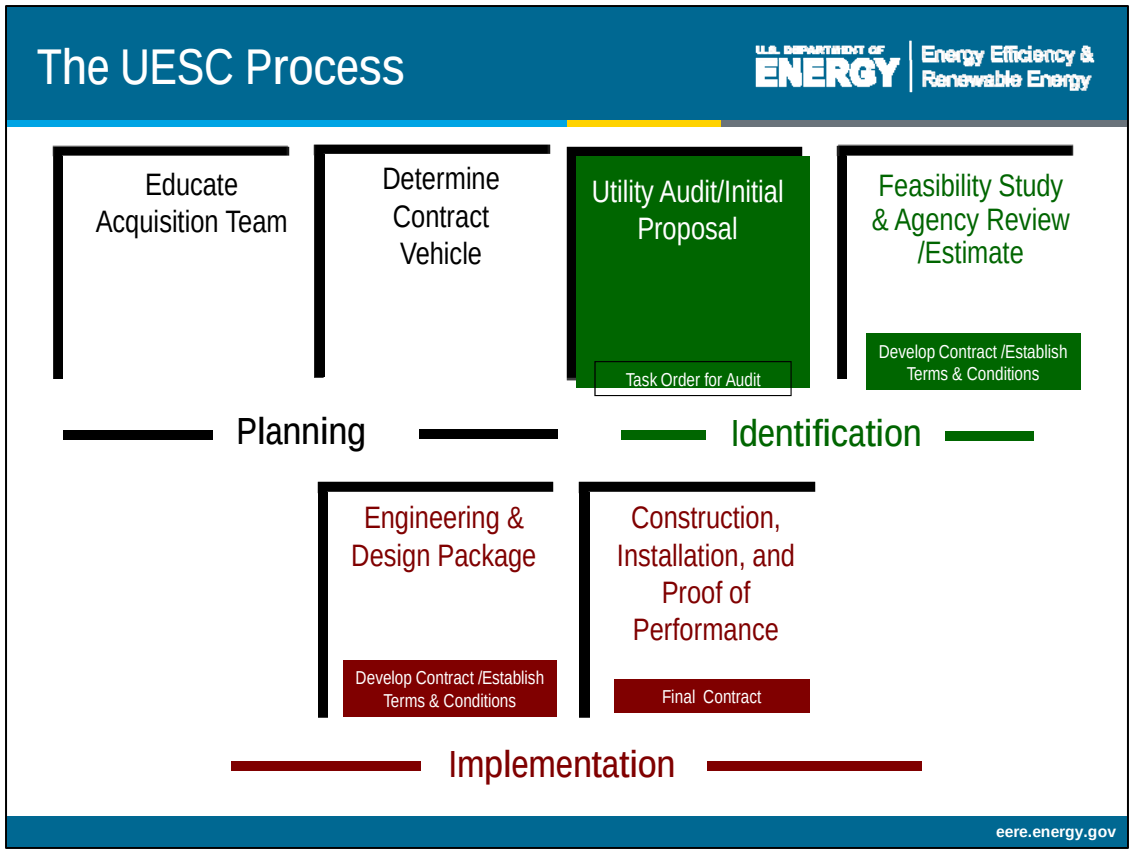
The Project Identification Phase

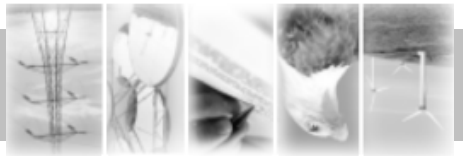
Utility Energy Services Contracts

Project Identification

The Project Identification Phase







Utility Audit & Initial Proposal

The Utility Audit & Initial Proposal

The Utility Audit & Initial Proposal

- Audit defined
- Arranging the audit
- Clarifying expectations
- The audit
- The audit results

Go/ No Go Decision

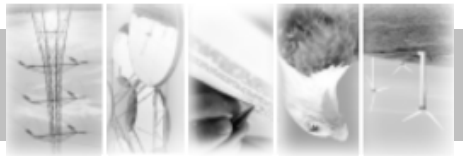
This section is provided to give you an understanding of:

- The process for initiating an audit
- The elements to consider when evaluating an audit

Go/No Go Decision Points: There are points within the UESC process where your agency can opt out without obligation to the utility. So far, all the actions taken have not had monetary consequences associated with them. From the audit point forward, the agency assumes some responsibility for the work effort of the utility. Generally, preliminary audits are free of charge. Other studies associated with the project carry a fee that must be agreed to and paid if the agency decides not to go forward. We call these points “go/no go decisions”.

References for this section
Sample Request Forms

The Project Identification Phase



Utility Audit & Initial Proposal –
What is an Audit?

The audit is the best tool for identifying all opportunities to save money and increase energy efficiency. Federal protocol requires that audits be comprehensive in nature to identify opportunities to use the existing energy-consuming systems more wisely, or replace those systems with more efficient ones.

It is left to the agency's discretion to determine the level of formality necessary to initiate a facility audit. Documentation can be as informal as a paper that addresses the non-binding nature of this step in the process, and includes site conditions, security issues and cost elements. Generally, there are no costs/fees incurred by the agency in the utility audit phase.

Audit Defined

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- What is an audit?
  - A review of existing facility use and conditions
  - An examination of energy and water consuming equipment and control systems
  - A broad assessment of the potential for energy and water savings based on a recommended set of measures
- Who provides the audit?
  - Serving Utility
  - The Utility may partner with an energy services company

Supporting the Audit: Provide technical staff to improve the audit outcomes
Keep in mind: the feasibility study will provide more detail and accuracy in technical content and pricing

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Good Contracting Documentation is Essential!!

The Project Identification Phase

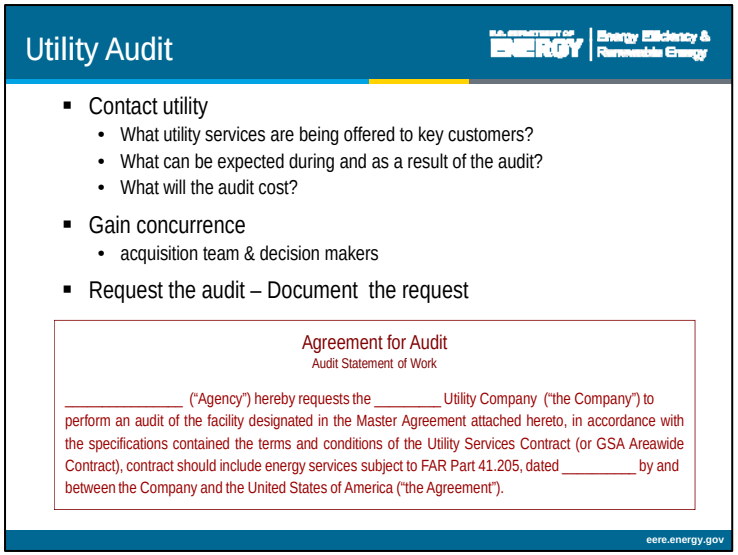
Utility Audit & Initial Proposal – Arranging the Audit

Arranging for the Audit

To arrange for your audit, simply contact your utility and request one. It is wise to document in your project file whether there is an associated cost. As stated earlier, there is no single route to a project. Sometimes the utility contacts an agency and the process unfolds from there if there is interest on the agency side. Either way, once you are in conversations with the utility concerning the audit, schedule a kick-off meeting and include utility representatives and key members of your acquisition team.

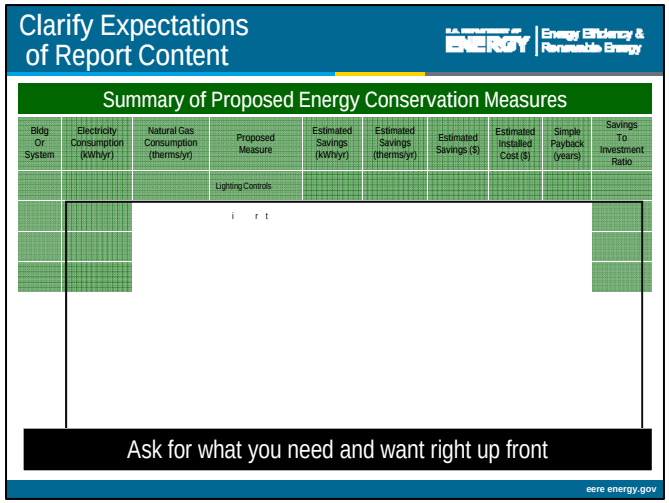
If you are considering some of the optional items that UESCs can incorporate, now is the time to make sure your utility offers them. Most utilities offer things like M&V, but just in case, if that's something your facility is committed to, it's best to make sure it's available. Be sure to turn over all of the data that you have gathered on your facility (historical data, usage, etc.). Lastly, arrange a tour of your facility so that the utility has an opportunity to see equipment and occupants.

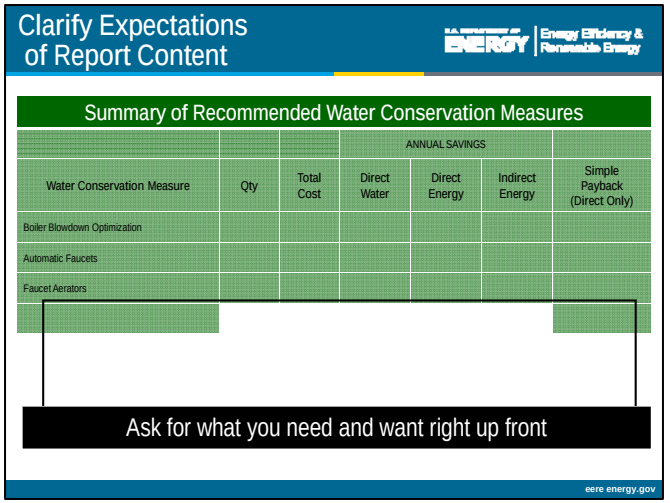
UESCs are a partnership and, like most partnerships, success in large part is dependent on open communication. If you are able to provide information that eases the process, it most likely saves money in the long run and therefore maximizes the government's value. Remember, these contracts can last for years!

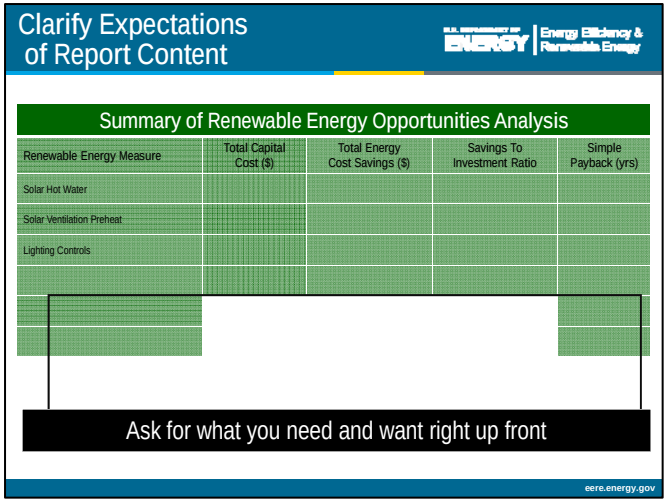


The Project Identification Phase

Utility Audit & Initial Proposal – Clarifying Expectations







Ask for what you need

This is your chance to get your project launched in the right direction. It is an opportunity to spell out your expectations and share the outcomes of your acquisition development. Make sure report includes systems/equipment audited, greenhouse gas recommendations and planned projects.

The Project Identification Phase

Utility Audit & Initial Proposal – The Audit

The audit combines historical information with current conditions and an eye toward future operations. The utility examines the historical information that you provide during the kick-off meeting as well as utility bills, purchased fuels data and metered data. The rate schedule should be evaluated to determine the most appropriate rate – a new rate would impact the life-cycle cost analysis. During the site visit, the utility looks at all energy consuming equipment, the utility systems, the operation and use of buildings, building envelope and systems, including O&M procedures, and insulation of pipes and tanks.

The results of the audit may closely resemble what the utility submits as a proposal. The report includes existing equipment, recommended ECMs, established baseline conditions, technical recommendations and estimated payback periods.

For our purposes, an audit is more like an estimate. It is designed to give the utility an opportunity to have a look at the site and make some determinations on how to proceed on a project. By conducting an audit, the utility is able to minimize their costs but maximize value to the government. The agency has the opportunity to evaluate the utility's assessment and comment on it.

Initiating the Audit

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Audit Request -

- Document expectations
- Indicate the cost
- Designate the COTR

After agreeing on expectations, schedule kick-off meeting & walk through -

- Include utility, acquisition team and other essential facility staff
- Notify tenants in advance

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Hosting the Audit

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

The partnership begins here…

- Provide facility data, drawings, studies, future construction plans, …
- Clarify site needs & constraints
- Provide knowledgeable staff

Remember: Success depends on open communication.

Saving the utility time collecting essential data ultimately saves the government money

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The Project Identification Phase

Utility Audit & Initial Proposal – The Audit (continued)

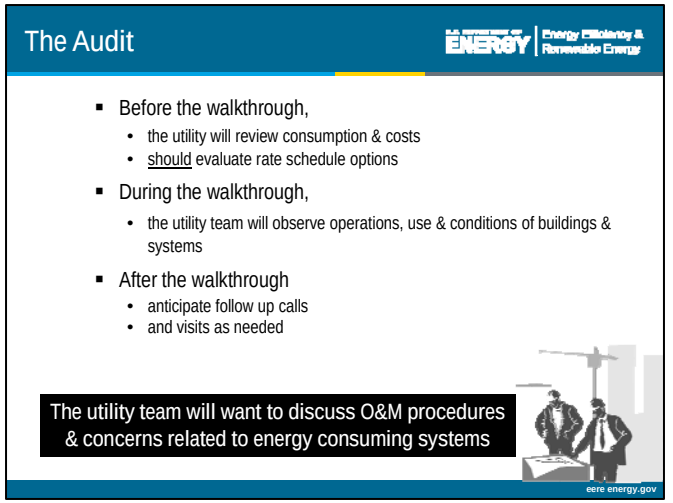
The Audit Evaluation Strategy

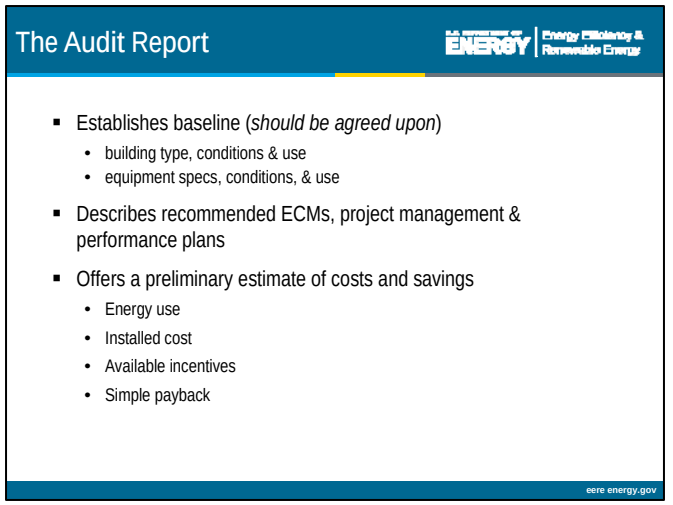
When evaluating the utility audit, the review team should first distinguish between significant issues that could affect project economics and feasibility and less significant issues that can be negotiated in the final proposal. Technical and price elements are negotiable at this stage, but technical factors and approach should be given more weight by the reviewers than price. The price proposal and financial schedules are a consideration but need not be the focus of the review at this stage. Focus the review on the technical proposal. Look at the ECMs to determine if they are acceptable and provide a solution to your site's identified problems.

Verify that all requested items have been addressed. Look for the acceptability of the management plan.

Verify that any optional items you specifically asked for have been included: O&M or M&V, for example. Consider whether assumptions, calculations and analysis are clear and understandable.

This is going to be a long-term partnership, consider the likelihood of a mutually beneficial working relationship that allows you solutions within your comfort range.





The Project Identification Phase

Utility Audit & Initial Proposal – The Audit (continued)

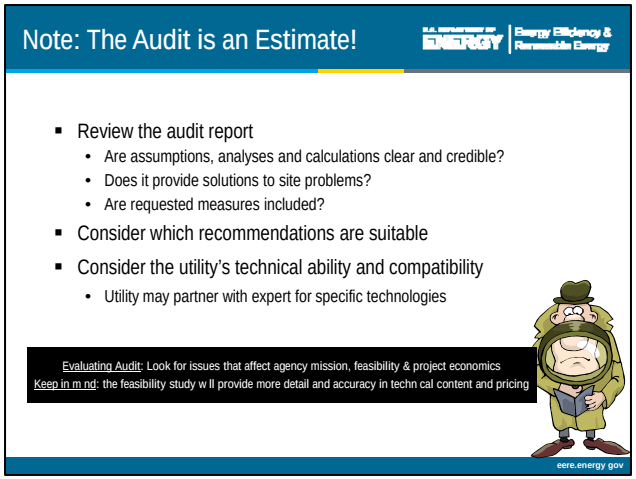
The energy audit protocol for evaluations conducted in Federal facilities requires a comprehensive, thorough examination of all energy-consuming systems in the facility. The building's condition and envelope are also to be evaluated, along with its operating condition. Energy audit recommendations are to include cost-effective operation and maintenance (O&M) activities and provide a screening for renewable energy technologies and water efficiency measures. Energy conservation measures are to be recommended without regard to fuel source.

Federal Audit Protocol

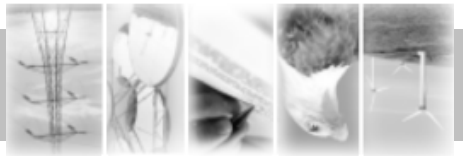
- Examine the operation of buildings and systems and condition of the building envelope
- Evaluate all energy consuming equipment, utilities systems, and utility bills, purchased fuels, and metered data
- Assess and determine the feasibility or potential for energy and water conservation and renewable energy measures that are life-cycle cost effective

EISA Section 432

- May use recent evaluations from last two years - first 25% due June 2009
- Commissioning component
- Project Overview – Executive Summary
- Technical Assessment – ECM Description
- May use audits conducted by utility companies



The Project Identification Phase

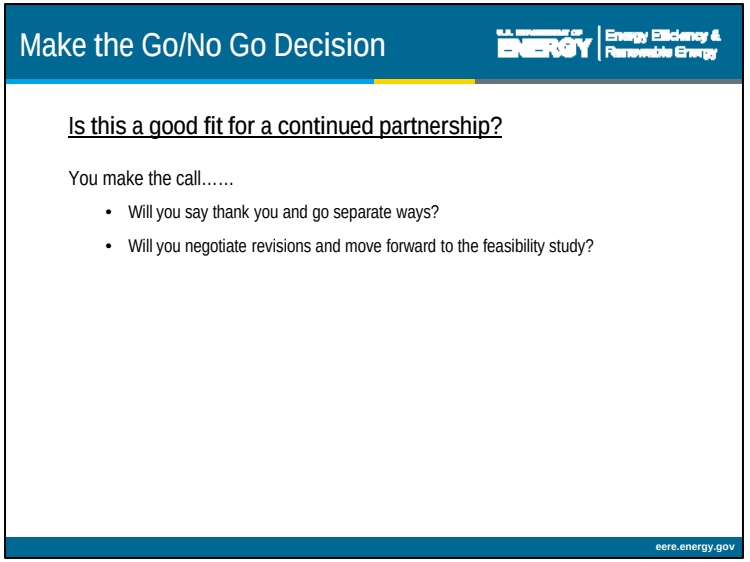


Utility Audit & Initial Proposal – Go/No Go Decision

Now that you've met with the utility and had an opportunity to see them work, it's time to decide you're next move:

- Would you like to stop the process here?
- Would you like to see some revisions in the audit?

  Keep in mind that it's an estimate. Try not to get hung up on the little things at this stage — it's negotiable until the contract is signed!
- Are you going to approve the audit and go on to the next step?



The Project Identification Phase

The UESC Process

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Educate Acquisition Team

Determine Contract Vehicle

Utility Audit / Initial Proposal

Planning

Identification

Engineering & Design Package

Develop Contract /Establish Terms & Conditions

Construction, Installation, and Proof of Performance

Final Contract

Implementation

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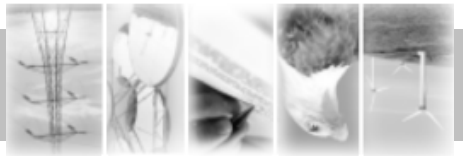
The Project Identification Phase



Feasibility Study & Agency Review Estimate

The Feasibility Study should provide the following (refer to the Model Agreement for the entire list of minimum information):

•Audits of energy consumption of existing equipment, including estimated energy and cost savings and proposed retrofit costs and financial incentives/rebates,
•Equipment to be removed or replaced, and new equipment to be installed,
•Operation and maintenance procedures required after ECM implementation,
•Training,
•Proposed method to verify energy savings
•Documentation that each proposed ECM has been recommended and selected without regard to fuel source

The Price Proposal should be required to include a number of vendor quotes for generic equipment and documentation of competition for subcontractors.

In evaluating the price proposal, several factors are to be considered. The Utility should demonstrate knowledge of the site's requirements and it constraints. All required or directed ECMs are to be included, along with complete and accurate descriptions of the technologies. Commissioning and performance plans, if required as recommended, should be evaluated along with the construction schedule to ensure the implementation causes minimal disruption to the facility's operation. The Government should also be assured of price reasonableness.

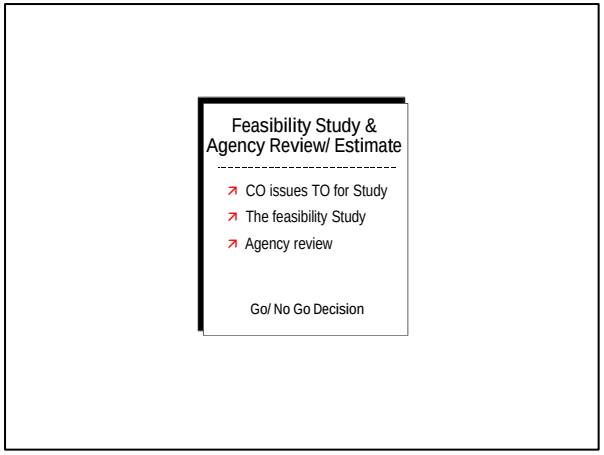
This section is provided to give you an understanding of:

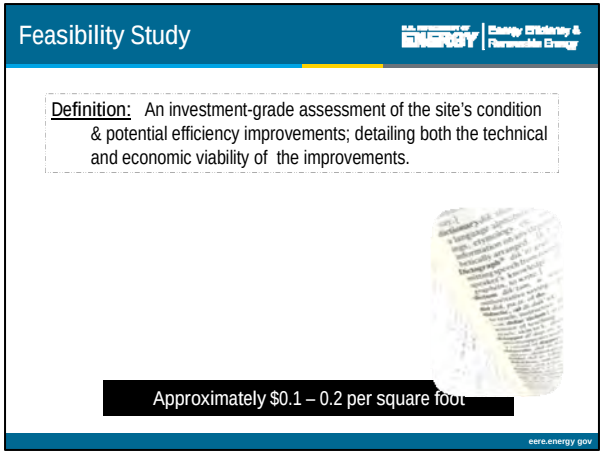
- What to ask for in a feasibility study.
- How to evaluate the study results.
- M&V and the feasibility study.

References for this section
FEMP M&V Guidelines

The Project Identification Phase

Feasibility Study & Agency Review Estimate





The feasibility study assesses both the technical and economic viability of the proposed project. It is an investment grade review of the site's condition and potential efficiency improvements performed by the utility. The utility conducts the study within a number of days specified by the agency after receipt of the government's notice of intent to proceed. The in-depth energy survey of facilities and energy systems at the project site confirms the utility's ability to achieve the estimated annual cost savings submitted in its price proposal. The detailed energy survey shall confirm or justify revisions to the proposal on facility and energy systems operating conditions and proposed energy baseline.

Feasibility studies are also referred to as in-depth studies and detailed energy surveys.

The Project Identification Phase

Feasibility Study & Agency Review Estimate (continued)

Contractual Documents for the Feasibility Study

- The audit results or initial proposal provides content for the Feasibility Study SOW
- Review – Discuss – Agree on measures
- Decision – "Go or No Go"

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Request the Feasibility

TASK ORDER FOR DETAILED FEASIBILITY STUDY STATEMENT OF WORK

Recommendations Approved for Detailed Feasibility Study Statement of Work Specifications

AGREEMENT FOR DETAILED FEASIBILITY STUDY TASK ORDER

_____ ("Agency") hereby requests the _____ Utility Company ("the Company") to perform a Feasibility Study of the facility designated in the Master Agreement attached hereto, in accordance with the specifications contained the terms and conditions of the Utility Services Contract (or GSA Areawide Contract), contract should include energy services subject to FAR Part 41.205, dated _____ by and between the Company and the United States of America ("the Agreement").

Detailed Feasibility Study **– for each approved recommendation designated**

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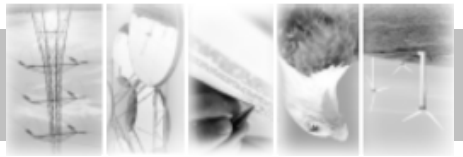
Develop the Statement of Work for the feasibility study from the audit results. Use staff engineers or obtain a third party estimate for the government estimate.

The Project Identification Phase



Feasibility Study & Agency Review Estimate (continued)

The utility shall prepare a report of the detailed energy survey that documents the existing conditions of government facilities, including but not limited to:

- Building physical conditions
- Hours of use or occupancy
- Area of conditioned space
- Inventory of energy-consuming equipment or systems
- Energy-consuming equipment operating conditions and loads
- Baseline weather (i.e., cooling and heating degree days)

Clarify Expectations for the Feasibility Study

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Technical Elements

- Finalized baseline
- Details for recommended measures:
  - Assumptions
  - Detailed description, estimated implementation costs, cut-sheets & schematics
  - Estimated energy, cost & maintenance savings with calculations
  - Interplay between measures
  - Commissioning plan & method for verifying savings
  - O&M ~ start up and on-going requirements
  - Environmental benefits ~ CO_2, SO_2 & NOx
  - Environmental actions ~ ballast disposal

LCC analysis in accordance with 10 CFR 436

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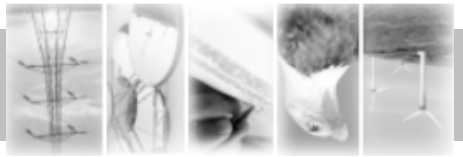
The Project Identification Phase



Feasibility Study & Agency Review Estimate – Pricing and the Feasibility Study

Based on the in-depth energy survey results, the utility verifies estimated annual energy savings and resubmits a completed schedule. The utility submits a copy of the in-depth energy survey findings for the project cost by ECM, estimated annual operating cost, unit cost by major component and systems, life-cycle cost analysis, and a breakdown of implementation cost.

The in-depth energy survey may indicate that existing conditions vary from earlier data or assumptions proposed for any of the individual ECMs. Any variance between survey findings and an individual ECM assumption shall require the offeror to revise all supporting documentation for each affected ECM in its proposal. These revisions and supporting documentation shall be included as part of the in-depth energy survey. The in-depth energy survey shall fully document the existing building conditions and proposed energy baseline.

As part of the study, the utility must verify the accuracy of the estimated installation costs originally proposed. The utility may revise the estimated costs after completing the survey. But the revised estimates must be within a specified percentage (10 to 15 percent) of the originally proposed estimate. The utility also resubmits any Schedules that have been revised in light of the feasibility study.

Clarify Expectations of the Feasibility Study

U.S. Department of Energy | Energy Efficiency & Renewable Energy

Estimated Construction Costs

- Detailed cost estimate
  - Labor
  - Rental equipment
  - Materials
  - Subcontracts
  - Taxes
  - Engineering services
  - Project management costs
  - Performance bond
  - Overhead rate
  - Authorized profit
- Rebates & incentives
  - Provide process of application, assignment and acceptance
- Itemize costs
  - M&V
  - O&M
  - Commissioning
  - Guarantee for performance or savings

Competition required for equipment and subcontractor selection

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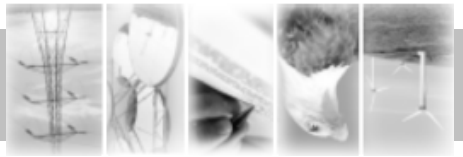
Competition required for selection of equipment and subcontractors

The Project Identification Phase



Feasibility Study & Agency Review Estimate – Evaluating the Feasibility Study

Reconvene your acquisition team once you have received the feasibility study. Each team member should be assigned the responsibility for their areas of expertise but also read the study comprehensively as elements of price may show up in the technical proposal.

Check to be sure that all required ECMs have been included and addressed. Each ECM should have a reasonable savings amount associated with it, along with reasonable assumptions and interactions between ECMs. Look at the baseline; does it correlate with your own assumptions? Did the utility look at all they could do? Your study should include elements of water and renewables.

During your acquisition planning, you considered multiple issues: fuel neutrality, environmental concerns, and contract term along with your site-specific issues. Has the utility addressed these issues appropriately? What about price and financing rate? Are they reasonable? And lastly, do the estimated savings exceed the payments? If not, red flag! Bring these and other items of concern to the utility's attention.

Evaluating the Study

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Inclusion of requested ECMs
- Reasonable savings calculations
- Reasonable baseline
- Reasonable assumptions and interaction of ECMs
- Inclusion of ECMs for water and renewables
- Adequate consideration of site-specific issues
- Adequate consideration of environmental benefits & issues
- Reasonable Price
- Reasonable financing rate & contract term *(GSA recommends payment term not exceed 80% of useful equipment and/or material life)*
- Do savings exceed payments?
- Are the proposed measures fuel neutral?

Independent Government Estimate

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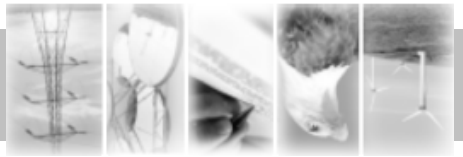
The Project Identification Phase



Feasibility Study & Agency Review Estimate – Economic Review of the Feasibility Study

An economic review of the feasibility study is an opportunity for the agency to do a check on payoffs, financial impacts and reasonableness. To check implementation costs, use cost estimating handbooks along with your past experience. Pay attention to the level of competition among subcontractors. Look at the "adders" like project management, hourly rate, overhead charges and profit. Lastly, make sure that the utility looked at the rate schedule when calculating savings.

The Estimate of Energy Cost Savings

The utility provided an estimate of energy cost savings in both the audit and the feasibility study. The two figures may vary. That's acceptable since the audit is more of a cursory look in the early project stages. The feasibility study provides the utility with the chance to look more closely at your facility and at the energy cost savings. However, if there is a difference between the two figures, is it drastic? If that's the case, you may require an explanation if the utility did not take the liberty to provide it. The ECM baseline should be consistent with requirements and assumptions associated with the ECMs, and should be acceptable taking into consideration operating hours and weather data. You may wish to consider an independent estimate and check of energy savings.

Economic Review of the Feasibility Study

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Check to see if the utility looked at the rate sch calculating savings
- Analyze the project implementation costs
  - Use cost estimating handbooks & past experience
  - Consider level of competition among subcontractors
- Examine adders: project management, hourly rate, OH and profit (both % and basis), taxes
- Consider early ECM payoffs and financial impacts

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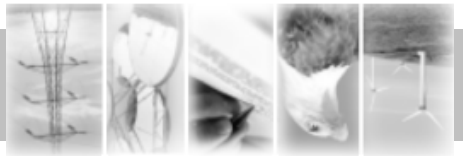
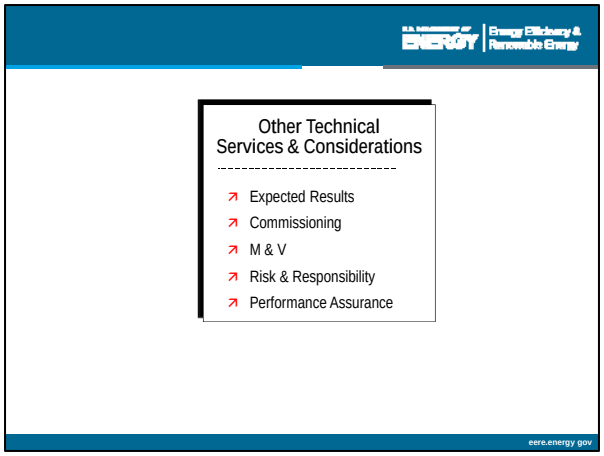
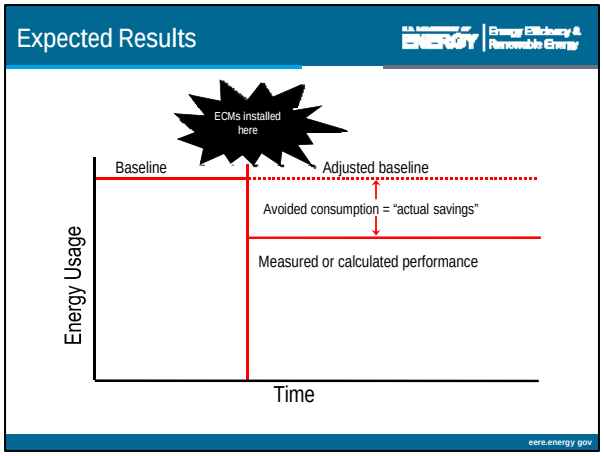
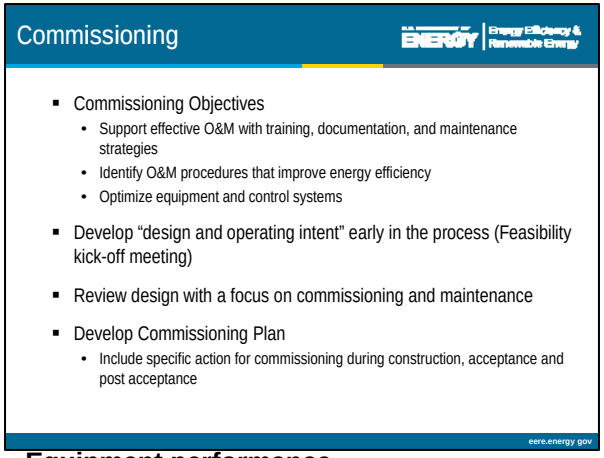
The Project Identification Phase

Feasibility Study & Agency Review Estimate – Other Technical Services & Considerations









Expected Results

The feasibility study will provide expected energy and cost savings for each ECM based on the agreed upon baseline. A strong performance assurance plan and good O&M will support continued savings over the term of the contract and life of the equipment installed.

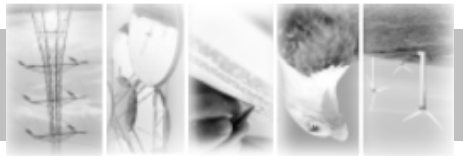
Commissioning

Commissioning supports effective O&M by ensuring equipment is installed correctly, systems and components work together as designed, and operations and maintenance strategies continued optimal efficiency.

Equipment performance

Generally the utility has control over the selection of equipment and is responsible for its proper installation and demonstrated performance including standards of service and efficiency. Clarify who is responsible for initial and long-term performance, how it will be verified, and what will be done if performance does not meet expectations.

The Project Identification Phase



Feasibility Study & Agency Review Estimate – Other Technical Services & Considerations

Measurement and Verification

The Federal Energy Management's Program's five steps to effective M&V are:

1. Establish the M&V option and method.
2. Prepare a site-specific M&V plan.
3. Define a baseline.
4. Monitor the installation of the energy conservation measure.
5. Conduct periodic verification and reporting.

International Performance Measurement and Verification Protocol (IPMVP)

http://www.evo-world.org/index.php?option=com_content&task=view&id=272&Itemid=279

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Examples of Risk & Responsibility

Delays: Both the utility and the agency can be responsible for delays. Delays can cost "lost savings" and can add cost to the project. Clarify the schedule and how delays will be handled.

Performance Assurance Plan: The agency assumes the financial responsibility for the cost directly or through the utility. Insist that the plan is understandable and detailed enough to verify performance and savings.

Equipment performance: Generally the utility has control over the selection of equipment and is responsible for its proper installation and demonstrated performance including standards of service and efficiency. Clarify who is responsible for initial and long-term performance, how it will be verified, and what will be done if performance does not meet expectations.

For all measures and especially for stipulated equipment loads and savings, carefully document the baseline and establish concurrence by both parties

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Risk & Responsibility Matrix

Issue	Assessment	Responsibility	Actions
Interest Rate	Neither the utility nor the agency has control over interest rates.	Awareness by agency and utility	Optimize timing of Task Order signing to benefit from interest rate and project cost
Delays	SAMPLE		
Equipment Performance	Utility has control over equipment selection, performance of equipment verified Agency and utility must agree upon what will be done if performance does not meet expectations	Utility – Selection, proper installation, & demonstrated performance Agency – participate in design process, observe installation and demonstration and assure long term performance and verification	Agency require and witness demonstration of performance Action if performance does not meet expectations

Identify and work through the project risks and responsibilities

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M&V

Measurement and verification (M&V) provides a before and after energy use comparison in UESC projects. Verification of how the ECMs perform is essential in confirming that the project is a success.

Identify Risks and Understand Responsibilities

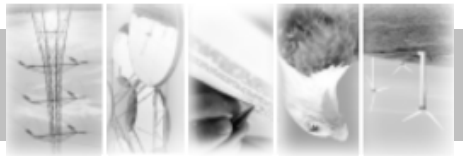
Identify the risks and responsibilities for elements of the project. For example:

Delays: Both the utility and the agency can be responsible for delays. Delays can cost "lost savings" and can add cost to the project. Clarify the schedule and how delays will be handled.

Equipment performance

Generally the utility has control over the selection of equipment and is responsible for its proper installation and demonstrated performance including standards of service and efficiency. Clarify who is responsible for initial and long-term performance, how it will be verified, and what will be done if performance does not meet expectations.

The Project Identification Phase



Feasibility Study & Agency Review Estimate – Performance Assurance for Multi-Year Contracts under the Utility Incentive Program

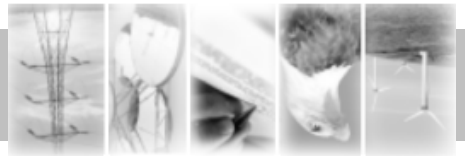
Performance assurance for alternatively financed Utility Energy Services Contracts (UESC) entered into by Federal agencies is recommended in order to assure fiscal responsibility. UESCs should include some plan for continued action during the contract to assure accomplishment of expected performance.

The minimal performance assurance plan recommended by FEMP for UESC ECMs is:

- Start-up performance verification (based on measured data);
- Performance verification at the end of warranty period (based on measured data);
- Operations and maintenance training (required in the more common instance where the agency continues to perate and maintain installed equipment);
- Provision of continuing training throughout the contract period as specified in the contract as determined by the needs of the facility;
- Periodic inspections and verification of appropriate O&M performance; and
- Performance discrepancy resolution.

The performance assurance for more complex projects should also include consideration of ongoing metering and continuous commissioning. The use of a periodic re-commissioning or continuous commissioning protocols can verify that the equipment operation and related services are being provided in a way to assure that the desired performance is maintained. Obviously, agencies may choose to develop more rigorous performance assurance plan requirements that fit their specific needs. The performance assurance actions needed to validate expected performance should be reasonable and within the power of the utility to honor. Every effort, such as the use of representative sampling, should be made to minimize the extent and cost of performance assurance. Ultimately, the appropriate performance assurance and M&V method rigor necessary to cost effectively assure compliance with that specified in the contract must be at the discretion of the individual contracting officer.

The Project Identification Phase



Feasibility Study & Agency Review Estimate – Performance Assurance for Multi-Year Contracts under the Utility Incentive Program (continued)

Performance Assurance Guidance for UESC

Minimal performance assurance planning recommended by FEMP for UESC is:

- Start-up performance verification*
- Performance verification at the end of warranty period*

* based on measured data

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Performance Assurance Guidance for UESC (cont'd)

- O&M training: at construction and periodically during the contract period
- Periodic inspections and performance verification
  - Assessment and resolution of performance discrepancy

FEMP Performance Assurance Guidance
www.eere.energy.gov/femp/docs/femp_perf_assure_recommendations.doc

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Key Elements of Performance Assurance

- Agree on the baseline
- Clarify performance objectives
- Consider interactions between measures
- Specify verification method for each measure
- Identify resource impacts & requirements
- Indicate reporting format & schedule

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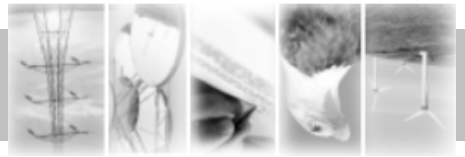
UESC contracts are for utility services under section 201 of the Federal Property and Administrative Services Act of 1949. The only financial requirement on Federal agencies is the obligation of the annual costs for such contracts during each year that the contract is in effect.

There is no statutory requirement for annual measurement and verification of the energy, water, or cost savings, or a contractual guarantee of those savings as there is for Energy Savings Performance Contracts in Section 801 of the EPACT.

Prudent energy management requires that the continuing performance of the equipment secured and techniques applied under these contracts be assured to accomplish the expected energy and/or water usage and cost reductions.



Feasibility Study & Agency Review Estimate – Performance Assurance for Multi-Year Contracts under the Utility Incentive Program (continued)

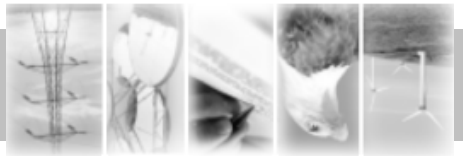
Measurement and verification is an optional item that you can attach to your project if your agency requires it or if you want a more accurate accounting of how the installed equipment performs. However, M&V is not a legal requirement in this process as it may be in other contracting mechanisms.

The FEMP M&V Guidelines are a step-by-step procedural guide for federal energy projects. Four options, A, B, C, and D, are provided in order to provide flexibility in determining energy savings. A particular option is chosen based on the expectations of the agency and on site-specific features.

If you want M&V, the utility includes an M&V Plan with the feasibility study. The plan clarifies objectives, documents and determines the baseline approach, which includes building characteristics, intended measures and interactions between measures. The plan goes on to document which option (A, B, C, or D) or combinations of options that accompany the project. Each ECM should include not only the option associated with it but also methods and procedures for data gathering and analysis.

All of the methods for determining energy savings are based on the same concept; namely, energy savings are derived by comparing the energy usage after the retrofit to what the energy usage would have been without the retrofit (i.e., the baseline). It is relatively easy to measure post-retrofit consumption. However, it is impossible to "measure" what the energy usage would have been, therefore it is impossible to "measure" energy savings. Energy savings can only be determined, based on assumptions about the baseline.

The Project Identification Phase



Feasibility Study & Agency Review Estimate – Go/No Go Decision

The utility submits the feasibility study to the government for review and acceptance prior to contract issuance. Government acceptance establishes mutual agreement on the energy and facility baseline conditions.

The FEMP website has tools to assist with scope and planning of measurement and verification.

http://www1.eere.energy.gov/femp

Make the Go/No Go Decision

U.S. Department of Energy | Energy Efficiency & Renewable Energy

- You make the call –
  - Will you say thank you and go separate ways?
  - Will you negotiate revisions and move forward to construction?
- If you opt out here, you pay the fee established in the task order

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The Project Implementation Phase

Utility Energy
Services Contracts

Project Implementation

The Project Implementation Phase

The UESC Process

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Educate Acquisition Team

Determine Contract Vehicle

Utility Audit / Initial Proposal

Feasibility Study & Agency Review / Estimate

Develop Contract /Establish Terms & Conditions

Planning

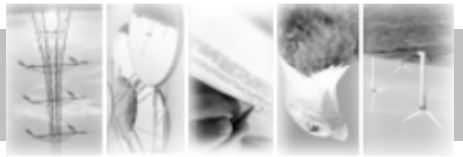
Identification

Construction, Installation, and Proof of Performance

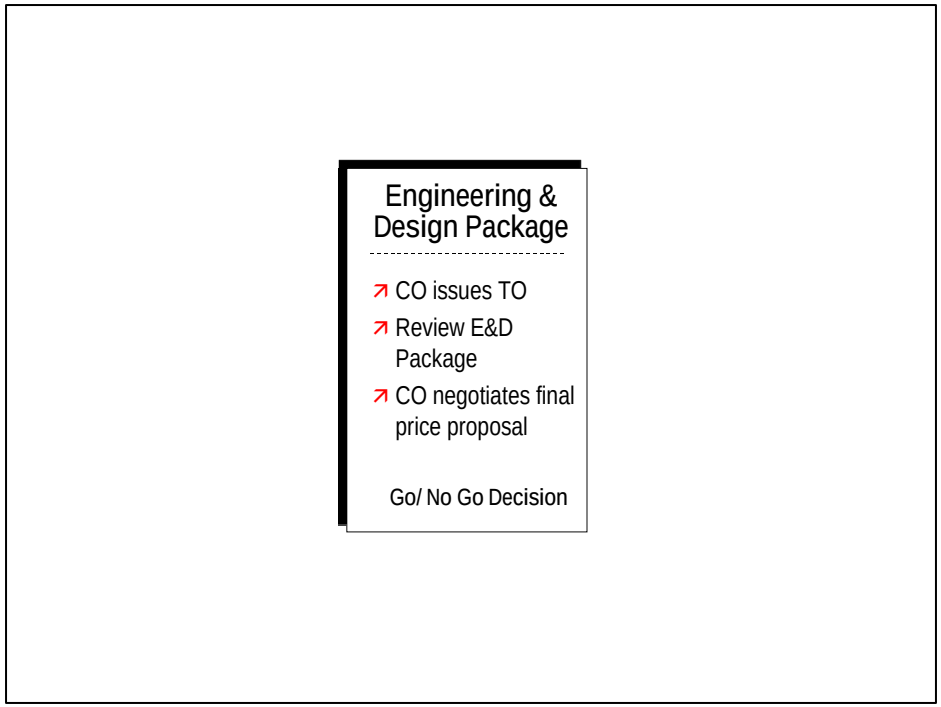
Final Contract

Implementation

The Project Implementation Phase



Engineering and Design Package

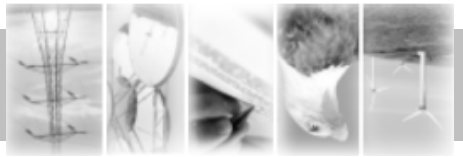


This section is provided to give you an understanding of:

- Reviewing an Engineering and Design Package.
- Elements of the final price proposal.

During the implementation phase, you, your teammates and the utility fine-tune the final elements of your project. As a team, you have the opportunity to make one more Go/No Go decision prior to construction. Although you have come along way, you are still not at a point of no return. However, you have had plenty of interaction with your utility partner, plenty of communication and hopefully, as we enter the final stretch, you have put misgivings (if there were any) behind you as you have come to agreement on project elements.

The Project Implementation Phase



Engineering and Design Package – Initiating the Engineering and Design Package

In its technical proposal, the utility provided a project schedule that described when, after contract issuance, the subcontractor would submit design and engineering plans for each ECM. The engineering and design plans are to be submitted within the time frame specified by the utility in its proposal.

As in earlier phases, a task order must be issued in order to proceed with engineering and design. The task order includes:

- Agency site-specific requirements
- Engineering and design services
- Agency and utility cooperation agreement (if necessary)
- Price and payment information – the agency agrees to pay this amount if they opt out after the package is complete.

The utility's response to the task order is a full set of plans and detailed specifications.

Contractual Documents for Engineering & Design

- The feasibility study results or final proposal becomes the SOW for the Engineering and Design phase
- Review – Discuss – Agree on ECMs – Negotiate costs
- Pay – or - Roll

eere.energy.gov

Initiating the Engineering and Design Package

- Issue your task order for engineering and design
  - Include agency and site specific requirements
- The utility will respond with a full set of plans and detailed specifications

TASK ORDER For Engineering & Design
Statement of Work

Recommendations Approved for Engineering & Design
Statement of Work Specifications

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The Project Implementation Phase

Engineering and Design Package – Reviewing the Engineering and Design Package

Again, call together your team for the review. Be sure to plan for personnel to conduct inspections as construction nears. When reviewing the information that the utility submits, look for consistency with the feasibility study in engineering drawings and design specifications. The design package should include at least the following for each ECM:

- Installation drawings
- 100% complete plans and specs
  - Commissioning, O&M, M&V
- Final price proposal
- Estimated construction schedule
  - Planned Service Interruptions. If any utility services must be discontinued temporarily to install work, such interruptions shall be described and indicated on the project installation schedule. The description shall include the length of the interruption, its time (day of week, time of day, etc.), and a justification.
  - It may be possible to arrange for interim service to be provided by a truck-mounted chiller or generator during a planned outage.
  - Environmental compliance
  - Quality control
  - ECM installation sequence

The package should represent a comprehensive planned approach, complete with drawings and specifications. You have the option of asking for resubmitals and there can be several back and forth exchanges and iterations during this phase, but each iteration adds to the cost of the project. Use FEMP's assistance to get through this part of the process. FEMP has specialized expertise in advanced technologies and can offer cautions and advice

Reviewing the Design

- The results of this phase should be 100% design, plans & specifications and a detailed price proposal
- The Design should be consistent with the Feasibility Study

FEMP provides technical assistance with reviews, advice on technologies and help resolving contracting questions and concerns

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Reviewing the Design

The design package should also include:

- Optional plans as required for Commissioning, Performance Verification, and O&M
- Final price proposal
- Construction schedule
  - Planned service interruptions
  - Environmental compliance
  - Quality control
  - ECM installation sequence

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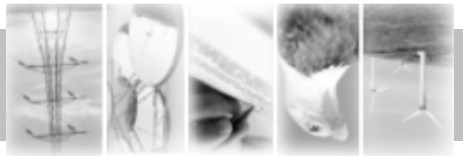
Commissioning is an important element of your project that is threaded throughout the implementation phase. The design package should have a plan for how equipment is to be tested or commissioned as it is installed. It should contain specifics on commissioning during construction, acceptance, and post acceptance. Be certain that training is combined with commissioning.

The Project Implementation Phase



Engineering and Design Package – The Final Price Proposal

The price proposal includes construction costs, financing costs over the loan term, project management costs and interest rate.

The financing rate is an important part of your project's price. Find out what index the financing rate is based on (usually Treasury Note or swap rate) and what factors are added on top of that base level. These "adders" are usually negotiable (to a point) and should be addressed in discussions with the utility and the third party financier.

Contractual Elements that Can Impact Interest Rates

Negotiating the adders, such as project management and profit is potentially the most contentious part of the deal. Here is where the spirit of partnership is most important. Price reasonableness of project management can be evaluated just like price of subcontract labor, using estimated hours and hourly rates of utility staff working on the project. Reasonableness is checked by comparing project management rates to rates of the same staff working on different projects or other staff doing essentially the same work. There are no guidelines regarding profit. The utility may have goals of making a certain profit, but the basis on which that profit is calculated may be negotiable. The goal of the federal agency is to minimize these additional utility costs without jeopardizing the deal.

Keep in mind, although these projects are partnerships between the agency and the utility, the utility is still a business just like any other company and must make a profit. The utility expects to be able to charge a reasonable overhead rate and to charge a fee for project management services. Agencies should not be surprised to see these costs show up on the total project cost figures. In fact, if these numbers aren't showing up, the agency should find out why. The profit may be imbedded in the other figures and you won't know what is being charged. These numbers should be carefully scrutinized and negotiated to get the best value for the government.

Project Management

- Projects are partnerships, but the utility is a business and must make a profit for shareholders
  - Utility profit (IRR) is typically 10-14% on services provided
- You will be charged for project management and overhead (OH) fees
  - OH fees are ~ 15-20% on services portion
  - Project management fee is ~ 3-5% depending on complexity

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Negotiating the Price Proposal

- Price proposal includes:
  - Construction cost
  - Financing cost over the term of the loan
  - Optional item cost (non-required costs)
  - Project management costs
  - Interest rate
  - Loan Amortization Schedule
  - Termination Schedule

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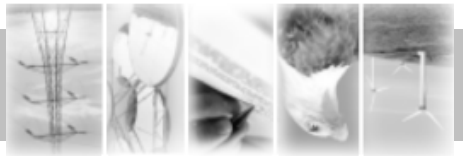
The Project Implementation Phase



Engineering and Design Package – Go/No Go Decision

Go or No Go?

U.S. Department of Energy | Energy Efficiency & Renewable Energy

Will you continue the process?

- No?
  Pay for the E&D Package.
- Yes.
  CO finalizes the contract; move to construction and installation

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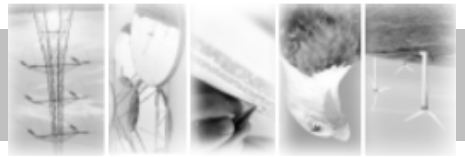
If what you see in the Engineering and Design package is not something you can live with, you have the option of asking for revisions or if something more drastic is called for, you can opt out of the process and pay the utility for they have provided.

Continuing from here requires your CO to complete and finalize the contract prior to moving on to construction and installation.

The Project Implementation Phase



The UESC Process

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Educate Acquisition Team

Determine Contract Vehicle

Utility Audit / Initial Proposal

Feasibility Study & Agency Review / Estimate

Develop Contract /Establish Terms & Conditions

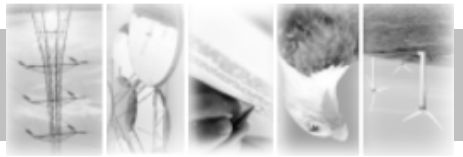
Planning

Identification

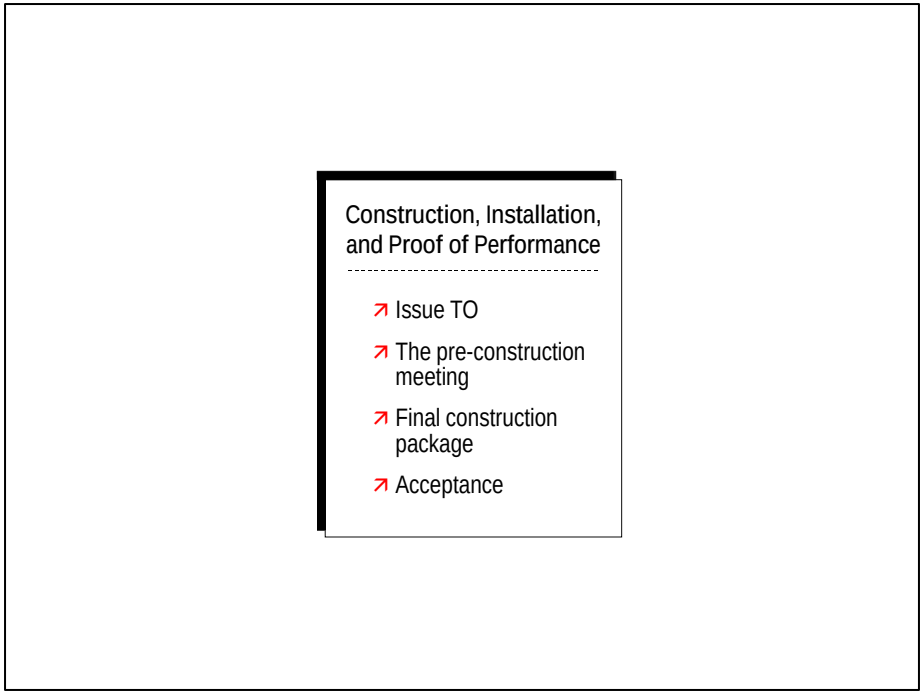
Engineering & Design Package

Implementation

The Project Implementation Phase



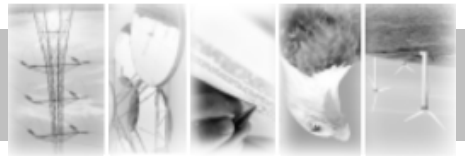
Construction, Installation and Proof of Performance



This section is provided to give you an understanding of:

- The workings of the pre-construction meeting.
- The elements of the final construction package.
- Commissioning your project.

The Project Implementation Phase



Construction, Installation and Proof of Performance – Initiate Construction and Installation

If you have decided to continue with your project, your CO issues a task order for the construction and installation phase. The task order incorporates elements of agency expectations, installation requirements and schedule information, and a termination schedule. Once the task order has been issued, arrange a pre-construction meeting.

Contractual Documents for Construction

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- The feasibility study results or final proposal becomes the SOW for the Construction phase
- Review – Discuss – Agree on ECMs – Negotiate costs
- Pay – or - Roll

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Initiate Project Construction and Installation

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Contracting Officer issues task order for Construction & Installation Phase

TASK ORDER FOR CONSTRUCTION STUDY
STATEMENT OF WORK

Recommendations Approved for Construction
Statement of Work Specifications

AGREEMENT FOR CONSTRUCTION TASK ORDER

_____ ("Agency") hereby requests the _____ Utility Company ("the Company") to proceed with construction for the facility designated in the Master Agreement attached hereto, in accordance with the specifications contained the terms and conditions of the Utility Services Contract (or GSA Areawide Contract), contract should include energy services subject to FAR Part 41.205, dated _____ by and between the Company and the United States of America ("the Agreement").

Construction – for each approved recommendation designated

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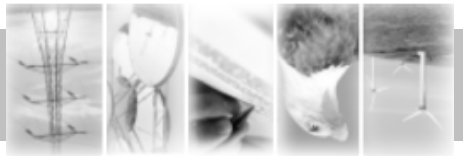
The Project Implementation Phase



Construction, Installation and Proof of Performance – Initiate Construction and Installation (continued)

Site Plan (if Required)
If an ECM involves the installation of facilities or exterior structures, the contractor shall provide a site plan showing its location. The subcontractor shall also provide a plan and elevation drawings of the facility or exterior structure showing its size and exterior appearance.

Acquisition of Permits (if Required)
For any ECM installation requiring permits from regulatory agencies (e.g., local Air Quality Management District for ECMs with stationary source emissions such as a cogeneration facility) or government agency requirements (i.e., hot-work permit for welding), the subcontractor shall provide its plan and schedule for acquiring such permits.

Installation Schedules
The installation schedule shall show the order in which the subcontractor proposes to perform the work and the dates on which the subcontractor intends starting and completing all major milestones (including acquiring materials, equipment, permits). The schedule shall be in the form of a progress chart of suitable scale to indicate the amount of work scheduled for completion by any given date during the installation period.

The Pre-Construction Meeting
Once again, your team comes together, including the contracting officers representative (COTR) and utility representatives. During the meeting, review and coordinate the project schedule and installation and inspection. Since you have already given the heads up to your facility personnel during the Engineering and Design phase that they are on tap for inspection, they are prepared to be included in scheduling. Once the final construction schedule is agreed upon, they are ready to go to work. Although it is the utility's responsibility, you are conducting oversight, so before construction begins, use this meeting to be sure that all required permits are in place.

Initiate Project Construction and Installation

- CO issues task order for Construction & Installation Phase
- Pre-construction meeting
  - The COTR and facilities/engineering staff and utility reps review and coordinate project schedule, installation & inspection
  - Work with inspection and implementation site personnel to approve the final construction schedule

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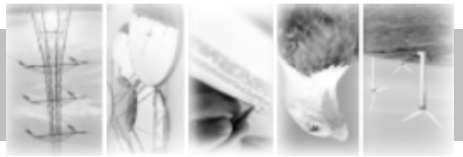
Construction Documents

- Plans & Specifications
- Final Performance Verification Plan
- Final Commissioning Plan
- Final Training Plan
- Equipment submittals
- Construction schedule

What else would you like to see?

Payment & Performance Bonds - After approval of ECM installation plans, the utility shall submit Payment & Performance Bonds or a "Letter of Credit"

The Project Implementation Phase



Construction, Installation and Proof of Performance – Initiate Construction and Installation (continued)

Payment and Performance Bonds

Upon request of the contracting officer, the utility shall submit acceptable performance and payment bonds within a specified time frame (typically 15 days) after approval of ECM installation plans. The performance and payment bonds shall comply with any requirements set forth in Section H of the contract. A utility may also opt for an Irrevocable Letter of Credit.

A transmittal letter sent with the task order issuance document typically reminds the utility of the requirement to submit its performance and payment bonds to the contracting officer within 30 days of award. The bonds must be provided before any work may be accomplished, and then only after the contracting officer provides a Notice to Proceed.

Construction and Installation

The COTR and other facilities or engineering staff must review and approve the construction and installation plans for contract compliance and coordination/scheduling of installation inspection.

The objective of the installation plan is to provide detailed information for the COTR at the project site to confirm that the ECM to be installed complies with contract requirements, (i.e., the ECM being installed by the subcontractor is as described in its proposal which was approved by the government and meets applicable design and construction standards set forth in the contract), and provides data and information to allow the government to schedule and conduct periodic inspection of installation of ECMs. We recommend that the installation plan include at least the following for each ECM: .

Construction

- The agency monitors the construction to assure work is proceeding as planned
- The utility must notify the agency when each ECM is ready for testing and performance verification

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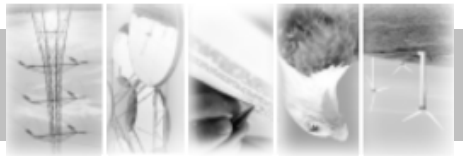
The Project Implementation Phase



Construction, Installation and Proof of Performance – Initiate Construction and Installation (continued)

Manufacturer's Data
For all ECM equipment to be installed the subcontractor shall provide the manufacturer's descriptive literature of equipment including drawings, diagrams, performance and characteristic curves, and catalog cuts

Shop Drawings
Shop drawings shall be prepared by the utility, subcontractor, or any lower tier subcontractor showing in detail:

- The installation (i.e., form, fit, and attachment details) of the interface between ECM equipment and existing government equipment.
- The location of installed equipment on building floor plans.

Certification of ECM Compliance with Building Codes and Standards (if required)
The subcontractor shall provide registered engineer certification that ECMs comply with all applicable building codes and standards. ECM installation plans submitted to the contracting officer without evidence of the **Professional Engineer (PE) certification** may be returned for resubmission. (NOTE: This is not required for all ECMs. For example, retrofits of existing fluorescent lighting fixtures to replace ballasts and tubes does not require PE certification, while replacing a 500 horsepower boiler would be appropriate as it is a pressurized vessel installed in government facilities.)

Implement the Commissioning Plan

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Ensure proper installation
- Verify operations and controls strategies of equipment and systems
- Review and verify systems performance tests
- Verify completion
- Review operations after installation is complete

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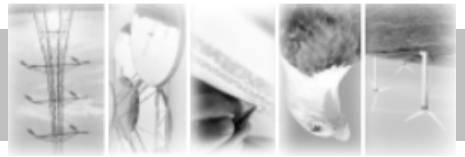
The Project Implementation Phase



Construction, Installation, & Proof of Performance – Commissioning and Acceptance

The agency also is responsible for verifying that the utility or subcontractor has submitted all required documentation as stated in the solicitation. Documentation may include a spare parts list, an O&M Plan and necessary manuals, and a schedule for training government employees. The utility is responsible for notifying the government when the installation phase is completed.

Commissioning involves testing the installed equipment to verify that it is performing to specifications before you accept. During the commissioning phase, ensure that the proper equipment has been installed, that any start up procedures have been completed properly, any monitoring or metering devices are working, and the equipment has been inspected and tested. The government must conduct inspection and acceptance to verify that ECMs meet contract requirements and will provide estimated or guaranteed savings.

Project Close Out Documents (Deliverables)

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- O&M manuals for installed ECMs
- Performance / Testing / Commissioning results
- Inventory of spare parts (lamps, ballasts)
- As-built drawings
- Training manuals
- Warranties (including date at beneficial use)
- Davis-Bacon wage rates
- Performance bonds on subcontractors
- Letter of credit from utility

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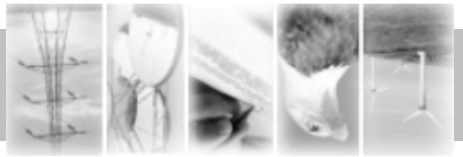
The Project Implementation Phase



Construction, Installation, & Proof of Performance – Project Completion and Acceptance

The utility notifies the agency once they are finished with installation, as stated in the contract. It is the agency's responsibility to determine whether or not installation has been conducted to their satisfaction. Sometimes the criteria around what comprises an accepted project are based on substantial completion, completion of a punchlist or acceptance. Then the agency notifies the utility that it is satisfied. The project has been accepted!

Project Completion and Acceptance

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Per contract requirements, the utility notifies the agency of project completion
- Agency deems
  - Substantial completion/beneficial occupancy
  - Final completion and acceptance
  - Completion of punchlist
- The agency notifies the utility of project acceptance in writing

The government must verify installation & performance meet design

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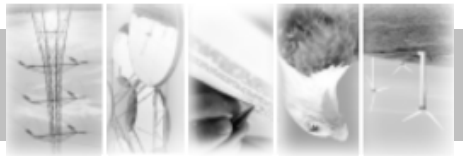
The Project Implementation Phase



Construction, Installation, & Proof of Performance – ECM Installation

Your agency is responsible for monitoring the utility's or subcontractor's progress throughout the ECM installation period to ensure that the work is proceeding as planned. Before and during ECM installation, the utility is required to provide the agency with various forms and plans which include, but are not limited to, the following:

- ECM Quality Control Plan.
- Monthly ECM Work Schedule Form, as needed.
- Installation Start Date/Completion Date.
- Notification of Work Outside Regular Hours Form.
- Notification of Planned Utility Outages Form.
- Notification of ECM Testing Form.

After completion of the ECM installation and acceptance by the government, the contract may require the utility to submit a schedule of annual energy audits, as part of the optional M&V plan.

Training should be provided to facility management and maintenance personnel as an integral part of ensuring the projects long-term viability. The utility or another appropriate organization should develop a thorough schedule to these personnel.

Training

U.S. Department of Energy | Energy Efficiency & Renewable Energy

- Include hands-on operation of new equipment:
  - Start-up, operation in normal and emergency modes, shutdown procedures, seasonal changeover, and manual/automatic control
  - Energy Management and Control System sequencing, strategies, operation and programming
- Provide periodic training over the contract term
- Training documentation should include:
  - Video tape of the training sessions
  - O&M manuals for new equipment
  - Routine maintenance requirements and schedules
  - Health and safety issues and concerns
  - When and how to re-commission

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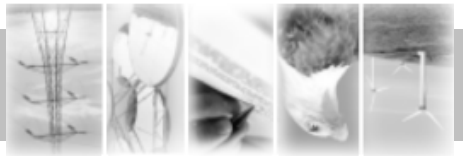
The Project Implementation Phase



Construction, Installation, & Proof of Performance – Consider Post-Award Energy Conservation Proposals

The utility may propose additional ECMs after award as a negotiated addition to the contract. Any additional ECMs proposed must be within the scope of the contract. If an additional ECM is proposed, the utility shall submit technical and price proposals to the contracting officer in accordance with the details provisions in Section C of its award describing the required contents of these technical and price proposals. Prior to government approval and incorporation of any additional ECMs, detailed energy surveys of affected facilities and energy systems at the project sites will be required, again in accordance with contract provisions.

Post-Installation

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Conduct operations and maintenance and continuous commissioning to optimize energy efficiency
- Conduct and review periodic performance verification
  - Verify and document equipment performance
  - Determine actual energy savings
- Consider additional ECMs proposed after the original task order is awarded.
  - Begin the process with a new proposal

Building Commissioning Guide for Federal Facilities
http://www1.eere.energy.gov/femp/pdfs/commissioning_fed_facilities.pdf

Commissioning Guidance for ESPC
www1.eere.energy.gov/femp/pdfs/comm_guide_espc.pdf

eere.energy.gov

Contract Development

Utility Energy Services Contracts

Contract Development

Contract Development

Once the audit is complete, begin development of the contractual documents that accompany the project. You may recall that there are several resources available to you: AWC, Site Specific Contracts, BOAs and Master Agreements. Most agencies prefer the use of an areawide because they are generally available and still allow the inclusion of your site-specific terms and conditions.

GSA has published the Utility Areawide Guide to assist in placing orders against their resource. The GSA areawide contract spells out the general terms and conditions of service, contains all applicable clauses, and provides instructions for federal agency use. It's a simple, standardized procedure for ordering utility services.

References for this section:
GSA Utility Areawide Guide
UESC Lessons Learned

This section is provided to give you an understanding of:

- The GSA Utility Areawide Guide.
- The elements to consider when putting together your contract for a UESC.
- Examine sections of the Model Agreement
- Contractual elements that impact the project's interest rate.

Contract Development

Construction and Service Contracts

Most UESCs are a combination of construction and services contracts. FAR clauses are applicable based on which phase of the project you are in. For example, design and performance phase activities are governed by FAR clauses for services (for example – FAR 36.601-33, FAR 36.601-4, FAR 37.602-1) while installation activities utilize FAR's construction clauses (For example - FAR 52.236-15, FAR 52.236.-21, FAR 52.236-26)

Specific sections of the FAR apply to wages and rates depending on whether the project is in its construction period. Davis Bacon applies to construction while the Service Contract Act rate applies to the services segments. Warranty, payment and performance bonds also require separate consideration.

All in all, requirements are determined by the agency contracting officer. The Navy considers all contracts to be construction type under this process.

Incorporating Terms and Conditions

Each phase in the UESC process requires a task order issued under the blanket contract (presumably the Areawide or a site-specific contract). Within the individual task orders, the agency has the opportunity to incorporate site-specific requirements and unique elements. The cost of each byproduct of the phase becomes an inclusion in the task orders. Look to the Uniform Contract Format to incorporate more detail if you or your contracting officer is uncomfortable with the terms and conditions as they appear in pre-existing contractual documents.

Utility Contract

- Allows Utility to provide its commodity to a customer
- May allow Utility to provide "energy services" like demand side management to a customer
- Contracts that do not have "energy services" included must be modified

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Construction and Service Contracts

- Most UESCs are a combination construction/ service contract. Utilization of FAR clauses is dependent on type of work
  - Determined by project specs and CO (some Navy C.O.'s consider contracts to be pure construction)
  - For project's design activities and performance phase activities (O&M, M&V), use FAR clauses for services, including supplemental clauses for A/E services
  - For project's installation activities, use FAR clauses for construction.

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Construction and Service Contracts

- Wages and rates
  - Davis Bacon rates for construction, Service Contract Act rates for services (except A/E design services)
- Warranty
  - FAR 52.246-20 for construction, FAR 52.246-21 for services
- Payment and performance bonds
  - Requirements determined by CO, utility letter of credit is low cost option
  - FAR 28.102 or 52.228-15 for construction, FAR 28.103 or 52.228-16 for services

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Contract Development

The Model Agreement

The Model UESC Agreement was developed to provide a uniform, approved set of standard contract terms and conditions for Federal facilities and utilities using the utility energy service contract vehicle. The resulting Model Agreement has approximately 80% of the necessary terms and conditions for a UESC. The value of the contract is assurance that the language has been used successfully many times since its development.

The Model Agreement may also be know as an Agreement for Energy Conservation and Demand Side Management Services and is between the Federal Government and the local providing utility.

The signing Parties agree to principles, concepts and procedures in four sections:

1) General Conditions
2) Warranties and Remedies
3) Financing and Payment Provisions
4) Special Requirements.

- Language developed by Edison Electric Institute, technical, legal & contracting officers from DOD, DOE and other agencies
- Reviewed and approved by public and private authorities
- Includes ~80% of terms & conditions for UESC

Provides language used successfully many times

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UESC Model Agreement

AGREEMENT FOR ENERGY CONSERVATION AND DEMAND SIDE MANAGEMENT SERVICES BETWEEN THE UNITED STATES OF AMERICA AND _____ UTILITY COMPANY

This Agreement for implementation of Energy Conservation Measures (ECMs) is entered into this _____ day of _____, 200_, by and between _____ Utility Company (Utility) and the United States of America (Government), represented by the Contracting Officer executing this Agreement. The signatories to this Agreement will be sometimes collectively referred to as the "Parties" and individually as a "Party." This Agreement (when signed by the Parties), any Task Orders (T.O.) executed pursuant to this Agreement, and any other associated agreements shall constitute the entire Contract between the Parties with respect to a particular ECM. A term or condition contained in this Agreement may be amended at any time by mutual written agreement of the Parties. However, termination, modification, or expiration of a term or condition shall not retroactively affect T.O.s previously entered into under this Agreement.

The Parties agree to the following principles, concepts and procedures:

GENERAL CONDITIONS

GC.1 Purpose. The Government desires assistance in accomplishing ECMs at _____ Installation ("Installation") (may substitute "at all Installations within the Utility Company's service area, to include [list the installations by name] ("hereinafter, "Installations")). The purpose of this Agreement is to facilitate the implementation of ECMs through T.O.s. This Agreement sets forth the terms and conditions under which subsequent T.O.s may be entered into between the Parties.

GC.2 Definitions. Terms used in this Agreement

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UESC Model Agreement

- General Conditions
- Warranties & Remedies
- Financing and Payment Provisions
- Special Requirements

Model Agreement & Explanations
http://www1.eere.energy.gov/femp/docs/civagree.doc
http://www1.eere.energy.gov/femp/pdfs/civexplan.pdf

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The Model Agreement (continued)

The General Conditions include definitions of the terms used in the Agreement. Terms such as Acceptance, Carrying Charge, Energy Conservation Measure, Possession, and Subcontractor are explained. These definitions are important as the Federal Agency and Utility implement the contract and need to communicate effectively. For example, Acceptance will determine when the phase is complete and can impact when payments will commence. Services to be provided by the utility is important as well since the services the Agency can order from the utility are listed.

While, required ECMs should be provided in price proposals, overly prescriptive specifications should be avoided to allow the utility to demonstrate innovation in its technical approach. The utility is to conform to defined facility performance standards in the ECMs proposed. The standards include lighting levels designed to meet minimum requirements of the current Illuminating Engineering Society (IES) Lighting Handbook and ECMs which permit flexible operation of energy systems for changes in occupancy levels and scheduling of facilities. The Utility may also assume the building function will remain constant unless the Government indicates otherwise.

After evaluation of and ECM proposal, the Government may choose to move forward and execute a Task Order with the Utility for the evaluation, implementation or operation and maintenance of the ECM. If necessary, the Utility may provide or obtain financing on terms at least as good as those available to comparable customers. The five phases that may be available to the Government are: 1) Audit Phase, 2) Feasibility Study Phase, 3) Engineering and Design Phase, 4) Construction or Implementation Phase, and 5) Operation and Maintenance Phase. Commissioning may be requested as well.

General Conditions

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Use performance specifications
Use prescriptive specifications only when necessary

- GC.1 through GC.23 (including):
  - Definitions
    - Acceptance
    - Energy Conservation Measure (ECM) – Restrictions, Costs
    - Possession
    - Task Order
    - Termination Schedule
  - Term
  - Subcontractor Selection
  - Responsibility for O&M

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Contract Development

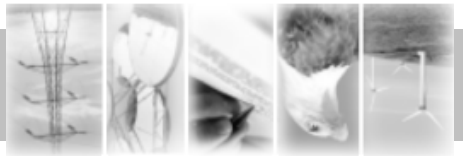
The Model Agreement – The Technical Proposal and the Task Order

The Technical Proposal determines whether particular ECMs proposed by the Utility are feasible.

This proposal should have the following elements:

- Description of proposed approach to implement required ECMs
- Proposed methods to determine annual energy savings
- Management approach, including personnel qualifications and project experience
- Operation and maintenance approach

The Task Order specifies terms for the completion of the Feasibility Study. The Government will pay the Utility the agreed-upon price for the Feasibility Study in accordance with the T.O. If the Government elects to proceed to the Engineering and Design Phase, the cost of the Feasibility shall be rolled in the Engineering and Design Phase Cost.



The Model Agreement (continued)

The Utility is to pass through to the Government all equipment warranties and, from the date of Acceptance or Government Possession, a one-year comprehensive wrap-around warranty guaranteeing that the equipment installed performs in accordance with the specifications.

Prompt payment is required in FAR, Part 32, Subpart 32.903 and late payments will accrue interest. The Federal Agency should make an effort to make payments on time as late payments can impact future interest rates. It is recommended that the invoice certifier be reminded of the assignment of claims and invoicing.

Warranties and Remedies

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- WR.1 through WR.8 (including)
  - Warranties
    - Utility shall pass through to the Government all warranties on equipment…
  - Utility Limitation of Liability
  - Utility Default
  - Prompt Payment

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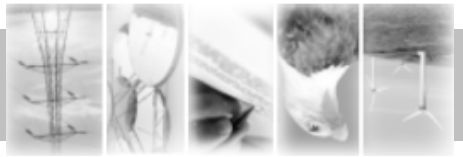

The Model Agreement (continued)

Annual energy savings achieved this Agreement should result in financial savings – savings should exceed costs – to the Government which are greater than the cost of implementing the ECM, including the cost of financing. While the Model Agreement states the payment term cannot exceed ten years, there is precedent for payment periods which extend beyond ten years. Payments for the ECMs are equal to ECM Cost amortized over a negotiated term. Annual-in-advance payments or semi-annual payments instead of monthly payments should be considered as interest savings can be significant.

The Government has the right to buydown the Task Order payments without penalty by giving a written notice to the Utility. The Agency may elect to either shorten the term or decrease the payment of the ECM financing. It is recommended that an indexed formula be established for buydowns.

In order to enhance finance protection of its investments financiers prefer an "Assignment of Claims" whereby the Government payments are made directly to the financier instead of the Utility. This does not relieve the utility from responsibility for the terms and conditions of the contract. See FAR, Part 32, Subpart 32.8 for additional information.

The Utility must comply with all federal, state and local laws, regulations and standards regarding environment protection. In most cases, the Utility will obtain all required environmental permits. The Government should be aware that the Utility does not inspect the project site in connection with a proposed ECM for the purpose of detecting the presence of pre-existing Hazardous Materials. The Government is responsible for handling and disposal of Hazardous Materials, except where negotiated otherwise. The Utility will notify government if there is reason to believe pre-existing Hazardous Materials have been encountered.

Financing and Payment Provisions

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- FP.1 through FP.8 (including):
  - Energy Savings and Financing –
    - intended that annual savings are greater than costs
  - Buydown Provisions –
    - Government reserves right to buydown outstanding T.O. prior to final payment
  - Pre- and Post-Acceptance Termination -
    - 30 day notice

✓ Financier Protection
✓ Assignment of Claims
✓ Notification to government of problems

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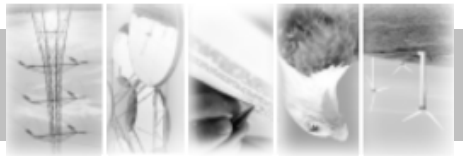
Contract Development



The Model Agreement – Evaluation

The proposal that the utility submits must have a significant amount of technical information in order for the agency to evaluate impacts and benefits of a project. The proposal should follow the Uniform Contract Format which allows an agency to easily identify and evaluate required information contained within the proposal. The following information is required for each ECM contained within the proposal:

- Purpose of the measure
- Current status, existing conditions, baseline utility use and cost, baseline O&M cost
- Detailed description of measure, equipment to be removed, new equipment to be installed, specifications and drawings, interruptions to utility service, government support required, environ-mental compliance, construction schedule, O&M requirements
- Implementation costs, breakdown of raw costs, utility rebates and incentives
- Estimated annual energy costs, annual O&M costs, estimated annual cost savings
- LCC analysis savings-to-investment, payback period
- Guaranteed savings (if requested)
- Measurement and Verification Plan (if any)

During this part of the process, as you are arranging different elements of the contract you are signing with the utility, it's important to consider some of the optional elements a UESC and how they can impact the financing. You may require cost savings and/or performance guarantees. A cost savings guarantee demands more risk from the financier and therefore can increase project costs by two to three percent. Performance guarantees also increase costs but provides added incentive to the utility to keep energy savings on track.

Special Requirements

- SR.1 through SR.5 (including):
  - Environment permits –
    - utility shall provide, at its expense
  - Handling and Disposal of Hazardous Materials –
    - Utility has and will not inspect the site in connection with a proposed ECM for purpose of detecting pre-existing Hazardous Materials . Utility will notify Governmentt and Government is responsible
- Asbestos and Lead-Based Paint
  - Utility may agree to remove pre-existing asbestos containing material or lead-based paint incidental to implementation of ECM if specifically referenced in T.O.
- Refrigerants, Fluorescent Tubes and Ballasts
  - Utility may remove and/or dispose of the above if specifically referenced in T.O.

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Things to Consider

Utility Energy Services Contracts

Things to Consider

Things to Consider

Contractual Documents

- Your contracting documents are determined by agency procedure
- Reach agreement with utility
- Utility signs, agency CO signs and project proceeds

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Ways to Lower Costs

- Time is money – don't delay
- Learn about financing
- Use standard terms and conditions
- Negotiate prepayment formula
- Include assignment of claims
- Ask for appropriate performance verification
- Don't buy a rate lock, "if you can help it"
- Bundle ECMs
- Consider annual vs. monthly payments
- Compare rates, "ask for rate comparisons"

v

Ways to Lower Costs

- Higher prepayment costs lower the interest rate and vice versa
- Request a sample termination cost calculation to eliminate surprise
- Annual payments are less costly; monthly payments may be easier to administer (Avoid late payment interest costs)
  - The costs of late payments is added to the basic interest rate in future financings
  - One Region's late payments can show up as costs in future financings for the entire Agency.

v

Optional Elements that Impact Interest Rate

- Cost savings guarantee (not always available)
  - Can add up to 2-3%
  - Most utilities are precluded from offering savings guarantees by their public services commissions
- Performance guarantee:
  - Can add cost to the contract
- Responsibility for O&M

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There are ways to lower financing costs that include basic education on the issue so that you and the financier are speaking the same language and you recognize the fundamental ins and outs of the industry. For other means of lower financing costs, refer to the "UESC Lessons Learned" handout.

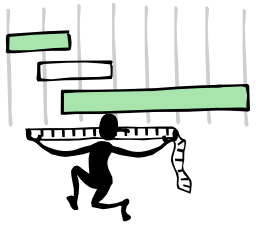
What you are trying to establish is a contractual document that spells out the requirements of your project, establishes general terms and conditions, and represents an agreement between your agency and the utility that allows you to proceed with your project. From here, you are able to issue a task order for the Feasibility Study, if that was not already included in the overall agreement.

Things to Consider

Post Contract – Prioritize Facility Requirements

Do you want performance assurance or commissioning?

What does it do for your project?



Performance Assurance

- Develop a Performance Monitoring Plan
  - Identify a means of measuring and/or calculating the energy being consumed and verifying the "savings" or avoided costs
- Resources:
  - FEMP M&V Guidelines: Measurement and Verification for Federal Energy Projects (v 2.2)
    - *www.eere.energy.gov/femp/pdfs/028758m_fs_mv/guidelines.pdf*
  - FEMP guidance document on developing a performance monitoring plan for UESCs
- Also see Performance Assurance for Multi-Year Contracts under the Utility Incentive Program at *www.eere.energy.gov/femp_perf_assure_recommendations.doc*

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Commissioning

Definition: A process for achieving, verifying and documenting that the performance of a building and its systems meet design intent and operational needs.

- The process extends through all phases of a project from concept to occupancy and operation.
- Building Commissioning Guide & Specifications *http://www.eere.doe.gov/femp/techassist/bldgcomgd.html*

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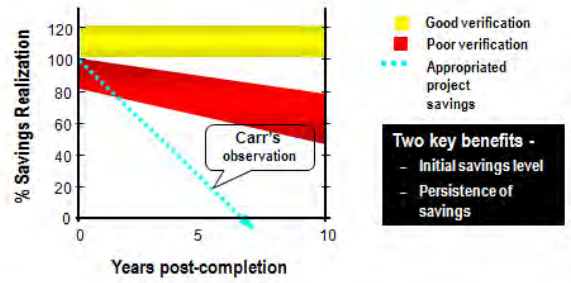
Assured Continued Savings



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Do All You Can

- Include all the opportunities available through UESC
  - energy efficiency,
  - water efficiency
  - alternative electric and/or gas supply
  - on-site power generation/CHP
  - renewables and renewable power purchases
- Incorporate a synergistic and interactive approach to the measures

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Things to Consider

Post Contract –
Prioritize Facility Requirements (continued)

Performance Assurance

- UESC has no statutory requirement for annual measurement and verification of the energy, water, or cost savings, or a contractual guarantee of those savings. However, prudent energy management requires that the optimal performance of the equipment be assured to accomplish the expected energy and/or water usage and cost reductions.
- An action plan to assure the specified performance and efficiency as well as the expected level of operations and maintenance, and annual estimated savings throughout the contract period, is a reasonable expectation.
- The important thing to remember as you put together your project is to do all you can; and incorporate a synergistic approach to your measures.

Things to Consider

Post Contract – Prioritize Facility Requirements (continued)

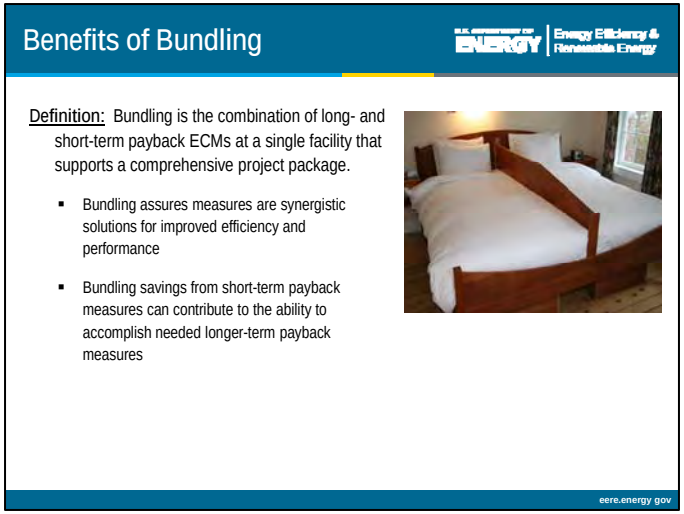
Bundling Energy Conservation Measures
Bundling energy conservation measures is the act of combining various energy saving options at a single facility such that the resulting package is more attractive either economically or technologically (through increased energy savings).

There are pros and cons to bundling energy conservation measures. The cons are:
The chosen contractor may be an expert in one technology but not others
There may be an over-zealous intent to accomplish ALL energy saving measures to the extent that the entire bundle is less likely to compete successfully for agency funding support, or is unfinanceable by the private sector provider
The bundled package can be more difficult to evaluate technically and manage contractually

But, in most cases, the pros far outweigh the cons, particularly in the case of alternatively financed contracts such as Utility Energy Services Contracts or Energy Savings Performance Contracts. The ability for the energy expert to combine many technical solutions to meet the facility's energy needs results in better outcome for all involved. A big plus for the facility is that the conservation provider can work to assure that synergistic effects of one measure are considered when developing the others. For example, the reduction in air conditioning (AC) load from improved lighting can significantly decrease the size of required AC equipment.

More importantly for facility managers, the use of the cost savings from rapid payback ECMs can contribute to the ability to accomplish longer term ECMs, or related facility improvements. A tangible benefit of bundling is the reduction of long-standing maintenance headaches and improvement of the productivity of the people using the space.

With the increased emphasis of deregulation of the electric utility sector, bundling also occurs in terms of the commodity delivered to federal sites at diverse geographic regions. This creates a new group of “power brokers” who arrange for electrical service to be provided at diverse sites, on one billing statement, with information on consumption at the individual sites.



Things to Consider

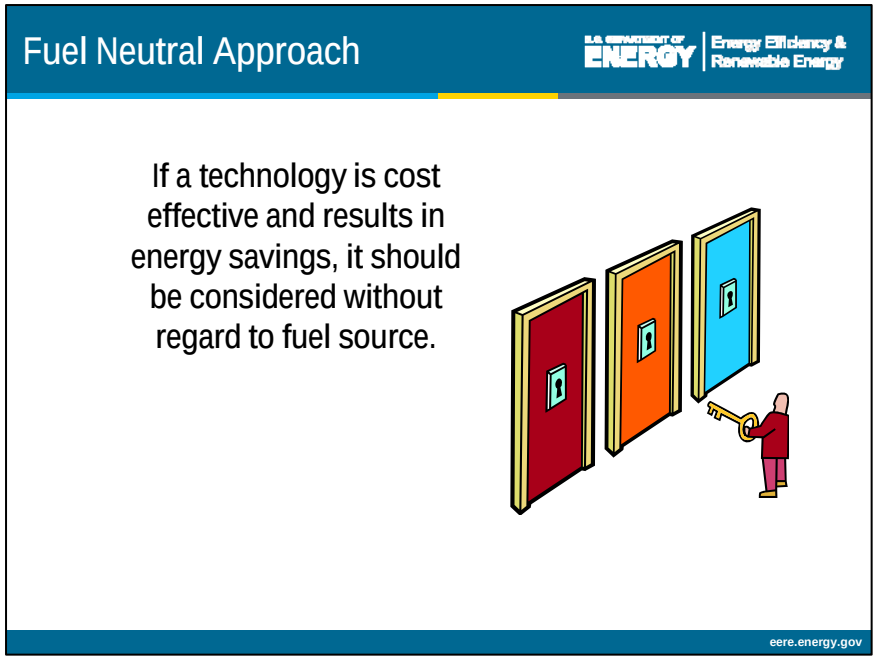
Post Contract –
Prioritize Facility Requirements (continued)

Fuel Neutrality

Fuel Neutrality s the consideration of a technology or conservation strategy without regard to fuel source, provided it is cost effective and implementation would result in energy savings.

The most important consideration in fuel neutrality is ensuring that all fuels are equally represented and all fuel sources are evaluated equally. Therefore, if a technology is cost effective and results in energy savings at the source, even though site based energy use may not decrease, the technology or conservation strategy should be considered without regard to fuel source.

While being "fuel blind" in terms of evaluation of potential technologies, any energy conservation measure that does result in fuel switching must be justified on the basis of cost-effectiveness. Thus, the economic feasibility must be evaluated according to the life-cycle cost-effectiveness requirements set forth in 10 CFR 436.



Things to Consider

Post Contract – Prioritize Facility Requirements (continued)

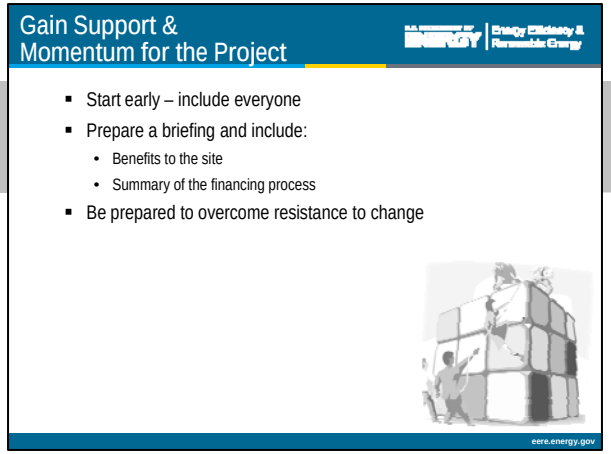
Gain Project Support and Momentum

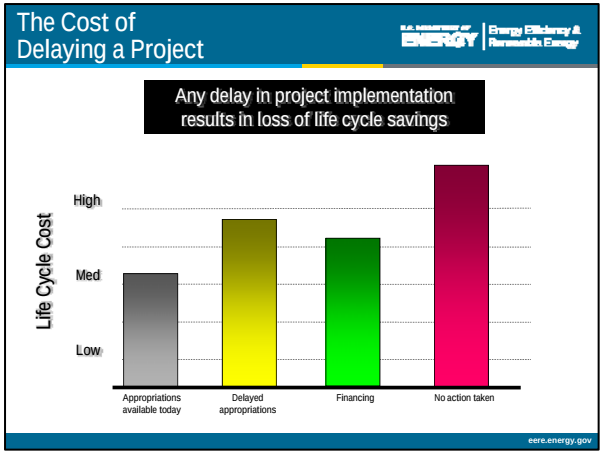
Before proceeding further, facility energy managers should enlist the support of upper management and make them aware of the possibility of a project with the utility. The energy manager should brief management on available utility programs and how programs can efficiently meet energy reduction goals. Communicate how you plan to move forward and discuss a possible project with the utility. Management should be made aware of how the financing structure works, who is involved in the process, the goals this helps to accomplish, the possible ECMs it could incorporate, and the overall impacts of the project.

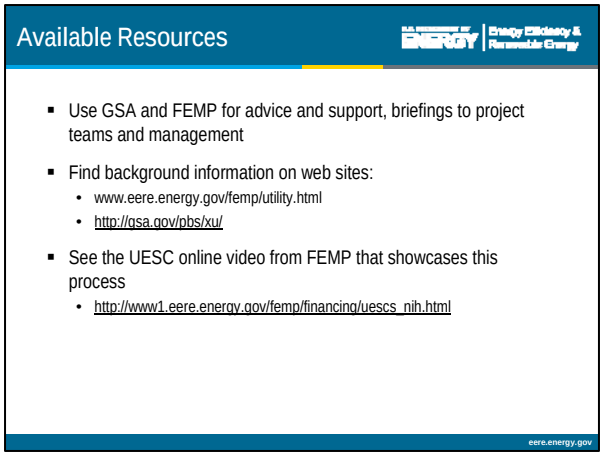
Strategies for Enlisting Support

- Get an early start
- Emphasize the benefits
- Summarize the financing process
- Be prepared for resistance
- Use available resources

Admittedly, planning and implementing a UESC project is not easy. It is time consuming and requires a level of commitment from the Acquisition Team as well as the support of those at the facility the project targets. But the benefits outweigh the difficulties. Clearly, if your agency has direct appropriations that is the optimal option. However, if your agency is like most, direct appropriations are limited and each week that goes, by as pros and cons of project financing are measured, as skepticism and schedules prevent the forward movement of a project, bear in mind: money is being lost that can not be recovered







Things to Consider

The Payment Period

Invoices

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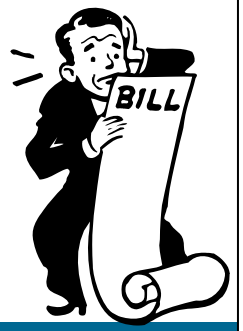
- After ECM installation and acceptance, a Certificate of Completion is signed, then invoices can be accepted and processed.
- Invoicing can be initiated after individual ECM acceptance if previously agreed to in the contract.

As part of the payment process, provide the bill-certifier & bill-payer with:

1. A copy of the contract
2. A copy of the payment schedule



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During this section, we examine the following payment activities:

- Invoices and payments
- Periodic performance verification
- Follow-on projects

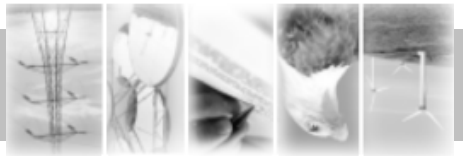
Submittals provided by the utility during the energy savings performance period generally include, but are not limited to the following:

- O&M manuals for installed ECMs
- Inventory of spare parts (e.g., lamps and ballasts)
- As-built drawings or revisions/updates to existing as-builts
- M&V regular interval reports (at least annually or more frequently based on site-specific M&V plan
- Monthly payment invoices (including attached documentation of M&V measurements & monitoring data as applicable).

Section G of the award will provide specific instructions on the timing, format and processing of invoices for payment. Invoices will only be accepted and processed after the ECMs have been installed and their initial performance validated and accepted by the government. The agency is responsible for verifying the monthly invoice before issuing payment to the utility. Payments may be made through the agency's utility bill.

For project payments to begin, the contracting officer must notify the utility that the installation has been accepted and complies with the terms of the contract. The utility can then invoice the government monthly or, collect payment through the agency's utility bill.

Things to Consider



The Payment Period – Periodic Performance Verification

If determined in the contract, thirteen months after the government accepts the ECM installation, the utility is required to conduct its first annual energy audit, which compares the guaranteed reduction in energy use with the actual reduction in energy use.

After post-installation, verify that the ECMs continue to operate and provide predicted annual energy savings. The agency is responsible for reviewing and approving the utility's regular interval report documenting (optional) M&V data. It is recommended that the agency conduct spot checks of ECMs to identify potential performance deficiencies (i.e., standards of service and energy savings). Periodic inspections provide the agency with information to evaluate regular interval reports.

If the actual savings do not equal the guaranteed savings, the utility must reimburse the government for any overpayment.

After the 12th month of continuous ECM operation and each anniversary of installed ECM acceptance, the government shall review and inspect the performance of ECMs to verify that the guaranteed (predicted) annual energy savings performance has been achieved. The regular interval report(s) provide the documentation required to verify annual energy savings performance.

If the reports provide evidence that ECMs did not meet or exceed the guaranteed annual energy savings, then the utility will be required to correct any deficiencies in its installed equipment or systems to restore performance to achieve guaranteed annual energy savings. If there is a shortfall, a reconciliation is conducted in the 13th month after ECM acceptance and annually thereafter as required. During the 13th month, the government may direct the utility to invoice the government for the monthly payment (1/12 of scheduled annual contractor payment during the second year) less the shortfall in guaranteed annual energy cost savings from the previous year.

Payments

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Pay via proper accounting, budgeting and invoicing
- Identify the funding account during the acquisition planning
  - The project invoices can be paid as part of the utility bill
- Timely payment is critical
  - "Maintain effective relationship with Defense Finance & Accounting Service (DFAS)"
  - "Navy has paid 'annual in advance' for construction"

Consider annual payments

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Payments

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- UESCs are must-pay contracts conditioned upon the availability of funds
- Contracting Officer may sign contract chargeable to funds of the new fiscal year before the funds become available
  - In accordance with FAR Part 32.703-2
  - Contract must also include 52.232-18

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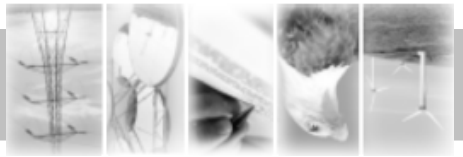
Implementation Process in Summary



Utility Energy Services Contracts

Implementation Process in Summary

Pre-work

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- Understand the process
- Gain concurrence and management & staff support
- Identify energy & water related site needs
- Clarify expectations

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Pre-work

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Educate your Team

DOE FEMP Sponsored Resources

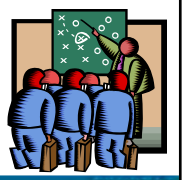
UESC Project Workshops

UESC Webpage
http://www1.eere.energy.gov/femp/financing/uescs.html

UESC Enabling Documents & Training DVD

FEMP supported conference calls & web-training

Consider strategies for meeting site and project needs



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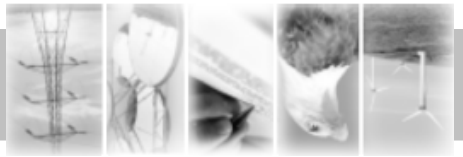
Implementation Process in Summary



Step 1: Concept /Idea

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Action	Resources
Agency: Estimate energy savings potential ▪ roughly 10%-30% of electric bill ▪ natural gas & water can add significant savings	▪ Utility bills (2-3 years) ▪ Equipment name plates & operation schedules ▪ Utility funds source & payment records
Agency: Begin scoping energy project ▪ Prioritize sites by energy intensity (BTU/SF)	▪ Agency energy plans, policy & guidance ▪ Guidance, training & tools at www.eere.energy.gov/femp
Agency: Solicit agency input for prioritized sites ▪ Identify site needs & constraints, planned construction, site champion ▪ Designate "team" & "site management advocate"	▪ Agency staff: EM, REM, O&M, engineering, planning ▪ Site information: O&M records, facility 10-yr plan, previous assessments

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Step 1a: Concurrence

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Action	Resources
Agency Team: Define project objectives ▪ Draft audit expectations ▪ Gather site plans and data for audit	▪ Agency Energy Plans describe structure • Installation Energy Team • Energy Council • Energy Management Team
Agency Team: Develop presentation ▪ Agency prioritized site list ▪ Site project objectives ▪ Designated Team & Site Management Advocate	▪ Scoping results ▪ Agency Energy Plan ▪ Agency EM ▪ FEMP
Agency Team: Gain management concurrence ▪ Present project objectives to working level & command level management	▪ Agency EM ▪ FEMP staff and/or project facilitator

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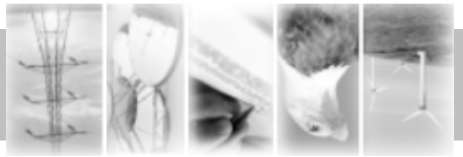
Implementation Process in Summary



Step 2: Consider Contracting Options

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Contract Vehicle	Considerations
Agency Appropriations	▪ Federal agencies can include energy and water efficiency in all repair/replacement, new construction, and renovation projects ▪ Renewable energy projects can be paid by appropriations or accomplished using other contracting vehicles
UESC	▪ Serving utilities can provide financed energy and water efficiency and renewable energy projects to federal customers on a sole source bases
ESPC	▪ Energy services companies (ESCOs) can provide financed energy and water efficiency and renewable energy projects to federal agencies. ▪ Several IDIQ contracts including FEMP's Super ESPC contract are available to reduce contract development time and to provide technical support to the federal agency

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Step 2a: Consider Contracting Options

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Contract Vehicle	Considerations
Agency Appropriations	▪ Generally, least cost option, no finance charges ▪ Project capital cost size and scope depends on available appropriations ▪ Utility may offer no/low cost assessment, incentives, etc ▪ Agency contracts for design and construction ▪ Efficiency and renewable energy measures can be included in any construction effort

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Step 2b: Consider Contracting Options

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Contract Vehicle	Considerations
UESC	▪ Serving utility provides assessment, feasibility study, design, construction, and post-installation support ▪ Projects can be financed or paid from appropriations ▪ Project capital cost size is not limited ($10,000 - $63 million) ▪ Project technologies are related to energy and water efficiency and renewable energy ▪ Multi-site projects are limited to the utility's service territory ▪ FEMP provides project support through out the process ▪ FEMP supports utilities new to the process ▪ Utility profit margins are set by public utility commissions

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Step 2c: Consider Contracting Options

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Contract Vehicle	Considerations
ESPC	▪ ESCO provides assessment, feasibility study, design, construction, and post-installation support ▪ Projects may be paid from a combination of financing & appropriations (EISA '07) ▪ Project capital cost size minimum ~ $1million ▪ Project technologies are related to energy and water efficiency and renewable energy ▪ Multi-site projects are limited only by agency constraints and economic feasibility ▪ FEMP provides project support through out the process ▪ ESCO profit margin is set by the ESPC contract

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Implementation Process in Summary

Step 3: Internal Approval to Proceed to Audit

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Action	Resources & Documentation
Agency: EM requests approval to proceed to audit	▪ Agency specific
Agency: Management / Commander approval to proceed	▪ Agency specific
Agency: issues internal notice to proceed w/ audit	▪ Internal notice to proceed • letter for project file

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Step 3a: Arrange Preliminary Audit

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Action	Resources & Documentation
Agency & Utility: Develop statement of work for audit ▪ Audit expectations	▪ Project objectives ▪ Sample SOW ▪ Audit SOW
Agency & Utility: Negotiate cost of audit * Often no-cost * Expect costs for PAFB type project	▪ Sample audit
Agency: Issue task order for audit	▪ Sample Audit Task Order ▪ Final Audit TO w/ SOW (signed)
Agency & Utility: Schedule audit & kick-off meeting	

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Step 3b: Conduct & Review Preliminary Audit

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Action	Resources & Documentation
Utility: perform audit	Agency staff support
Utility: deliver audit report ▪ on-site meeting often helpful	▪ Audit report
Agency: Review audit results	▪ Record comments
Agency: Discuss results & comments	▪ Record final comments to be transmitted

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Step 3c: Decision to Proceed to Feasibility Study

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Action	Resources & Documentation
Agency: Provide audit comments including acceptable ECMs to utility	▪ Written comments
Agency & Utility: Comment & resolutions meeting	▪ Written comments ▪ Reconciliation notes ▪ Agency form or format as required
Utility: Submit revisions to agency as final deliverable for task order	▪ Utility written response
Agency: Log project information into agency project database	▪ Agency specific database ▪ DOE web-based database (EISA '07)
Agency: Go / No-go decision	▪ Pay invoice or roll cost into next phase

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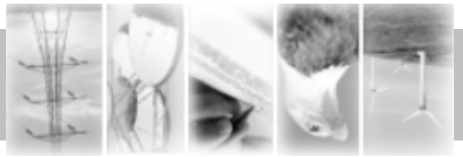
Implementation Process in Summary



Step 4: Approval to Proceed with Feasibility Study

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Action	Resources & Documentation
Agency: Notify authorizing officials of desire to proceed with feasibility study	▪ Letter for file
Agency: Develop feasibility study SOW	▪ Audit Report, agency comments & utility reconciliation response
Agency & Utility: Negotiate cost of feasibility study	▪ Government feasibility cost estimate
Agency: Draft TO requesting feasibility study	▪ Sample Feasibility Task Order ▪ Include "pay or roll" language in TO
Agency: Obtain authorizing officials approval	▪ Internal notice to proceed ▪ Letter for file

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Step 4a: Arrange & Conduct Feasibility Study

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Action	Resources & Documents
Agency: Issue task order for feasibility study	▪ Audit results ▪ Utility/Agency comment resolution ▪ Agency cost estimate
Utility: Perform feasibility study	▪ Agency staff
Utility: Provide feasibility study report	▪ Feasibility report
Utility: Provide on-site presentation of results	

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Step 4b: Review Feasibility Study

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Action	Resources & Documentation
Agency: Review feasibility study ▪ Internal review meeting	▪ Written comments ▪ Acceptable ECM list
Agency & Utility: Comment & resolutions meeting with utility	▪ Agency form to record comments and resolutions
Utility: Provide revised report as final deliverable for task order	▪ Revised feasibility report ▪ Final ECM list
Agency: Update project information in project database	▪ Agency database ▪ DOE database (EISA '07)

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Step 4c: Decision to Proceed to Construction

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Action	Resources & Documentation
Agency: *Go / No-go decision* ▪ Pay if not proceeding to implementation ▪ Pay or roll costs into next phase if going forward to construction	▪ Team discussion notes ▪ Letter for file
Agency: Notify authorizing official of desire to move forward to construction	
Agency: Obtain authorizing official's approval to proceed to construction	▪ Internal notification to proceed

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Implementation Process in Summary

Step 5: Approval to Proceed to Construction

Action	Resources & Documentation
Agency & Utility: Finalize SOW for construction ▪ Finalize construction plans ▪ Finalize construction schedule	▪ Feasibility study
Agency: Draft TO for construction	▪ Final SOW ▪ Government estimate
Agency & Utility: Negotiate final costs for construction and financing	
Agency: Obtain authorizing official's approval to proceed	▪ Internal notification to proceed

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Step 5a: Arrange Construction

Action	Resources & Documentation
Utility: Provide final construction documents	▪ Construction plans & specifications ▪ Construction schedule ▪ Equipment cut sheets ▪ Commissioning plan ▪ Performance assurance plan ▪ Training plan ▪ Warranties
Agency: Issue task order for construction	
Agency: Notify tenants of construction	▪ Construction schedule
Agency: Designate COTR and on-site staff for construction monitoring	▪ Construction documents

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Step 5b: Construction & Commissioning

Action	Resources & Documentation
Utility: Construct per design & performance requirements	▪ Construction documents
Agency: Monitor construction	▪ Construction documents
Utility: notify COTR when ECM is completed and schedule commissioning of individual ECMs	▪ Commissioning plan
Agency: witness ECM commissioning	▪ Commissioning plan
Utility: notify COTR when all ECMs are complete and schedule system commissioning	▪ Construction schedule
Utility: commission all involved / impacted systems	▪ Commissioning plan
Agency: witness system commissioning	▪ Commissioning plan
Utility: provide commissioning results report	▪ Commissioning report

Step 5c: Construction & Performance Testing

Action	Resources & Documentation
Utility: Conduct performance testing	▪ Performance assurance plan
Agency: COTR witness performance testing	▪ Performance assurance plan
Utility: provide results of performance testing	▪ TO contract ▪ Performance test results
Agency: review results of commissioning and performance testing ▪ accept, conditionally accept, or deny acceptance	▪ Performance test report ▪ Commissioning report ▪ Record acceptance results
Utility: notify CO of completion	
Agency & Utility: identify items to be completed for final acceptance	
Utility: notify COTR as items are completed	

Step 5d: Construction & ECM acceptance

Action	Resources & Documentation
Agency: review results of commissioning and performance testing ▪ accept, conditionally accept, or deny acceptance of each ECM	▪ Performance test report ▪ Commissioning report ▪ Record acceptance results
Agency & Utility: identify items to be completed for final acceptance of ECM	▪ Written punch list for each ECM
Utility: notify COTR as items are completed	▪ Update written punch list

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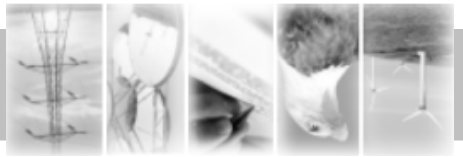
Implementation Process in Summary



Step 6: ECM Training

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Action	Resources & Documentation
Agency & Utility: Schedule training	▪ Training plan ▪ Construction schedule
Utility: provide training on all ECMs ▪ Training manuals ▪ Video recording of training sessions	▪ Training Plan

Step 7: Final Acceptance

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Action	Resources & Documentation
Utility: request walk through for Final Acceptance	▪ Construction documents
Agency & Utility: schedule final walk through and acceptance meeting	▪ Turn over deliverables
Utility: provide final documentation at walk through and acceptance meeting	▪ Final – "as builts" •Drawings & specifications •Commissioning plan •Performance assurance plan •*(real property piece)*
Agency: CO approve final acceptance	▪ Certificate of Completion

Step 7a: Invoicing & Payments

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Action	Resources & Documentation
Agency: set up approval & payment process	
Utility: provide invoices	▪ provide sample in advance
Agency: pay invoices	▪ utility invoice

Step 8: Post-Installation

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Action	Resources & Documentation
Monitor	Performance assurance plan; annual reporting of actual energy and cost savings
Maintain	Implement maintenance plan to optimize efficiency; annual true-up
Approve invoices	Invoices submitted by utility
Monthly or annual payments	
Consider future projects	

FEMP Can Provide Direct Project Assistance

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Technical & procurement assistance for energy and water projects -

- Build partnerships and facilitate relationships
- Project facilitation
- Measurement & Verification Support
- RFP development
- Contracting expertise
- Technical Proposal review
- Process improvement, barrier reduction
- Building core competency
- Finance Workshops

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FEMP Project Facilitators

- Guide agency teams through the process of implementing a financed project
- Provide technical & procurement assistance at various levels of involvement:
  - Partnership Building
  - Advise and Consult
  - In-depth Support

Inter Agency Agreement: Provides for FEMP assistance

Project Facilitation & Technical Assistance from National Laboratory Staff

You Have the Power

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GovEnergy www.govenergy.gov

Send staff to GovEnergy as training

Use FEMP Awards to say thank you to your team

Contact FEMP to get training and awareness materials

http://www1.eere.energy.gov/femp/services/outreach.html

Upcoming Events

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- Next Federal Utility Partnership Working Group (FUPWG) Meeting, Providence Rhode Island
  - April 14 & 15, 2010
  - UESC Workshop April 13, 2010
  - http://www1.eere.energy.gov/femp/news/events_detail.html?event_id=4071
- GovEnergy Workshop and Exposition, Dallas, Texas
  - August 15 – 18, 2010
  - Dallas Convention Center
  - http://www.govenergy.com/index.html

For more information

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

- David McAndrew – DOE FEMP Utility Program Lead
  202.586.7722
  david.mcandrew@ee.doe.gov
- Karen Thomas – UESC Laboratory Lead
  202.488.2223
  karen.thomas@nrel.gov

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Financing
Utility Energy
Services Projects

Financing 101

Understanding Financing – Financing Structure

There are several options that can be considered when looking to obtain the best interest rate. You can obtain two separate loans or one long-term loan.

The two-loan option involves a construction loan, used to pay contractors during the construction period, and a long-term loan that goes into effect once the payments begin.

The construction period interest rate is often based on the London InterBank Offered Rate (LIBOR) index and will probably be higher than the interest rate for the long-term loan. This is partially because there will be no payments on the loan during the construction period. The construction interest rate is also based on the length of the construction period. Look at other construction projects to determine if you are receiving a fair rate.

Structuring one long-term loan – The interest cost that is expected to accrue during the construction period is added to the project cost to determine the total amount to be financed. All of the money is then borrowed up front and then put into escrow until spent (however, it may not make sense to put money in escrow if most will be withdrawn early on).

Both are viable options, but depending on your circumstances one option may be significantly better than the other. In either case, the structure should be negotiated and all applicable interest rates should be known up front.

The financing should be competed among several third party financiers, unless the project is relatively small and/or the utility has already gone through a competition to select a financing partner for federal projects. Internal utility financing is not competitive due to their internal rate of return requirements (usually >10%).

Role of Financial Institution

- Necessary in most projects
- Provides specialized construction & permanent financing
- Offers non-recourse financing
- Works with Prime Contractor (Utility) and the Agency
- Prepares documentation
- Terminology Website: www.investopedia.com

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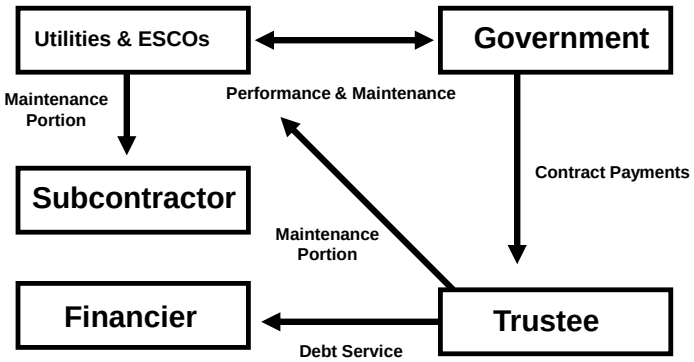
Financing Structure



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Financing 101

Understanding Financing – Contractual Elements that Can Impact Interest Rates

Savings or performance guarantees also affect interest rates. A savings guarantee is more risky than a performance guarantee, and could raise interest rates by 2-3%. The level of measurement & verification and operations & maintenance also affect interest rates if there is a guarantee.

Risk Assignment
Interest rate is dependent upon the risk a financier perceives. Several elements of the contract may increase the perceived risk, such as:

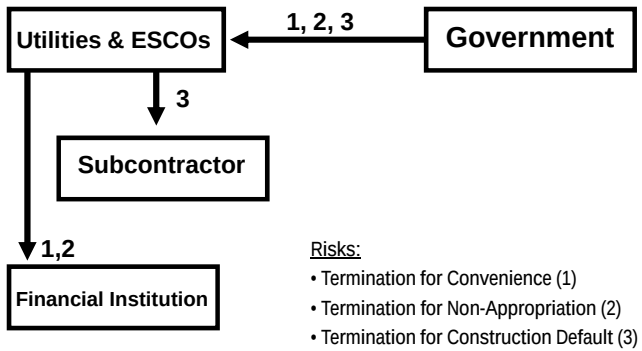
- Termination for Convenience
- Termination for Non-Appropriation
- Termination for Construction Default
- The more risk can be minimized or eliminated, the better the interest rate will be

Performance Risk
After construction is complete and the project is accepted, risk is reduced. This suggests that structuring the loan as two parts, construction and financing, will allow for a better interest rate over the term of the financing.

Elements such as O&M and energy or savings guarantees will add to the possible risk.

Interest rates also depend on the financial strength of the Agency and Utility, the project economics and the dependability, complexity and track record of technologies.

Structure: Risk Assignment



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Performance Risk

- Project Construction -
  - Risk is reduced after acceptance
- Ongoing O&M and Energy Savings Guarantees
  - Financial Strength of ESCO or Utility
    - Other corporate guarantees/credit enhancements
  - Extent of Savings Guarantee
  - Project Economics and Technologies
  - Contractor Competency

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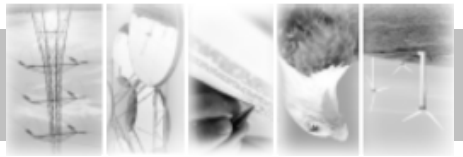

Understanding Financing – Contractual Elements that Can Impact Interest Rates (continued)

The financier requires a Termination Schedule. This is a loan amortization schedule that shows the amount owed over the contract period after acceptance. This schedule will be negotiated and mutually agreed upon by the federal agency, utility and third party financier.

Termination for Convenience clauses also must be contained in the contract. The contracting officer will determine the appropriate clauses. Some of the options include FAR Part 52.249-2, FAR 52.217-2 and FAR 49.5.

Buy-out/buy-down provisions are another important consideration to include in the contract. These provisions allow the federal agency to make additional payments if desired (for example, if there are year-end funds available or other budget dollars). While this is an important option for the federal agency, early payment can adversely impact the financier depending on interest rate fluctuations. Some of the options for buy-out/buy-down provisions include:

- Add lender fees to the capital portion of the Termination Schedule.
- Increase the interest rate to accommodate financier risk (but then the agency pays for the option even if they do not use it).
- Leave it open to be agreed upon at the time of the payment. This option could cause problems if the relationship between utility and agency takes a downturn.
- Indexed formula based on interest rates at time of payment. (Recommended option).

How do Financiers Assess and Price Project Risks and Costs?

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- Evaluate Strength of ESCO or Utility
- Evaluate Economics, Technologies and the Extent of the Energy Savings Guarantee
- Evaluate the Contract's Termination Language
  - Termination Schedule
- Size of Financing
- Term of Financing

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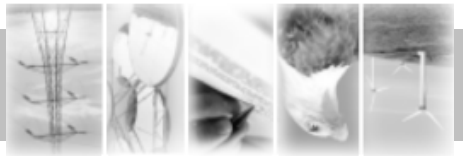

Understanding Financing – Financing Solutions

Utilities rarely use internal financing for projects. They generally turn to a growing number of financial institutions that service a small sector for financed energy efficiency projects such as UESC and ESPC.

As financiers develop the financing proposal for the utility, they will evaluate the strength of the Utility. They review the project technically and economically. Larger project size and longer contract terms have a positive influence on the interest rate because they allow the financier a wider range of investors.

Selecting Financing Solutions

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- Most ESCO/utilities use financial institutions
- Select qualified prime contractors
- Talk to financial institutions
- Use agency resources in analysis
- Ask for alternative structures
- Be flexible on documentation
- Require strong letters of commitment
- Consider the financial risks

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Financing 101

Understanding Financing – Interest Rates and Components of the Interest Rate

The interest rate is determined by the base rate relative to the market rate, increases for contract terms/risks, and increases for interest rate fluctuations.

Components of the interest rate include:

•Base Rate: Dependent on financier. This is the rate the financier starts with. It is most often based on the Treasury Note (T-Notes) rate or SWAP rate.
See: www.federalreserve.gov/releases/h15/current or www.bloomberg.com for pertinent market interest rates.

•Basis Point (BP): A basis point is equal to 1/100 of a percent. (Example: 120 BP = 1.2%)

•Adder: Additional component (such as term, risk, credit rating, market dynamics, and dollar amount) that increases the interest rate. Calculated in basis points.

•Hedge: Basis points that are added to the base rate. These allow for time variance on the loan. Financiers use a hedge to safeguard themselves from drastic fluctuations in interest rate. For our purposes, the hedge may be applied from the time a contract is signed to the acceptance of the installed equipment.

•Typical Hedge: 4-6 BPs per month [0.04% - 0.06% per month]

•*Escrow model is used almost exclusively now.*

Why Interest Rates Vary

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- Performance Risk
  - Project Construction
  - Energy Savings Guarantee
  - Ongoing O&M
- Contract Administration
- Project Requirements
  - Term and Size of Financing
  - Fixed or Variable Rates
  - Additional Financing Fees

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Determining the Interest Rate

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- Interest rate is determined by:
  - Base rate relative to market rate (Treasury Note or SWAP rate)
  - Increases for contract terms/risks (adder)
- Escrow accounts are the main type of financing structure used during construction
- Ultimately, pricing and terms are set by comparing a project's overall risk and return to similar projects in the private sector

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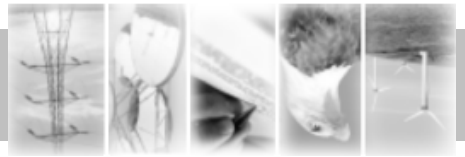
Financing 101



Understanding Financing – Interest Rates and Components of the Interest Rate (continued)

Components of the Interest Rate

- Base Rate
  - Currently based on Treasury Note rate or SWAP rate for payment term and mode of the contract
  - The Treasury Note rate is less volatile
- Spread
  - Basis points (1/100% or .01%) added as a result of lender's perception of project's risk
  - Contributing elements include participant risk (utility/customer), project risk, market dynamics and contract risk (financed amount and term, payment mode and frequency, and other terms/conditions)

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Total Interest Rate Example *

Component	Treasury Note*	SWAP*
10-Year Base Rate	3.68%	4.04%
Spread	4.00%	3.75%
Total	7.68%	7.79%

Websites for rates:

Treasury Rates:

(Historical): http://www.federalreserve.gov/releases/h15/update/

(Real-Time): http://www.bloomberg.com/markets/rates/index.html

SWAP Rates:

(Historical): http://markets.ft.com/ft/markets/researchArchive.asp?report=ICAP

*An Example Only – Not Representative of Actual Rates

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Financing 101

Understanding Financing – Escrow Financing Samples

Escrow Financing Example

Escrow Project Financing Example

Monthly Draws

Assumptions

Interest Rate:	6.72%
Draw Total:	$10,000,000
Capitalized Finance Charges:	$552,577
Total Amount Financed:	$10,552, 577
Monthly Payments:	$121,007
Payment Term (in months):	120
Total Annual Payments:	$1,452,084
Total Payments:	$14,520,840

Payment Mode Comparison

10 Annual-in-Advance Payments:	$1,408,424
Total AIA Payments:	$14,084,240
Total Payment Mode Savings:	$436,600

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Escrow Financing Example

Escrow Funding

Monthly Draws

Interest Rate:	6.72%
Reinvestment Rate:	2.00%
Total Draws:	$10,000,000
Capitalized Finance Charges:	$552,577
Total Amount Financed:	$10,552,577

Month	Date	Percent	Total Draw Amount	Interest Income	Interest Expense	Escrow Balance
0	01-Jun-06	8.33%	$833,333			$9,719,243
1	01-Jul-06	8.33%	833,333	$16,199	$59,094	8,843,014
2	01-Aug-06	8.33%	833,333	14,738	59,094	7,965,325
3	01-Sep-06	8.33%	833,333	13,276	59,094	7,086,173
4	01-Oct-06	8.33%	833,333	11,810	59,094	6,205,555
5	01-Nov-06	8.33%	833,333	10,343	59,094	5,323,470
6	01-Dec-06	8.33%	833,333	8,872	59,094	4,439,915
7	01-Jan-07	8.33%	833,333	7,400	59,094	3,554,887
8	01-Feb-07	8.33%	833,333	5,925	59,094	2,668,384
9	01-Mar-07	8.33%	833,333	4,447	59,094	1,780,403
10	01-Apr-07	8.33%	833,333	2,967	59,094	890,943
11	01-May-07	8.33%	833,333	1,485	59,094	0
Totals		**100%**	**$10,000,000**	**$97,462**	**$650,039**	

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Escrow Financing Example

Escrow Project Financing Example

Quarterly Draws

Assumptions

Interest Rate:	6.72%
Draw Total:	$10,000,000
Capitalized Finance Charges:	$535,008
Total Amount Financed:	$10,535,008
Monthly Payments:	$120,806
Payment Term (in months):	120
Total Annual Payments:	$1,449,672
Total Payments:	$14,496,720

Payment Mode Comparison

10 Annual-in-Advance Payments:	$1,406,079
Total AIA Payments:	$14,060,790
Total Payment Mode Savings:	$435,930

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Escrow Financing Example

Escrow Funding

Quarterly Draws

Interest Rate:	6.72%
Reinvestment Rate:	2.00%
Total Draws:	$10,000,0000
Capitalized Finance Charges:	$535,008
Total Amount Financed:	$10,535,008

Month	Date	Percent	Total Draw Amount	Interest Income	Interest Expense	Escrow Balance
0	01-Jun-06	-	-			$10,535,008
1	01-Jul-06	-	-	$17,558	$58,996	10,493,571
2	01-Aug-06	25.00%	$2,500,000	17,489	58,996	7,952,064
3	01-Sep-06	-	-	13,253	58,996	7,906,321
4	01-Oct-06	-	-	13,177	58,996	7,860,503
5	01-Nov-06	25.00%	2,500,000	13,101	58,996	5,314,607
6	01-Dec-06	-	-	8,858	58,996	5,264,469
7	01-Jan-07	-	-	8,774	58,996	5,214,247
8	01-Feb-07	25.00%	2,500,000	8,690	58,996	2,663,941
9	01-Mar-07	-	-	4,440	58,996	2,609,385
10	01-Apr-07	-	-	4,349	58,996	2,554,738
11	01-May-07	25.00%	2,500,000	4,258	58,996	0
Totals		**100.00%**	**$10,000,000**	**$113,948**	**$648,957**	

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Financing 101

Interest Rate Summary Key Points

- Lenders price to the risks assumed
- Lenders' primary concern is on-time repayment of their investment
- Lenders make their return over time

How to Get the Lowest Interest Rates

- Bundle Projects
- Keep the Financing Term Under 15 Years
- Insure the Government Contract has Desirable Termination Language
- Fix Interest Rates at Time of Award
- Provide Limited or No Energy Savings Guarantees
- Work Only with Companies with the Very Highest Credit Ratings
- Don't Include Other Financing Fees in Rate

Current Market Conditions

- Credit is extremely tight (Supply vs. Demand)
- Credit spreads have widened
- Traditional market economics are not in place
- Markets are erratic
- Transaction scrutiny increased
- Hoping for stabilization in 2009

Contact Information