



Energy Conservation Investment Program (ECIP) and Other Funding

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Office of Assistant Chief of Staff for Installation Management





Why an Energy Program ?

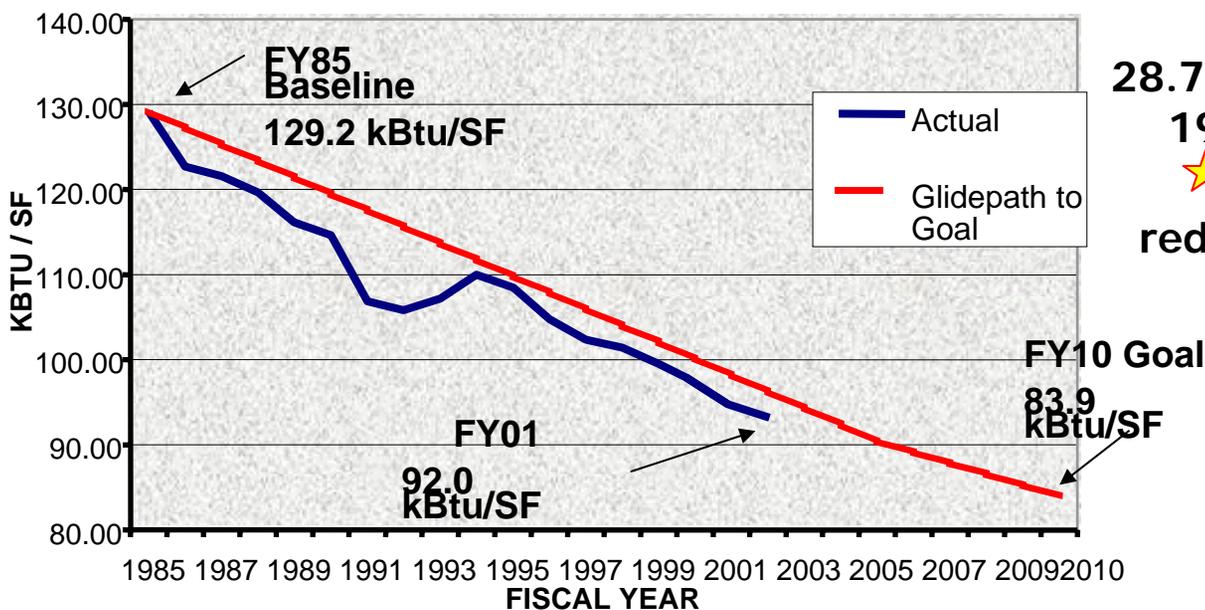
- Energy is critical to Army missions and well being of soldiers, civilians and families
- Army is a big user of energy
 - *High annual dollar bill - \$764 M in FY02*
 - *82 TBTU (40% DOD & 27% Fed facility use)*
- Executive Order 13123, Jun 99 and Energy Policy Act of 1992
- Worldwide sources of energy are limited
- Issues of Global Climate Change, Sustainable Environment, Clean Air, Clean Water



Energy Reduction Goals

- Thru FY02 – Army is 28.7% below FY85 baseline
- E.O. 13123 “Greening the Government Through Efficient Energy Management”
 - Reduce Facilities Energy 35% by 2010 from 1985 baseline
 - Increase use of renewable energy
 - More efficient design and use of ‘Energy Star / Sustainable Design’ products
 - Expand Private Sector financing & Energy Savings Performance Contracts

ENERGY CONSUMPTION PER SQUARE FOOT



**28.7% decrease
1985-2002**
★ ★ ★
**reduced 1.6%
in FY02**



How We Plan to Get There?

- **Energy efficient new design & construction**
- **Energy conservation projects**
 - alternative financing ESPC, UESC
 - direct appropriations ECIP, O&M
- **Purchase/ Invest in renewable energy**
 - Wind generation purchases
 - Solar - Solar Thermal & Photovoltaic
 - Geothermal power generation
 - Biomass generation
- **Privatize/ Modernize Utility Systems**



Energy Efficient New Building Design & Construction

- Infuse energy reduction into new facilities
- Reduce energy budgets for facilities
- Design tools to evaluate energy use and life cycle costs
- Use top 25% of energy efficiency products available
- Adopt new technology in design standards
- Building commissioning & evaluation
- Industry & Trade shows
- In Process Review of new 1+1 barracks design





Energy Conservation Projects

•Alternative Financing

- ✓ Energy Savings Performance Contracts (ESPCs)
 - \$457M investments thru 2002
- ✓ Utility Company Energy Savings Contracts
 - \$70M investments thru 2002

•Direct Appropriated Funds

- ✓ Energy Conservation Investment Program (ECIP)
 - \$10-18M MILCON per year ECIP projects
- ✓ Central Heat Plant Modernization Program
 - \$60M OMA per year over 5 years (FY98-02)

•Other Funds

- ✓ DOE & Army Labs - Demo and Technology Programs



Alternative Financing

Energy Savings Performance Contracts (ESPCs)

- Uses industry expertise & resources
- Army installations have been active participants
- 52 installations, 94 task orders and \$457 million in contractor investments
- Contributed 3.4% towards reduction in energy use

Utility Energy Savings Contracts (UESC)

- 15 installations, \$70 million in investments. Limited opportunities.

Use of ESPC & Utility Programs is key to meeting energy goals



Direct Appropriated Funds

- **Energy Conservation Investment Program (ECIP) - (MILCON)**
 - \$50M/year DoD program (Army share \$10-18M/year)
 - \$87M Army projects during FY91-02
 - Typical projects: Infrared Heating systems, geothermal heat pumps, lighting upgrades, HVAC controls, and photovoltaic power systems
- **Army Direct Funding (OMA and MCA)**
 - Central heating plant modernization program (O&M)
 - Small M&R projects (limited central DA funding)
 - Showcase renewable projects and new technologies
 - MCA new construction and Barracks upgrade



Energy Conservation Investment Program (ECIP)

- **FY05 ECIP Guidance issued (4 June 2003)**
 - HQ-IMA/ Regions to submit FY05 projects by 30 Aug 03
 - Expected Army share of DOD funds – \$12-16 million
 - Requires approved DD1391 from installations
 - Economic analysis summary/ accurate cost estimate
- **FY04 Program Submission**
 - OACSIM provides revised FY04 project list – Oct 03
 - DUSD(I) issue Congressional notification – 1st qtr FY04
- **FY03 Execution Status Report**
 - Goal -- Obligation of FY03 ECIP funds by 30 Sep 03



FY03 ECIP MILCON Projects

REGION	LOCATION	PROJECT NO.	DESCRIPTION	REQUEST (\$000)
NORTHWEST	Tooele AD	58190	Building Energy Upgrades	710
SOUTHWEST	McAlester AAP	54664	Steam System Improvements	600
PACIFIC	Kwajalein	46101	Improve Building Efficiencies	650
NGB	Gowen Field	60065	Facility Energy Improvements	790
NORTHEAST	Ft Drum	54863	High Efficiency Gas Boilers	4,200
SOUTHEAST	Ft Campbell	49877	Digital Controls, Barracks	1,100
SOUTHEAST	Redstone ARS	49404	Electric Peaking Generators	4,000
NGB	Camp Williams	NG043	Install 650kw Wind Turbine	752
			Total	12,802



FY04 ECIP MILCON Projects

REGION	LOCATION	PROJECT NO.	DESCRIPTION	REQUEST (\$000)
NORTHEAST	Ft Lee	51353	High Efficiency Lighting	980
NORTHEAST	Ft Drum	54864	Utility Monitor & Control Sys	5,500
EUROPE	Wuerzberg	52873	Convert to Hot Water Heating, Harvey Barracks	1,550
SOUTHEAST	Ft Campbell	58343	Utility Control System, Ph II	1,550
SOUTHWEST	Ft Sill	55220	Energy Monitoring & Control Sys	1,200
NGB	Leesburg TA	450158	Facility Energy Improvements	
PACIFIC	Kwajalein	50862	Electric Power, Photovoltaic	930
EUROPE	Mannheim	50428	Digital Control System	2,600
SOUTHWEST	Ft Sill	55221	Geothermal Heat Pumps	6,500
EUROPE	Wuerzberg	52872	Convert to Hot Water Heating, Larson Barracks	1,900
SOUTHEAST	Ft Campbell	49879	Digital Controls for Hangars	980
SOUTHEAST	Ft Campbell	49882	Digital Controls for Admin	1,150
			Total	25,610



Utility Modernization Program

Upgraded Central Heating Plants & Distribution Systems

\$60 M/year FY1998-2002
\$300 M Investment

- Centrally managed program -- modernize 43 plants/ 17 installations
- Replaced boilers, upgraded plants & distribution systems, modernized equipment, controls, decentralized heating systems
- Defense Planning Guidance – upgrade infrastructure to C-2 condition by 2010
- Installations program major SRM repair projects (OMA funds)





Purchase Renewable Energy

Army Purchased 19 Million KWH of Green Power in Aug 02

National Capital Region – Ft McNair, Walter Reed, Adelphi Labs

Source: Mountaineer Wind Energy Center

“The Army is committed to improving the environment through the use of green technologies such as cost-effective wind power.”





Renewable & Distributed Energy Technologies

Photovoltaic

- New Technology
- 32.3% Efficient
- Double current ratings



Wind Power



Fuel Cells

- Central Heating Plants - 11 Sites
- Hospital Utility Plants - 7 Sites
- Pools/Fitness Centers - 3 sites



Natural Gas Cooling

- 12 Sites
- Benefits: Demand savings and lower global emissions

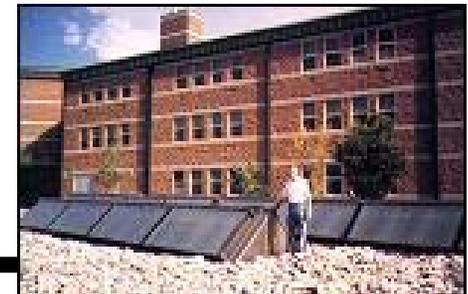


- Costs are Decreasing
- Purchase "Green Power" where available.
- Be a catalyst for change

Solar Water Heating

Water heating load relatively consistent

- Supplements or displaces electric water heater





Renewable & Distributed Energy Technologies

Photovoltaic Applications



Grid Connected Array



Mobile Power Unit



Communications



Lighting



Utilities Strategy

OSD Guidance:
Evaluate all
utilities for privatization by 30
Sep 05

DPG Guidance:
Modernize all
utilities by 2010

Privatization

Privatization: *“Transfer of Ownership, Operation, Maintenance, and Improvement of Army Utility Plants and Systems to a Local Municipal, Private, or Regional Utility.”*

Modernization

Modernization: *Modernize Utilities that are Exempted from Privatization by 2010*



Utility Privatization Program

"...Privatization allows installation commanders to focus on core defense missions and functions by relieving them of activities that can be done more efficiently and effectively by others. The Defense Components shall complete a privatization evaluation of each utility system at every Active Duty, Reserve, and Guard installation, within the United States and overseas by September 30, 2005." – *OSD guidance –9 Oct 2002*

351 Army Utility Systems (Electric, Natural Gas, Water, Wastewater)

Army Policy
Privatize all systems
when economical

*Investment Strategy
to Re-Capitalize Army
Utility Systems
Infrastructure*



STATUS	
Systems Privatized	78
Pending Contract Award	4
Exempt	27
Not Economical	3
GOCOs	26
Negotiating	98
Solicitation Open	7
Under Development	108
Total	351



Utility Modernization Program

- **Defense Planning Guidance – upgrade infrastructure to C-2 condition by 2010**

- **FY06-09 – (systems exempted/ unable to privatize) program funds in POM for modernization of natural gas, electrical, water and wastewater systems**

- **Project Criteria:**
 - **Installation Status Report (ISR) Rating**
 - **Unit cost of service (O&M and repair)**
 - **HQ-IMA/ Region priority recommendation**
 - **Potential environmental degradation/ cost avoidance**
 - **Operations & maintenance savings achieved**



Energy Program Initiatives

- ✓ Installation Energy Security Planning -- ensuring critical energy needs can be supplied
- ✓ Western Power Grid Energy Study -- base-wide audits for energy efficiency and peak electrical load reduction
- ✓ DoD Renewable Energy Assessment -- identifying potential for renewable resources -- wind, photovoltaic, geothermal
-- Air Force is DOD lead agency
- ✓ Sustainable Design and Development (SDD) and "Green Power" clauses in electricity contracts



Summary

- **Use funding opportunities in OMA, MCA and ECIP to continue program success**
 - *energy reduction of 28.8% since FY85*
- **Expand partnerships with industry to implement latest technologies and management techniques at Army installations.**
- **Make focused Army investments in renewable and new technologies.**



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ACSIM Energy Website:
<http://www.hqda.army.mil/acsimweb/fd/policy/energycur.htm>