



Please be courteous to our speakers



**Please
Turn off all cell phones
and
Set pagers to vibrate**



(Phasers will be set to stun!)



Appropriations and Private Financing

A Look Back



Ask Questions



INTERESTING FACTS

- Standard US Rail Gage 4.708 FEET
- Letters in the Hawaiian alphabet 12
- Hours in the day 24
- Beers in a case (coincidence?) 24
- TOTAL 64.708*

* accurate and factual



Root Causes of Energy Emphasis ?

- Cost effective facilities management is a low priority for all agencies - it's not "mission essential"
- All levels of government focus on short-term optimization
- Organizations fixate on the crisis- du-jour
- Facilities budgets historically have fostered -
 - > Lowest first cost
 - > Maximum square footage rather than life cycle cost
 - > Break-down maintenance
- No incentives or clear responsibilities for good facilities management
- Results = Insurmountable Opportunities



Energy Program History

- 1960s Mil Depts' initiatives - Facilities utilities cost reduction
- 1974 first Oil embargo
 - > Pres. Nixon issued Ex. O. - 7% Federal energy use reduction
- 1975 Energy Conservation Policy Act
- 1977 Ex. O. 12003 - 20% BTU/FT² facility goal (1975 - 1985)
- 1978 second oil embargo
 - > National Energy Conservation Policy Act
- 1986 DoD set FY1985-1995 goal of add'l. 10%
- 1988 Fed. Energy Management Improvement Act (10% goal)
- 1990 Ex. O. 12759 goal of 20% BTU/FT² (FY1985-2000)



Energy Program History

continued

- 1992 Energy Policy Act
 - > 10% BTU/FT² reduction goal (FY1985-1995)
 - > 20% BTU/FT² reduction goal (FY1985-2000)
 - > (incl. ESPC authority and UESC encouragement)
- 1994 Ex. O. 12902
 - > 30% BTU/FT² reduction goal (FY1985-2005)
 - > 20% Industrial Energy Efficiency Improvement
- 1996 New Congress cut agencies energy appropriations
- 1999 Ex. O. 13123
 - > 35% BTU/FT² reduction goal (FY1985-2005)
 - > 25% Industrial Energy Efficiency Improvement
- 2001 National Energy Plan
- 2002 Continuing Congressional emphasis - and increased goals



2002 Continual Reassessment of Needs

- With each new goal a new resource need was established
- 1/3 of goal to be accomplished by improved O&M
- 1/3 from personnel awareness
- 1/3 from capital improvements to infrastructure

Hindsight:

- Estimates of savings from O&M were unrealistic (Crummy O&M was the reason there was so much waste to eliminate)
- Estimates of savings from awareness failed to include need for continuing awareness reinoculation

June 2-5, 2002

www.energy2002.ee.doe.gov

7



2002 Continuing Constraints

- In-house energy project identification expertise is limited
- In-house engineering and design is limited
- In-house operations and maintenance is limited
- In-house management span attention is limited (the lack of adequate resource allocation to intelligent facility management was the root of the basic in-efficiency)
- Congress is a fickle friend in the best of times
- Roller-coaster of program support and resources led to program inefficiencies

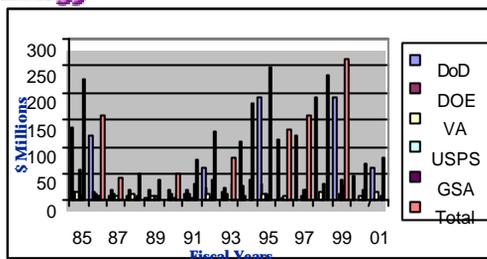
June 2-5, 2002

www.energy2002.ee.doe.gov

8



2002 Appropriations History



June 2-5, 2002

www.energy2002.ee.doe.gov

9



2002 Appropriated funds and In-house Personnel Pros

- Funds spent as available
- Lowest interest rate on borrowed money
- No profit to be paid
- In-house personnel rates considered low
- Existing knowledge of buildings and systems
- Standard design-bid-build process is relatively uncomplicated

June 2-5, 2002

www.energy2002.ee.doe.gov

10



2002 Appropriated funds and In-house Personnel Cons

- Appropriated funds are inadequate to meet objectives
e.g. DoD needs \$285 M per year - \$57 M in FY01
- Force reduction has significantly reduced technical expertise
- Conservation "does not compete well" with mission requirements
- Maintenance is on breakdown basis - even new systems
- There is very little incentive for long term cost-effective focus
- Wait for limited appropriated funds results in significant lost savings --

Lost savings ?

\$1 billion per year = \$2.7 million per day = \$113,000 per hour
= 23 taxpayers average annual payment per hour of delay

June 2-5, 2002

www.energy2002.ee.doe.gov

11



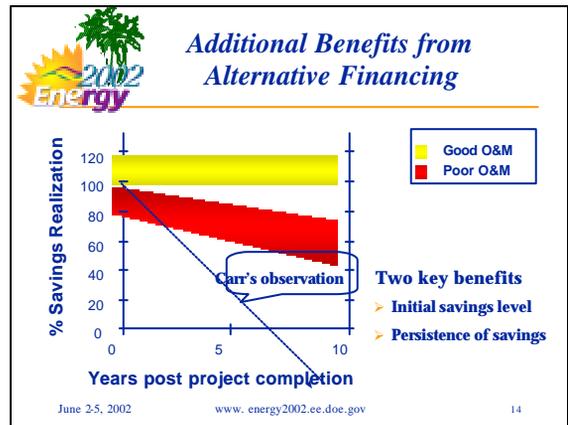
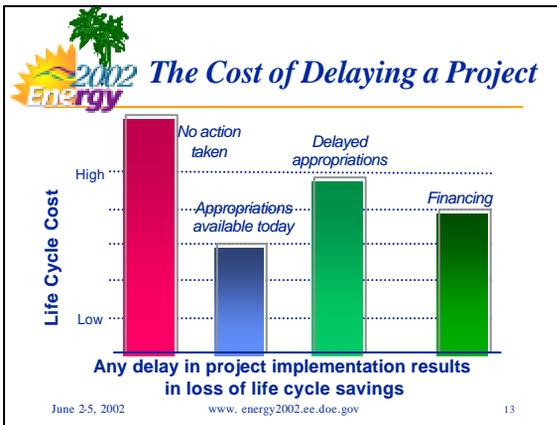
2002 Available Alternatives

- Utility Company Incentive Programs offered to all customers
- Energy Savings Performance Contracts
- Each have their individual pros and cons - but:
- Alternatively financed mechanisms allow the government to access resources to accomplish savings and benefits that can not be attained otherwise.
- In most cases alternative financing is more cost effective due to the lost savings from delay in the "normal" process and poor continual operations and maintenance.

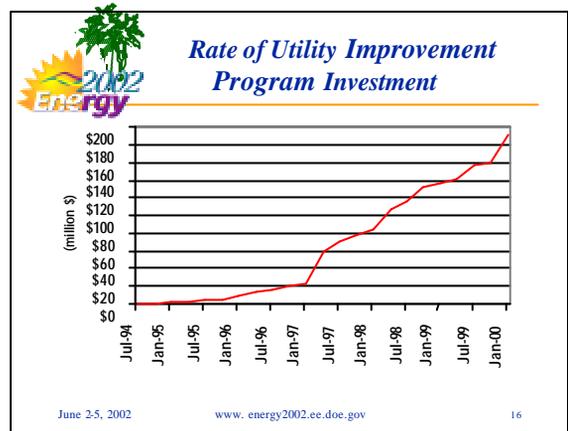
June 2-5, 2002

www.energy2002.ee.doe.gov

12



- ### 2002 Energy Utility Conservation Programs Evolution
- 1980 Rebates and Incentives - DSM
 - 1987 Demand Side Management bidding
 - approx 30 utility companies in 14 states
 - an alternative to plant construction
 - 1990s Customized Programs
 - GSA Area-wide contract Attachments
 - Basic Ordering Agreements
 - Agency Model Agreements
 - Site-specific Agreements
- June 2-5, 2002 www.energy2002.ee.doe.gov 15



- ### 2002 Energy Energy Savings Performance Contracts
- DoD experience with Shared Energy Savings Contracts
 - Individual ESPCs can take years
 - e.g. Forrestal RFP issued in 1990 - project in place in 1994
 - Approximately 40 individual ESPCs in 10 years of authority
 - Regionals competitively select ESCOs to negotiate delivery orders
 - DOE - Western, Southeast, Central/Midwest, Northeast/MidAtlantic
 - Technically specific, e.g. Concen. Solar, P.V., GeoHP, Biomass
 - Army
 - Air Force
- June 2-5, 2002 www.energy2002.ee.doe.gov 17

2002 Energy Rate of Energy Investment

Project Investments By Type (millions of dollars)							
	FY 1988 - 1997	FY 1998	FY 1999	FY 2000	FY 2001		
Site-Specific ESPC	\$112.7	\$72.4	\$92.4	\$8.0		\$285.5	
DOE Super ESPC		\$6.6	\$41.0	\$62.3	\$120.4	\$230.3	
Army IDIO ESPC		\$10.2	\$96.2	\$113.1	\$70.0	\$289.5	
Air Force IDIO ESPC			\$55.0	\$103.9	\$45.1	\$204.0	
Total ESPCs	\$112.7	\$89.2	\$284.6	\$287.3	\$235.5	\$1,009.3	
UESC		\$138.9	\$53.4	\$110.7	\$191.2	\$180.4	\$674.6
Appropriations		\$1,455.4	\$261.3	\$205.2	\$121.1	\$130.0	\$2,173.0
Total	\$1,707.0	\$403.9	\$600.5	\$599.6	\$545.9	\$3,856.9	

June 2-5, 2002 www.energy2002.ee.doe.gov 18



Choosing the Appropriate Alternative

Form an Acquisition Team of **All Interested Parties**

1. Define Project Goals and Objectives
2. Identify Site-Specific Constraints
3. Estimate the Potential Energy Savings
4. Compare and Evaluate the Funding Options
5. Consider the Site Resources Required
6. Consider the Allocation of Responsibilities
7. Select a Financing Method

Document the Decision

www.eren.doe.gov/femp/utility/finance_option.html

June 2-5, 2002

www.energy2002.ee.doe.gov

19



The Key to Success is to Develop a Different Attitude

Financing is a **Partnership** - work together

Use Other Peoples' **Expertise** and Money

Energy Waste Is A Resource

Learn to Deal with Indecision Makers

Do It Right the First Time

Know It's Never Really Over

Steal Good Ideas

Support Your Local Champion!

June 2-5, 2002

www.energy2002.ee.doe.gov

20



Alternative Financing Lessons Learned

Energy Champion is critical

All parties should be involved from the beginning, and be comfortable with the process

Partnership formation is critical

POA&M with responsibilities is critical

Experience is the best teacher - get help from someone who has done it.

The Devil is in the Details

eren.doe.gov/femp/resources/training/fy2002_uesc_projects.html

June 2-5, 2002

www.energy2002.ee.doe.gov

21



UESC LESSONS LEARNED

- Financing Utility Energy Services Contracts
 - Understanding Financing Terms
 - Financial Market Fluctuations
 - Ten Ways to Lower Perceived Risk and Rates
 - Using Annual Payments to Reduce Total Interest
 - Recommended Buy Down/Buy Out Approaches
 - Minimizing Prepayment Costs
 - Prepayment Formula Clause
 - Competition Between Franchised Utilities
 - Water Conservation Best Practices
- www.eren.doe.gov/femp/utility/lessons_learned.html

June 2-5, 2002

www.energy2002.ee.doe.gov

22



QUESTIONS ?

COMMENTS ?

Millard Carr, P.E., C.E.M.

NRGMGTSL@EROLS.COM

June 2-5, 2002

www.energy2002.ee.doe.gov

23