



An Energy Efficiency Workshop & Exposition

Palm Springs, California

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and

Set pagers to vibrate



(Phasers will be set to stun!)



An Energy Efficiency Workshop & Exposition

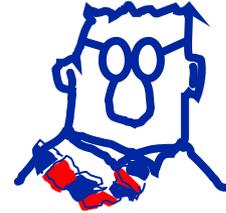
Palm Springs, California

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



2002 *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**



2002 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**

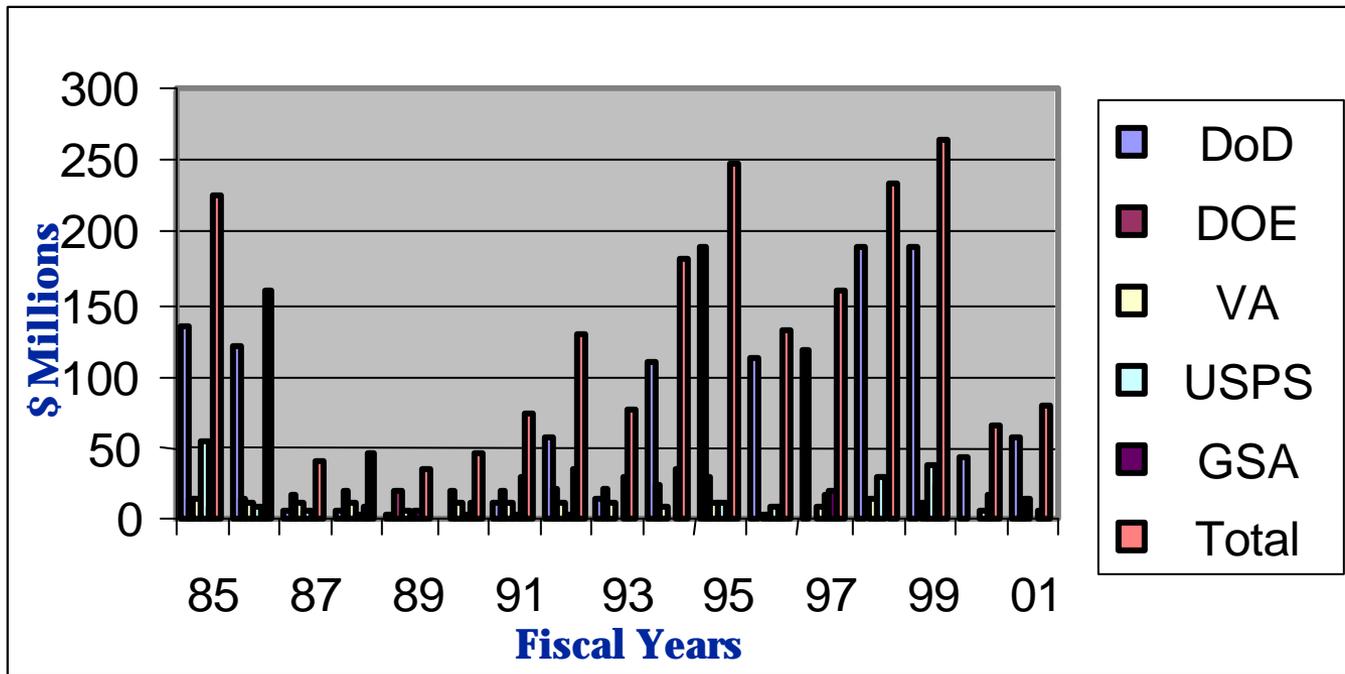


2002 Continuing Constraints

- ❑ **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**



Appropriations History





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**



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



Available Alternatives

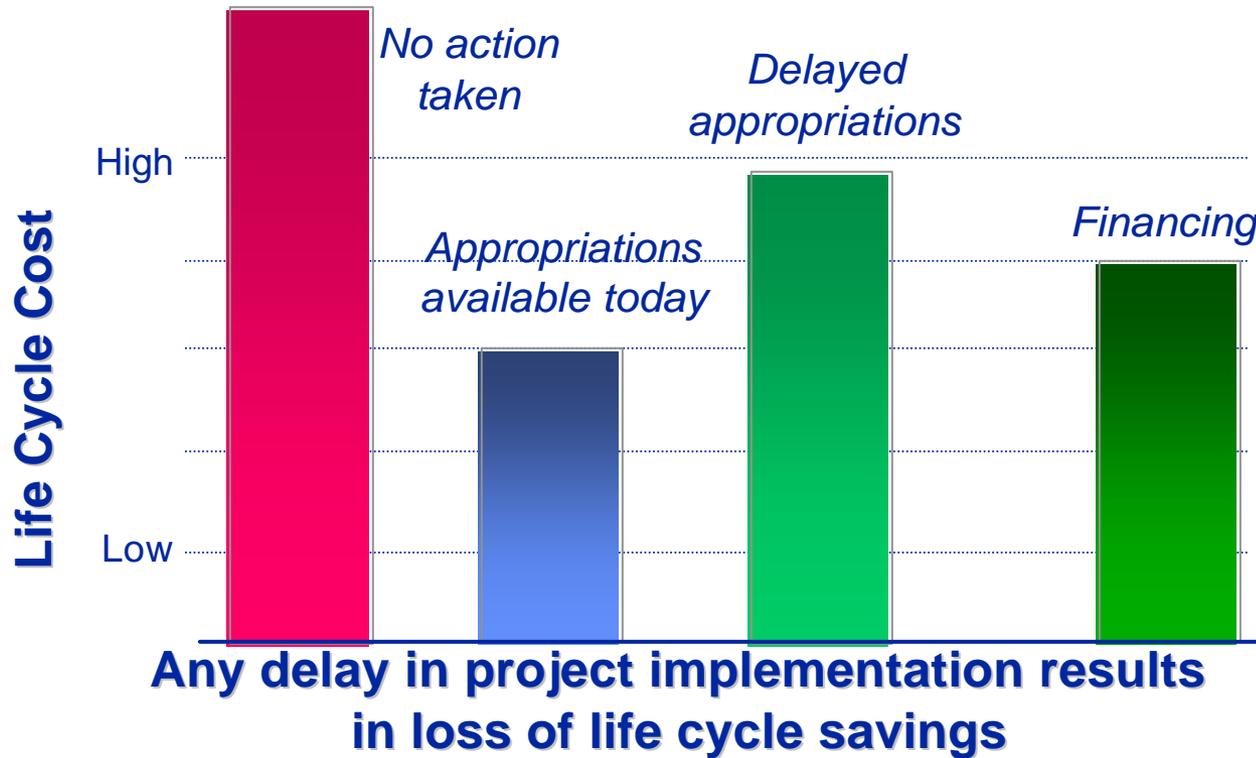
- **Utility Company Incentive Programs offered to all customers**
- **Energy Savings Performance Contracts**

- **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.**

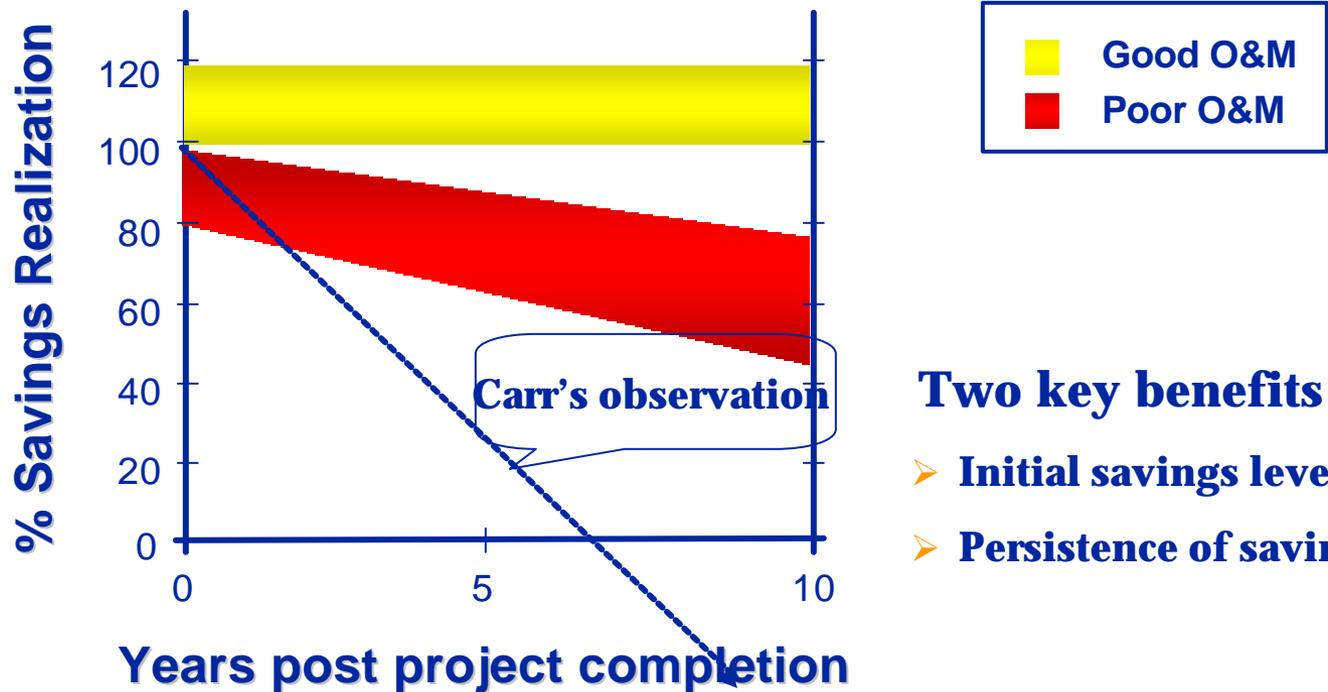


The Cost of Delaying a Project





Additional Benefits from Alternative Financing



Two key benefits

- **Initial savings level**
- **Persistence of savings**

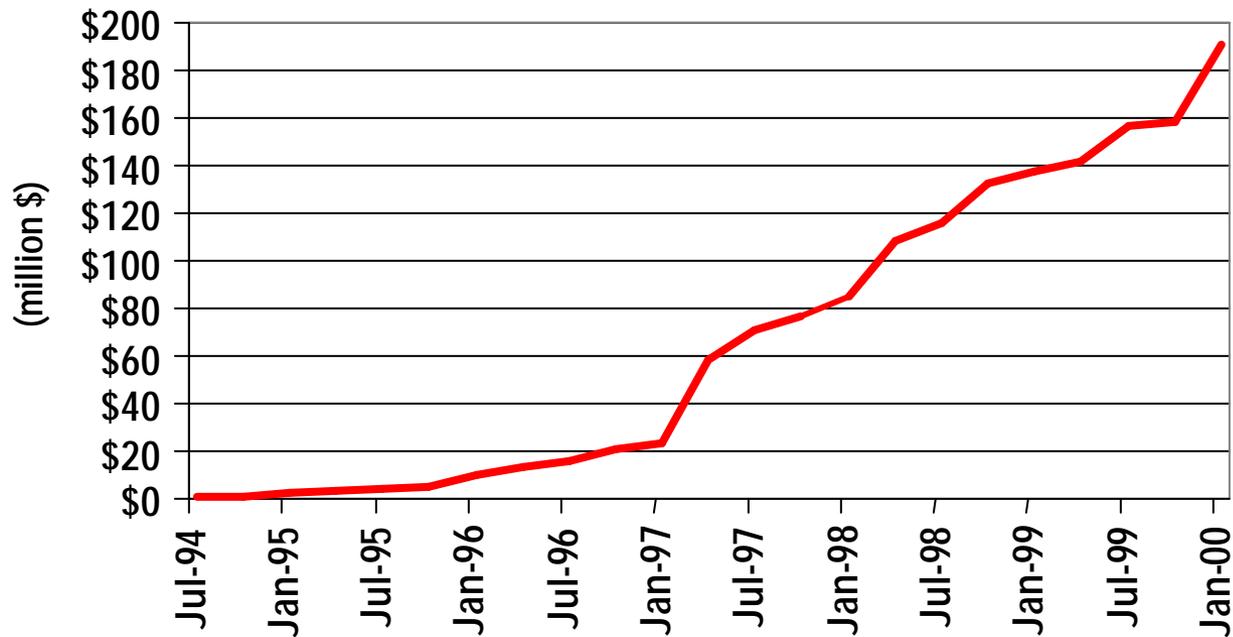


Utility Conservation Programs Evolution

- **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**



Rate of Utility Improvement Program Investment





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**



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 IDIQ ESPC		\$10.2	\$96.2	\$113.1	\$70.0	\$289.5
Air Force IDIQ 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



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



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!



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



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



QUESTIONS ?

COMMENTS ?

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www.energy2002.ee.doe.gov

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