Assessing the Federal Commitment to ESPC

Donald Gilligan
NAESCO
Federal Workshop
March 19, 2010

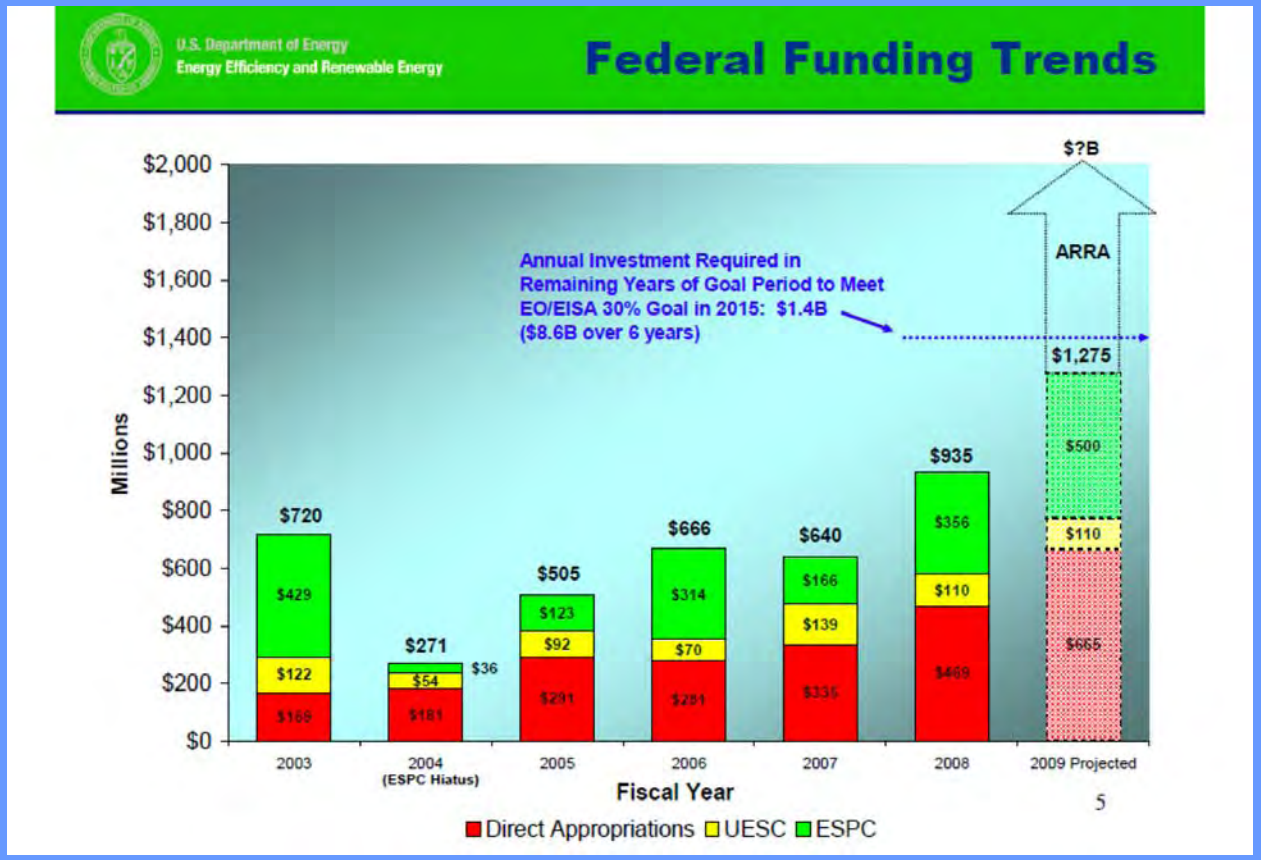
Presentation Overview

- Federal Mandates for Energy Efficiency
- Quick History of Federal ESPC
- Alternatives Available to Meet Mandates
- Some Objections to ESPC

Federal EE Mandates

- EISA 2007 – reduce EI by 30% by 2015
- Obama 2/09 – green 75% of buildings
- Obama 10/09 – federal GHG reduction
- Obama 1/10 – federal GHG target of 28%

Meeting the Goals



Meeting the Goals – 2003-2008

- Total of about $3.74 billion invested
- Average about $622 million per year
  - Direct Appropriations -- $1.73 billion (46%)
  - UESC -- $588 million (16%)
  - ESPC -- $1.4 billion (38%)

Meeting the Goals by 2015

- Need about $8.6 billion total
- Average about $1.4 billion per year
- Increase of about 225%
- Three potential sources
  - Direct Appropriations
  - UESC
  - ESPC

Direct Appropriations

- Average ≈ $288 million per year
- Range has been $169 M to $469 M
- Need almost 5x average to meet goals
- Tight federal budget

Wait for Appropriations?

- Appropriated projects always cheaper
- No real cost to delay project

Appropriated Projects not Cheaper

"Using regression analysis techniques, the study team found no statistically significant differences between the all-in prices for ECMs implemented through Super ESPCs and comparable ECMs funded through appropriations. The analysis showed that the pricing obtained through Super ESPCs, which use a design/build approach negotiated for best value, was as good as the pricing obtained for the appropriations-funded projects in the traditional bid-to-spec competitive procurements." (ORNL at 67)

Don’t Wait, Borrow

“The initial applications of the cost-analysis methods demonstrated in this report and the parameterized results only reinforce the traditional knowledge in federal energy management: If appropriations are in hand, using them to directly fund energy projects results in the lowest life-cycle cost, assuming that operating projects are achieved on a short schedule and that their savings persist. However, in recent years appropriations have been insufficient to directly fund all life-cycle cost-effective retrofit projects, and it appears unlikely that Congress will place a higher priority on funding such projects in the near future than it has in the recent past. Lacking sufficient appropriations, the next best thing in terms of life-cycle cost is to finance projects rather than wait for appropriations.” (ORNL at 68)

Calculating the Cost of Delay

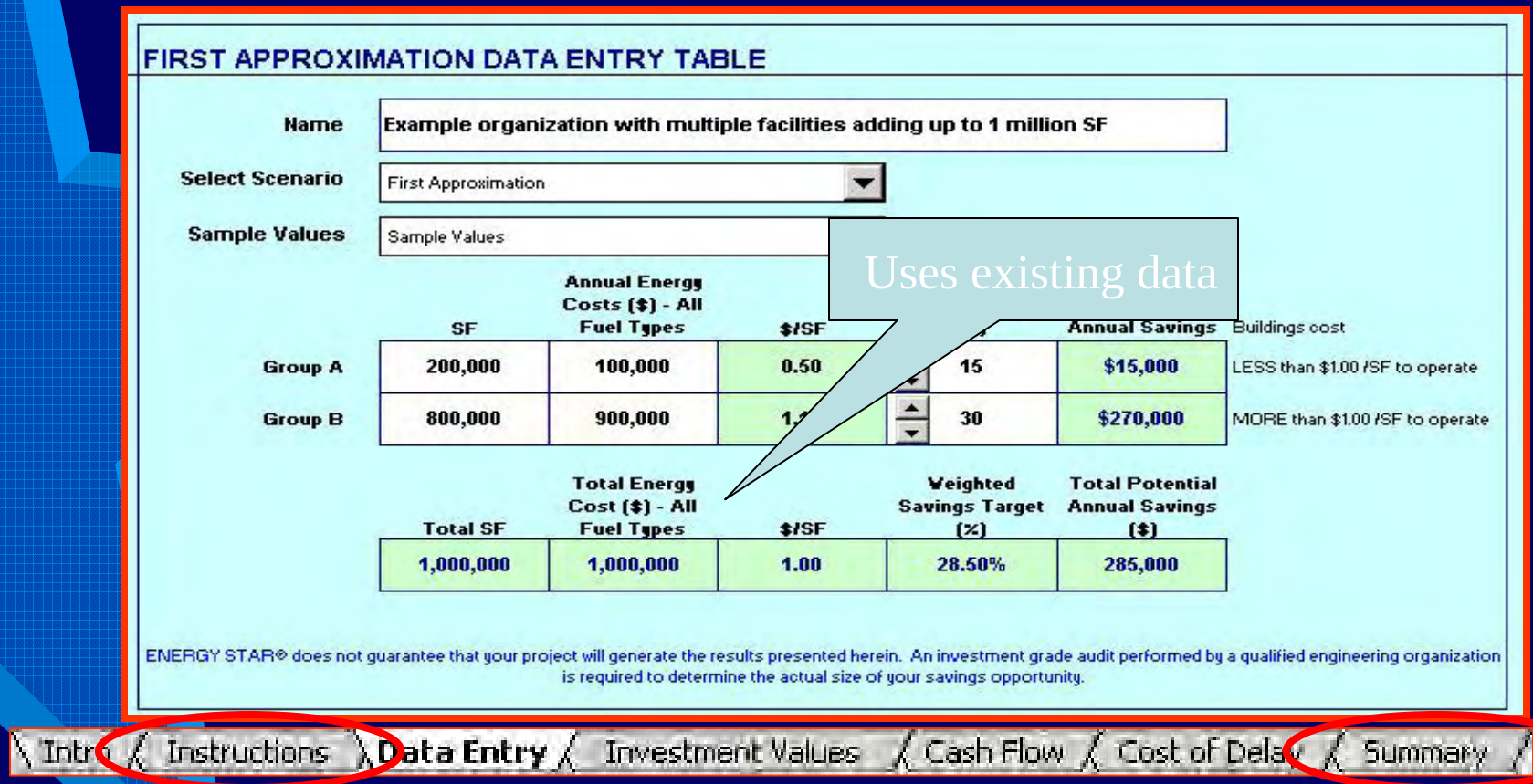
Cash Flow Opportunity Calculator

- Simple to use
- Illustrates cost of delay
- Customers can confirm results
- Answers…
  - How much equipment can be purchased from savings
  - Whether it is better to wait and use future cash
  - If money is being lost waiting for better interest rate

Cash Flow Opportunity Calculator

http://www.energystar.gov/ia/business/bus_financing_cfo_calculator.xls

CFOC: Overview



CFOC: Investment Value

FIRST APPROXIMATION INVESTMENT OPPORTUNITY

	Group A	Group B	Total Utility Bill
Annual Utility Bills	$100,000	$900,000	$1,000,000
Annual Potential Savings	$15,000	$270,000	$285,000

Potential Annual Savings = Cash Flow Opportunity

Use Sample Values

What Can This Annual Cash Flow Buy?

Calculate

Assuming an interest rate of	5.00	%	You may change these values anytime. If you would like to see the sample values, please click on the Use Sample Values button.
Assuming a term of	7	Year(s)	
Savings used to pay energy investments	90	%	

Taken from operating funds, these savings could finance energy projects equal to: _____ **without increasing today's capital and operating budgets.**

Contribution that your operating budget can make towards energy improvements		/SF	Median project investment ranges between $1 - 3/ft^2.*
Simple Payback		Year(s)	Consider blending short- and long-term projects to maximize use of the savings.
		Month(s)	

*Market Trends in the U.S. ESCO Industry: Results from the NAESCO Database Project (http://www.naesco.org/ESCO_Mkt_Trends_final.pdf), May 2002

Disclaimer

CFOC: Investment Value

FIRST APPROXIMATION INVESTMENT OPPORTUNITY

	Group A	Group B	Total Utility Bill
Annual Utility Bills	$100,000	$900,000	$1,000,000
Annual Potential Savings	$15,000	$270,000	$285,000

Potential Annual Savings = Cash Flow Opportunity

Use Sample Values

Calculate

What Can This Annual Cash Flow Buy?

Assuming an interest rate of	5.00	%
Assuming a term of	7	Year(s)
Savings used to pay energy investments	90	%

You may change these values anytime. If you would like to see the sample values, please click on the Use Sample Values button.

Taken from operating funds, these savings could finance energy projects equal to $1,512,000 without increasing today's capital and operating budgets.

Contribution that your operating budget can make towards energy improvements		/SF	Median project investment ranges between $1 - 3/ft^2.*
Simple Payback		Year(s)	Consider blending short- and long-term projects to maximize use of the savings.
		Month(s)	

*Market Trends in the U.S. ESCO Industry: Results from the NAESCO Database Project (http://www.naesco.org/ESCO_Mkt_Trends_final.pdf), May 2002

Disclaimer

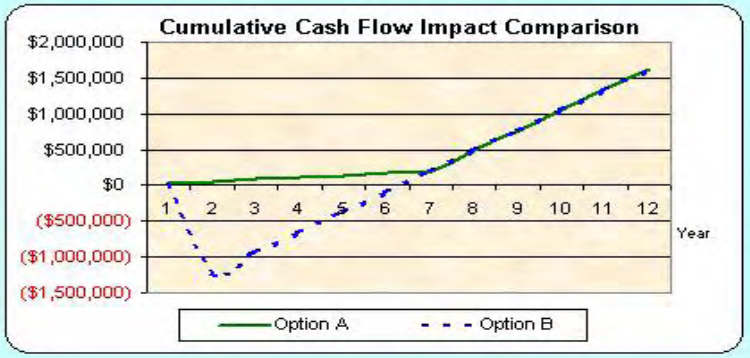
CFOC: Simple Payback

FIRST APPROXIMATION CASH FLOW OPPORTUNITY

Click this button if you would like to transfer values from Investment Values page. Year(s) postponed is given as 2 years.

Use Investment Values

Project cost	1,512,000	$
Simple payback	5	years
	4	month(s)
Interest rate	5.00	%
Financing term	7	years
Year(s) postponed	1	



	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
Year	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow
0	$285,000	($256,446)	$28,554	$28,554	$0	$0	$0	$0
1	$285,000	($256,446)	$28,554	$57,109	$285,000	($1,512,000)	($1,227,000)	($1,227,000)
2	$285,000	($256,446)	$28,554	$85,663	$285,000	$0	$285,000	($942,000)
3	$285,000	($256,446)	$28,554	$114,217	$285,000	$0	$285,000	($657,000)
4	$285,000	($256,446)	$28,554	$142,772	$285,000	$0	$285,000	($372,000)
5	$285,000	($256,446)	$28,554	$171,326	$285,000	$0	$285,000	($87,000)
6	$285,000	($256,446)	$28,554	$199,880	$285,000	$0	$285,000	$198,000
7	$285,000	$0	$285,000	$484,880	$285,000	$0	$285,000	$483,000
8	$285,000	$0	$285,000	$769,880	$285,000	$0	$285,000	$768,000
9	$285,000	$0	$285,000	$1,054,880	$285,000	$0	$285,000	$1,053,000
10	$285,000	$0	$285,000	$1,339,880	$285,000	$0	$285,000	$1,338,000
11	$285,000	$0	$285,000	$1,624,880	$285,000	$0	$285,000	$1,623,000

Net Present Value of Option A	$1,042,136	Net Present Value of Option B	$883,170

For purposes of this calculation, all cash flows are being discounted at the interest rate indicated in cell G7 - financing paid monthly in arrears.

Disclaimer

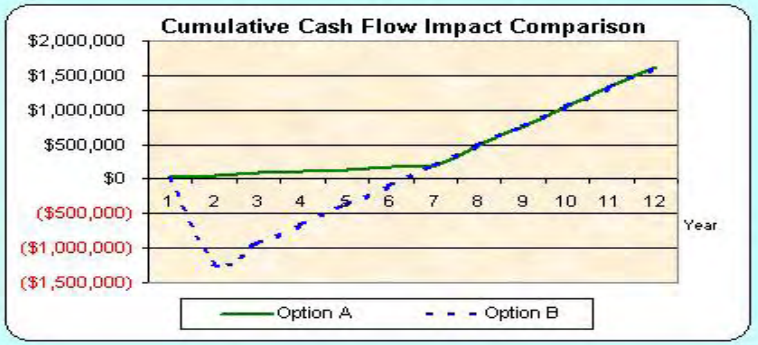
CFOC: Net Present Value

FIRST APPROXIMATION CASH FLOW OPPORTUNITY

Click this button if you would like to transfer values from Investment Values page. Year(s) postponed is given as 2 years.

Use Investment Values

Project cost	1,512,000	$
Simple payback	5	years
	4	month(s)
Interest rate	5.00	%
Financing term	7	years
Year(s) postponed	1	



	Option A (Fast Track Financing)				Option B (Waiting for Cash)			
Year	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow	Savings	Cost	Annual Cash Flow	Cumulative Cash Flow
0	$285,000	($256,446)	$28,554	$28,554	$0	$0	$0	$0
1	$285,000	($256,446)	$28,554	$57,109	$285,000	($1,512,000)	($1,227,000)	($1,227,000)
2	$285,000	($256,446)	$28,554	$85,663	$285,000	$0	$285,000	($942,000)
3	$285,000	($256,446)	$28,554	$114,217	$285,000	$0	$285,000	($657,000)
4	$285,000	($256,446)	$28,554	$142,772	$285,000	$0	$285,000	($372,000)
5	$285,000	($256,446)	$28,554	$171,326	$285,000	$0	$285,000	($87,000)
6	$285,000	($256,446)	$28,554	$199,880	$285,000	$0	$285,000	$198,000
7	$285,000	$0	$285,000	$484,880	$285,000	$0	$285,000	$483,000
8	$285,000	$0	$285,000	$769,880	$285,000	$0	$285,000	$768,000
9	$285,000	$0	$285,000	$1,054,880	$285,000	$0	$285,000	$1,053,000
10	$285,000	$0	$285,000	$1,339,880	$285,000	$0	$285,000	$1,338,000
11	$285,000	$0	$285,000	$1,624,880	$285,000	$0	$285,000	$1,623,000

Net Present Value of Option A	$1,042,136	Net Present Value of Option B	$883,170

For purposes of this calculation, all cash flows are being discounted at the interest rate indicated in cell G7 - financing paid monthly in arrears.

$1,042,136

$883,170

CFOC: Break-Even Point

FIRST APPROXIMATION COST OF DELAY

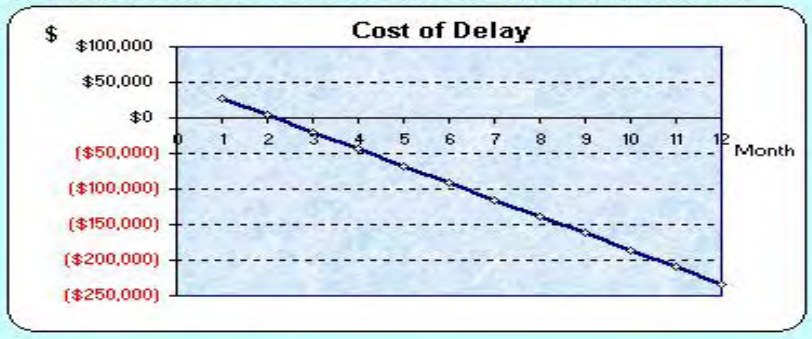
Comparative Interest Rate Analysis

Use Cash Flow Values

Interest rate of immediate financing	5.00	%
Interest rate of a lower financing	4.00	%
Cost of the equipment	$1,512,000	
Simple payback	5	year(s)
	4	month(s)
Potential annual savings	$285,000	
Term of financing	7	year(s)
Lower interest rate savings	$51,400	
utility bills	$23,800	/ month
Break-Even Point	2.2	month(s)
Opportunity cost if delayed 12 months*	15.4%	

*The opportunity cost is 12 months of lost savings divided by the original project cost.

Break-Even Point 2.2



Month	Balance at beginning of month	Amount lost in monthly utility bills	Balance at end of month
1	$51,400	$23,800	$27,700
2	$27,700	$23,800	$3,900
3	$3,900	$23,800	($19,800)
4	($19,800)	$23,800	($43,600)
5	($43,600)	$23,800	($67,300)
6	($67,300)	$23,800	($91,100)
7	($91,100)	$23,800	($114,800)
8	($114,800)	$23,800	($138,600)
9	($138,600)	$23,800	($162,300)
10	($162,300)	$23,800	($186,100)
11	($186,100)	$23,800	($209,800)
12	($209,800)	$23,800	($233,600)

To see values from the Cash Flow worksheet, click the Use Cash Flow Values button in the upper right corner of this sheet. To close the spreadsheet, simply click the Save & Exit button on the CFO Calculator toolbar.

Disclaimer

CFOC: Opportunity Cost

FIRST APPROXIMATION COST OF DELAY

Comparative Interest Rate Analysis

Use Cash Flow Values

Interest rate of immediate financing	5.00	%
Interest rate of a lower financing	4.00	%
Cost of the equipment	$1,512,000	
Simple payback	5	year(s)
	4	month(s)
Potential annual savings	$285,000	
Term of financing	7	year(s)
Lower interest rate savings	$51,400	
Amount lost in utility bills	$23,800	/ month
Break-Even Point	3.2	month(s)
Opportunity cost if delayed 12 months*	15.4%	ed bill

Opportunity Cost if delayed 12 months*

Month	Balance at beginning of month	Amount lost in monthly utility bills	Balance at end of month
1	$51,400	$23,800	$27,700
2	$27,700	$23,800	$3,900
3	$3,900	$23,800	($19,800)
4	($19,800)	$23,800	($43,600)
5	($43,600)	$23,800	($67,300)
6	($67,300)	$23,800	($91,100)
7	($91,100)	$23,800	($114,800)
8	($114,800)	$23,800	($138,600)
9	($138,600)	$23,800	($162,300)
10	($162,300)	$23,800	($186,100)
11	($186,100)	$23,800	($209,800)
12	($209,800)	$23,800	($233,600)

To see values from the Cash Flow worksheet, click the Use Cash Flow Values button in the upper right corner of this sheet. To close the spreadsheet, simply click the Save & Exit button on the CFO Calculator toolbar.

Disclaimer

UESC

- Average ≈ $98 million per year
- Range has been $54 M to $139 M
- Need huge increase to meet goals
- Are utilities really interested?

Are Utilities Enthused about UESC?

- Utilities have significant advantages
  - Access to all federal facilities
  - Non-competitive procurement
  - Relatively simple contracting procedures
  - Less potential downside than ESPC
- Why haven’t they jumped in with both feet?

Are Utilities Enthused about UESC?

- Don’t like the energy services business
- Don’t like renewables
- Don’t like DG or CHP

Don’t Like the Business

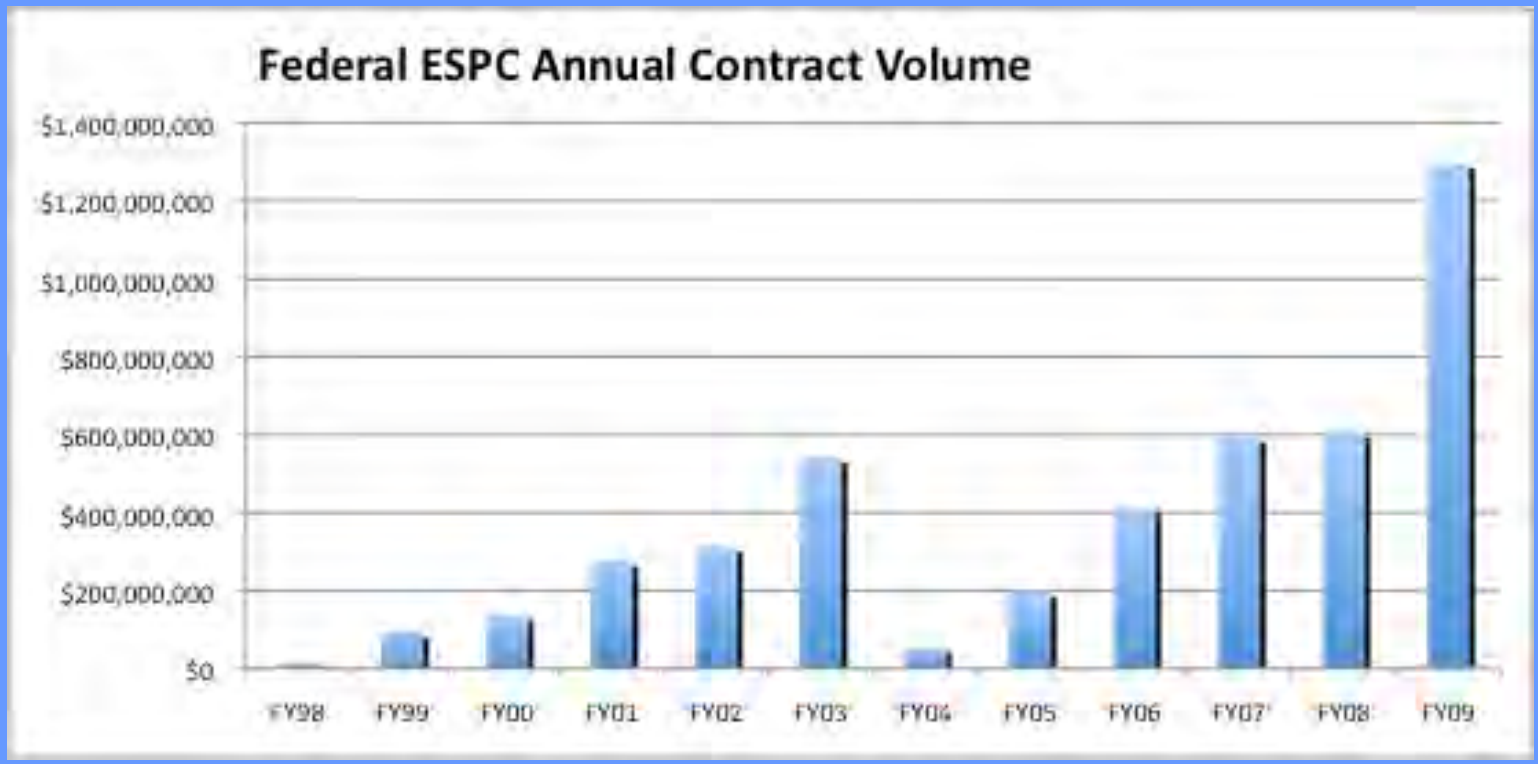
- Utilities tried and gave up energy services

NStar	NGrid	Energy East
Exelon	Equitable Gas	First Energy
Duke	Reliant	SCE
Oncor	Sempra	KCP&L
PG&E	Xcel	PNM

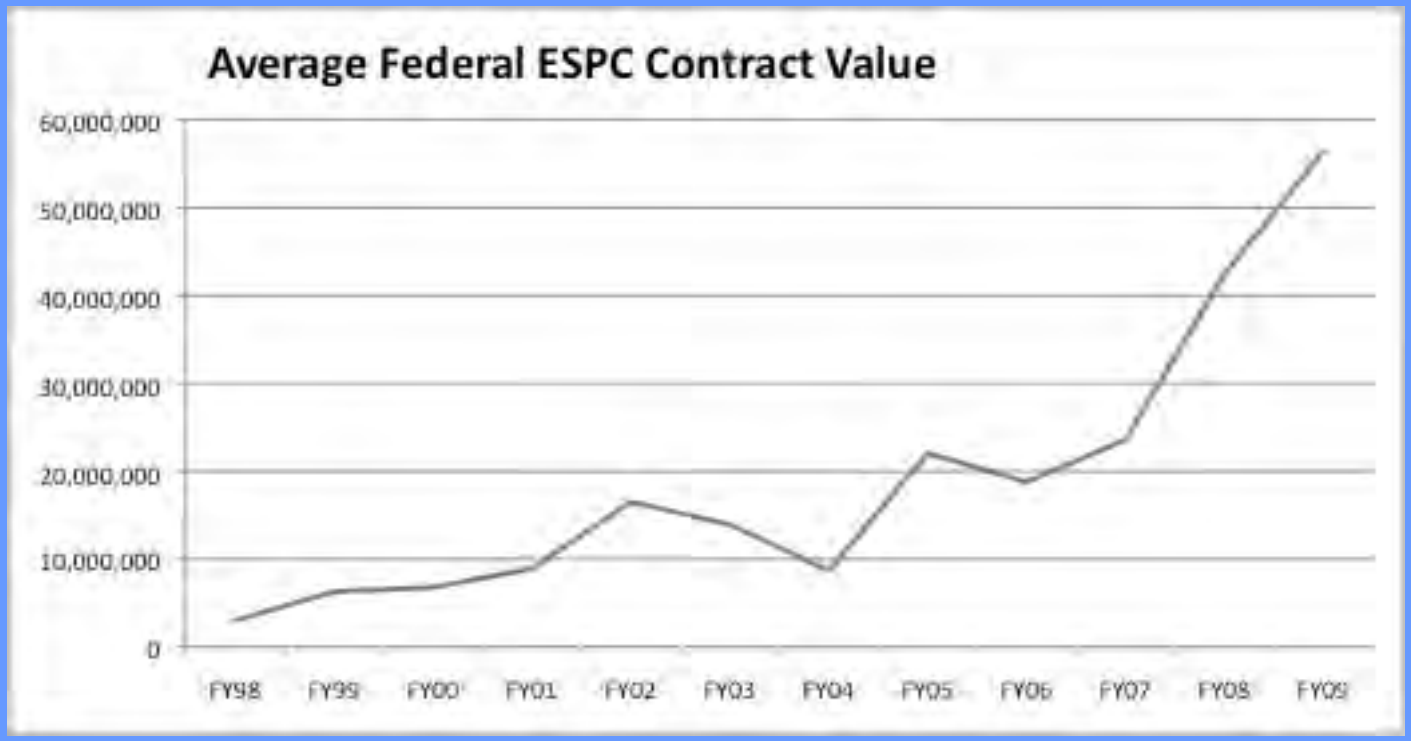
ESPC

- Average ≈ $238 million per year
- Range has been $46 M to $429 M
- About $1.3 billion in 2009
- ESCOs have the capacity and interest to meet the federal goals

Capacity to Meet Federal Goals



Capacity to Meet Federal Goals



Sources

- **Evaluation of Federal Energy Savings Performance Contracting— Methodology for Comparing Processes and Costs of ESPC and Appropriations-Funded Energy Projects (ORNL/TM-2002/150) --** Patrick J. Hughes, John A. Shonder, Terry Sharp. And Melissa Madgett – March 2003
- EPA ENERGY STAR Cash Flow Opportunity Calculator available at the following URL: http://www.energystar.gov/index.cfm c=tools_resources.bus_energy_management_tools_resources
- Data on volume of ESPC contracts from FEMP document entitled “do-awardedcontracts.pdf”

Questions or More Information

Donald Gilligan

NAESCO

dgilligan@naesco.org

781-793-0250