

Introduction to Energy Performance Contracting (EPC)

NGA Clean Power and Efficiency Summit

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Overview

- What is Energy Performance Contracting?
- What are Energy Service Companies?
- Size of the ESCO Market Today
- Size of Potential EPC Market
- US DOE Program to Help States Use EPC



What is Energy Performance Contracting (EPC)?

- Turnkey service to deliver energy efficiency projects
 - Audit + engineering + construction + financing + commissioning + O&M + long-term M&V
- Project costs paid from savings
 - Re-direct utility spending to efficiency improvements
- Delivers all EE, RE and DG/CHP technologies
- Serves all market segments
 - Pentagon to family dairy farms



Potential Scale of EE Market

- EE has provided about 75% of our new energy needs since 1970
- California example
 - Energy use per capita same for 30 years
 - Rest of the country +50%
 - Californians are not exactly deprived
- Plenty more EE available



Potential Scale of EE Market

- Studies summarized by NAPEE
 - Sponsored by US DOE and US EPA
 - 50 members + 17 observers
 - Utilities, end users, industry, regulators
- Potential Savings
 - Electricity (9 studies) = 9.5% to 43.2%
 - Natural Gas (3 studies) = 10% to 19%



Potential Scale of EE Market

- NAPEE sample program ~ \$7B annually
 - More than three times current utility spending
- Savings cost of \$.04/kWh and \$3/MMBtu
- NPV = \$344B
- Annual savings in 2017 of \$22B

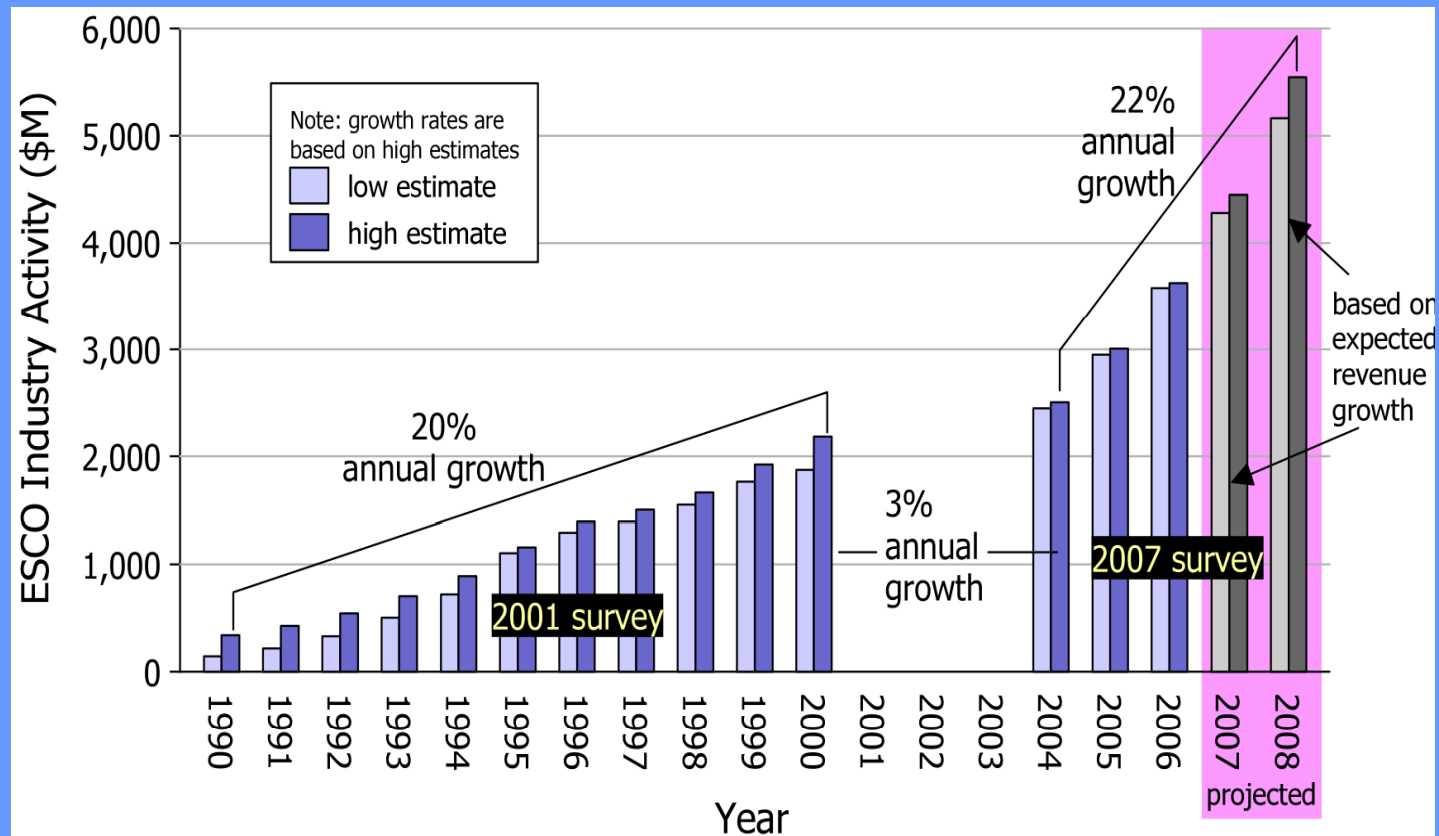


What are ESCOs?

- Energy Service Companies
- Deliver EPC projects
- Range in size from divisions of international firms to small local firms
- Deliver EPC projects in every state



ESCO Market Today



LBLN Studies of ESCO Industry

- Database of ESCO projects maintained by Lawrence Berkeley National Laboratory
 - Currently \approx 3,000 projects
 - Continually updated
- Reports available at http://google.lbl.gov/search?q=naesco&btnG=Google+Search+Berkeley+Lab&ie=&site=lbl&oe=&lr=&access=p&client=lbl&proxystylesheet=lbl&output=xml_no_dtd



Why Use Performance Contracting?

- Save energy
- Reduce emissions
- Modernize government facilities
- Create jobs
- No money down



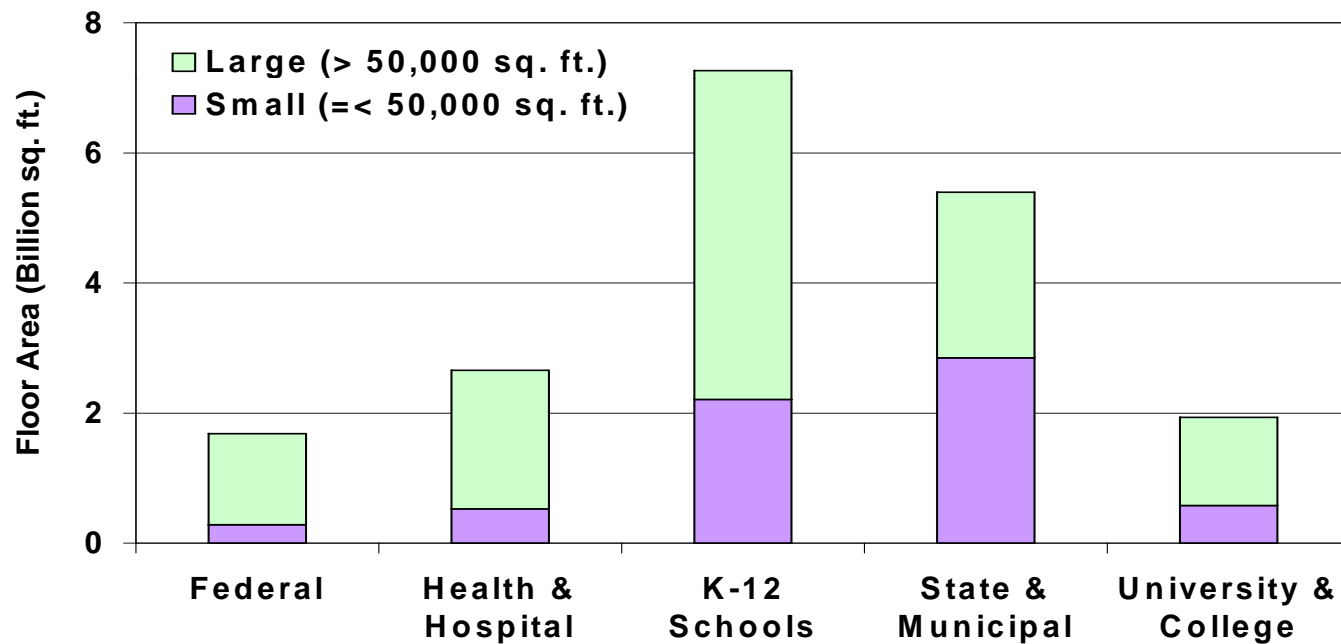
Special Help for MUSH Market

- MUSH = municipal/state, universities, schools and hospitals
- Facilities starved for capital
- Performance contracting provides facilities modernization, paid from energy savings
- Win-win-win
 - Facility saves money
 - Taxpayers save money
 - State and local governments reduce emissions



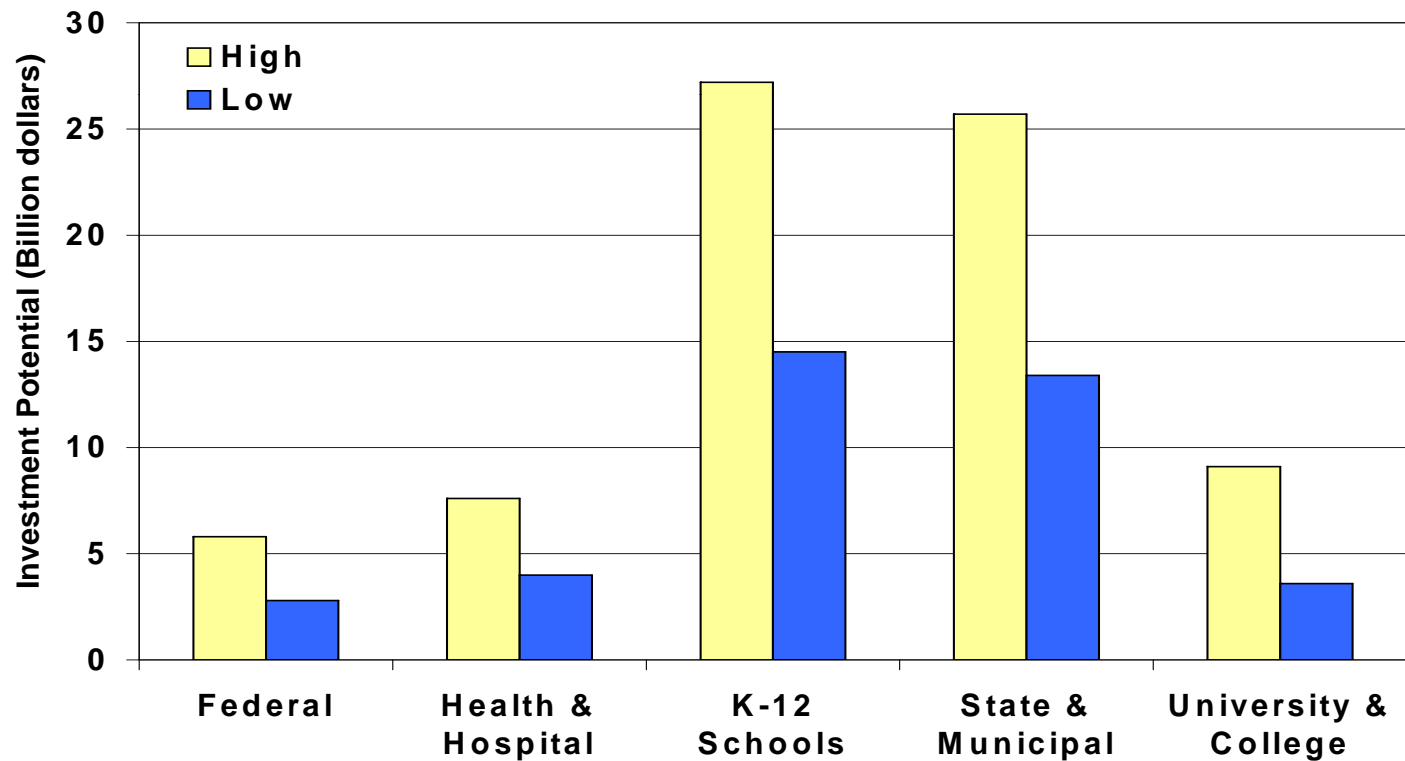


Size of MUSH and Federal Market





Investment to Capture EE Potential



Employment Potential of EE Markets

- NYS: \$150 million/year program
 - 4,200 jobs
 - \$244 million/year in economic growth
 - Source: NYSERDA
- Midwest: \$800 million/year program
 - 30,000 jobs + \$750 million/year by 2010
 - 66,000 jobs + \$1.7 billion/year by 2020
 - Source: ACEEE



Employment Effects of EE (NYSERDA)

Table 3-7. 2005 Update – Net Employment Impacts of New York Energy \$martSM Program by Industry Sector

Economic Sector	Average Net Jobs per Year	
	Program Implementation Years 1999-2007	Years Following Implementation 2008-2017
Agriculture, Forestry, and Mining	19	28
Construction	876	261
Products Manufacturing	191	207
Equipment and Instrument Manufacturing	428	129
Transportation, Communication, and Other Public Services	151	119
Wholesale and Retail Trade	1,323	1,383
Personal and Business Services	2,024	2,235
Electric Utilities	(336)	(656)
Total ¹	4,677	3,706

¹ Totals may not sum due to rounding.



Employment Effects of EE (ACEEE)

Table 25. Projected Economic Benefits of Energy Efficiency Programs by State

State	2010		2015		2020	
	Number of Jobs	Employee Compensation in Millions \$ ^a	Number of Jobs	Employee Compensation in Millions \$	Number of Jobs	Employee Compensation in Millions \$
IL	6,480	\$220	9,720	\$300	13,160	\$440
IN ^b	N/A	N/A	N/A	N/A	N/A	N/A
IA ^b	N/A	N/A	N/A	N/A	N/A	N/A
MI	5,170	\$130	7,630	\$200	11,380	\$330
MN	2,570	\$70	3,570	\$90	5,260	\$140
MO ^b	N/A	N/A	N/A	N/A	N/A	N/A
OH	5,300	\$100	9,590	\$220	12,430	\$290
WI	3,320	\$70	4,750	\$110	7,060	\$160
Total Region^c	30,220	\$750	48,270	\$1,230	66,620	\$1,770

^a All dollar values cited in the table are expressed in 2001 dollars.

^b State-specific data not available (N/A) for Indiana, Iowa, or Missouri.

^c "Total Region" includes aggregate results for Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, and Wisconsin.



Employment Effects of EE

- NAPEE Program ~ \$7B/year
- Project NYSERDA study ~ 200,000 jobs
- Project ACEEE study ~ 575,000 jobs
- Mid-range estimate ~ 387,000 jobs



US DOE Helping States Implement EPC Programs

- US DOE providing
 - Training (on-site, Webinars and self-teaching)
 - Hands-on program assistance from former EO officials
 - Best practices resources
 - Legislation, regulations, program models
- US DOE program involves
 - Energy Services Coalition
 - National Association of State Energy Officials (NASEO)
 - National Conference of State Legislators (NCSL)
 - NAESCO



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