



Environmental Energy Technologies Division Lawrence Berkeley National Laboratory

# *Current Size and Remaining Market Potential of U.S. ESCO Industry*

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Energy Services Coalition  
Market Transformation Conference  
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## *Project Objectives:*

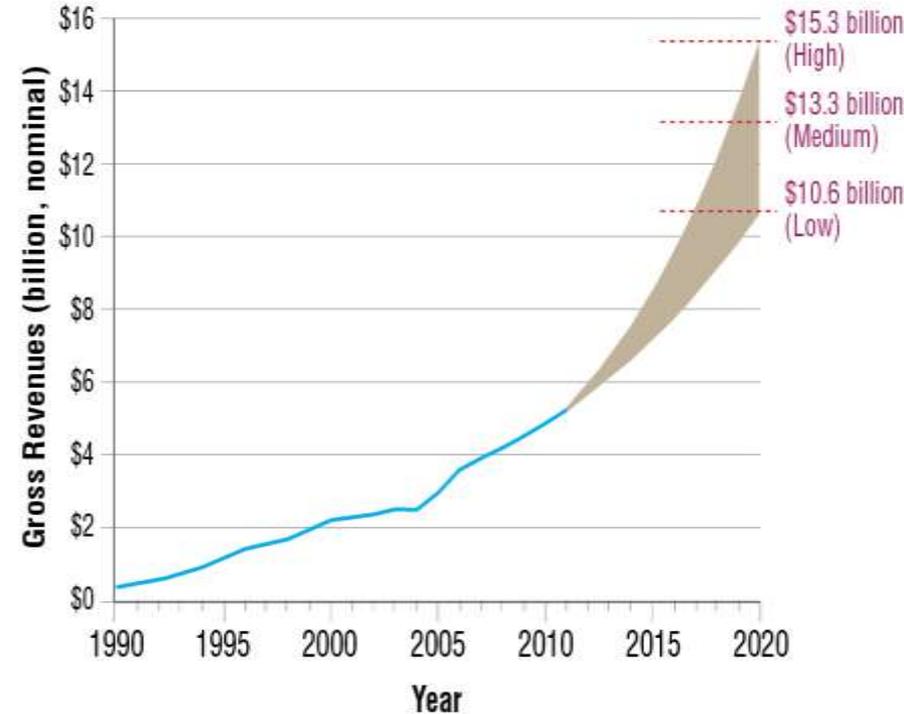
- Track and analyze ESCO industry and market trends: industry revenues, market activity, changes in industry structure; remaining market potential

## *Approach:*

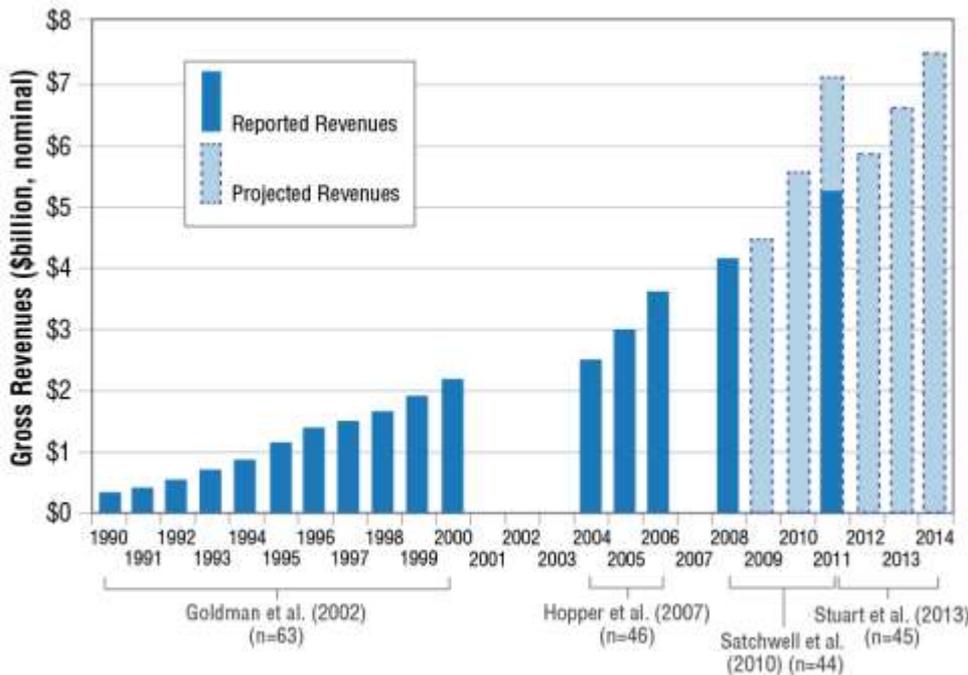
- Similar “top-down” approach as previous LBNL research, but also included remaining market potential estimate
- Discussions facilitated by LBNL/NAESCO with companies using the following sources:
  - NAESCO membership list;
  - DOE-qualified ESC list; and
  - Qualified performance contractors on state lists
- Response rate:
  - 2012: **78%** (35 out of 45 ESCOs); all large ESCOs responded; Delphi approach used for non-respondent ESCOs.
- Topics:
  - Current revenues by market segment, contract type, and technology;
  - Anticipated revenues in next 3 years;
  - Impact of U.S. recession, incentives, tax credits, and financing vehicles; and
  - Market penetration from 2003-2012

# INDUSTRY SIZE: CURRENT AND PROJECTED

- The ESCO industry continued to grow at a steady pace--despite the onset of a major recession--reporting revenues of approximately \$5.3 billion in 2011.

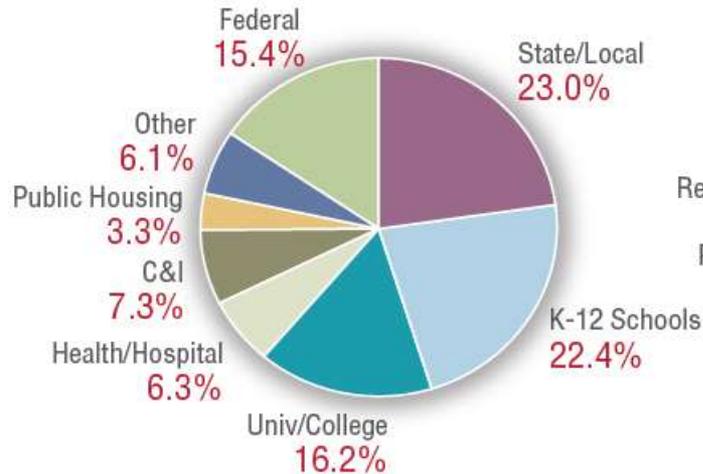


- We project that the ESCO industry will more than double in size from ~\$6 billion (2013) to \$11-\$15 billion (2020).

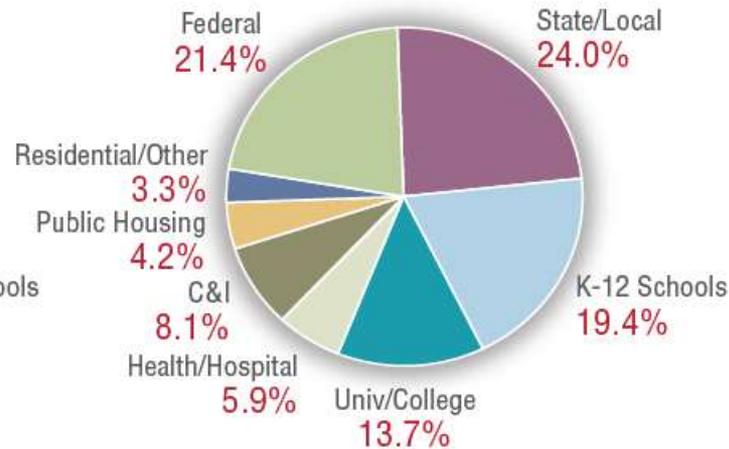


# 2008 & 2011 REVENUE SHARES

2008 Revenues (n=29)

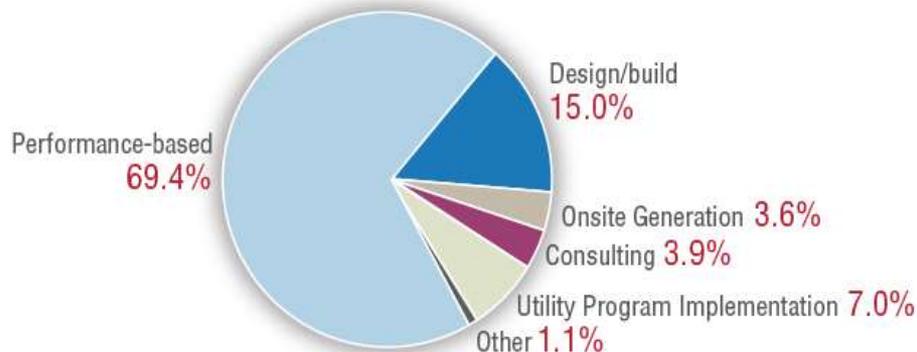


2011 Revenues (n=35)



- ~85% revenue from “MUSH”+Fed. market

2011 Revenues (n=34)

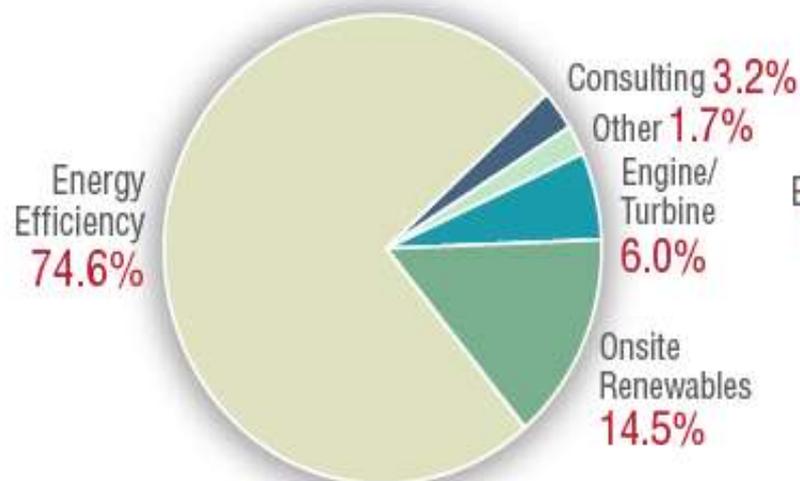


- ~70% of 2011 revenue from performance-based contracts; 15% from design/build.

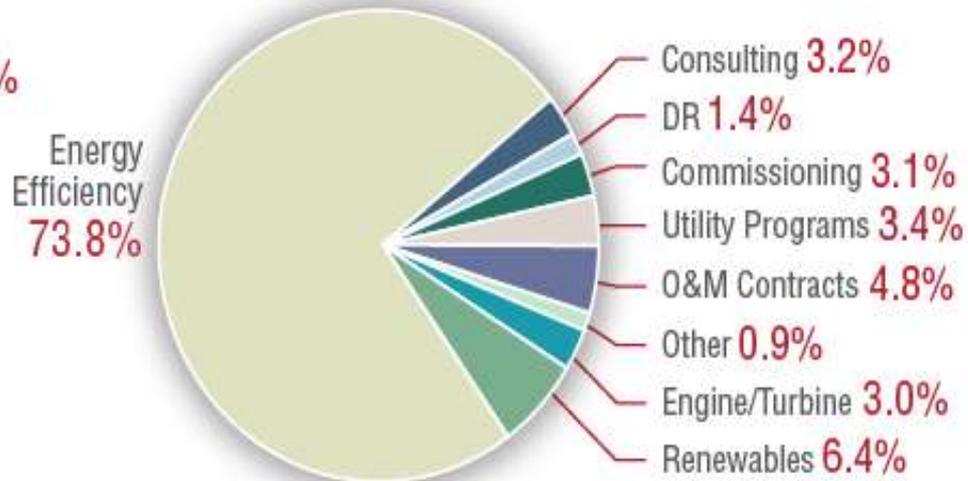
# 2008 & 2011 REVENUE SHARES (CONT.)

- Onsite generation and renewable energy share decreased from 2008-2011
- EE-related activity accounted for ~75% of revenue

2008 Revenues (n=29)



2011 Revenues (n=34)

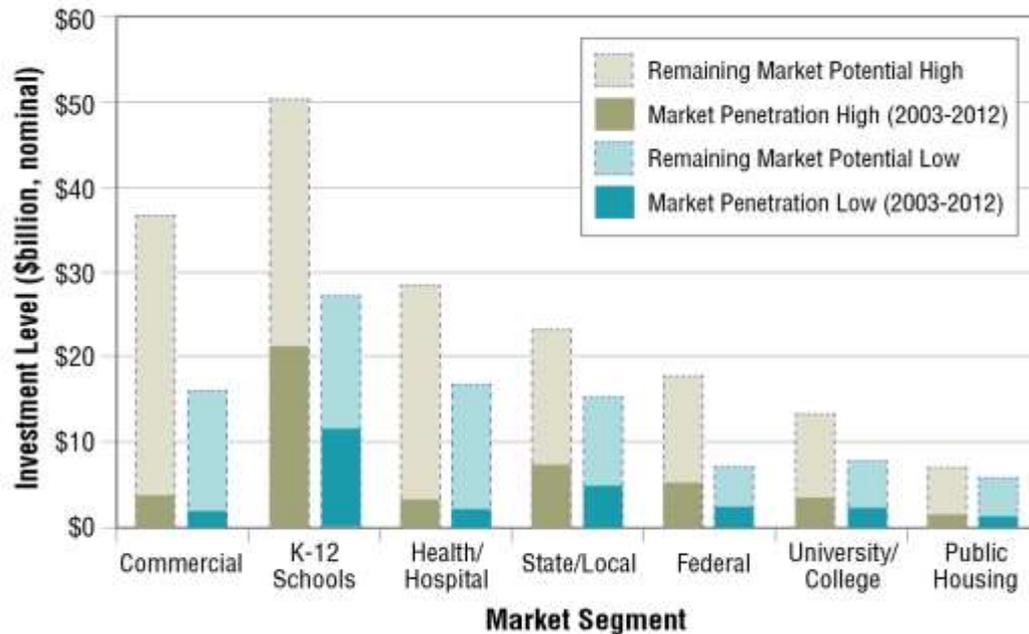


# MARKET PENETRATION (2003-2012)

- Market penetration of performance contracting is highest in the K-12 schools sector and lowest in the C&I and healthcare sectors...

Market Segment	U.S. Census Region				
	Northeast	Midwest	South	West	U.S.
<b>K-12 Schools</b>	45%	40%	42%	30%	<b>42%</b>
<b>State / Local</b>	39%	30%	30%	45%	<b>30%</b>
<b>Federal</b>	27%	28%	25%	27%	<b>28%</b>
<b>Universities/Colleges</b>	25%	25%	23%	30%	<b>25%</b>
<b>Public Housing</b>	20%	15%	18%	18%	<b>18%</b>
<b>Health/Hospitals</b>	10%	10%	15%	15%	<b>10%</b>
<b>Private Commercial</b>	10%	6%	8%	9%	<b>9%</b>

# REMAINING MARKET POTENTIAL



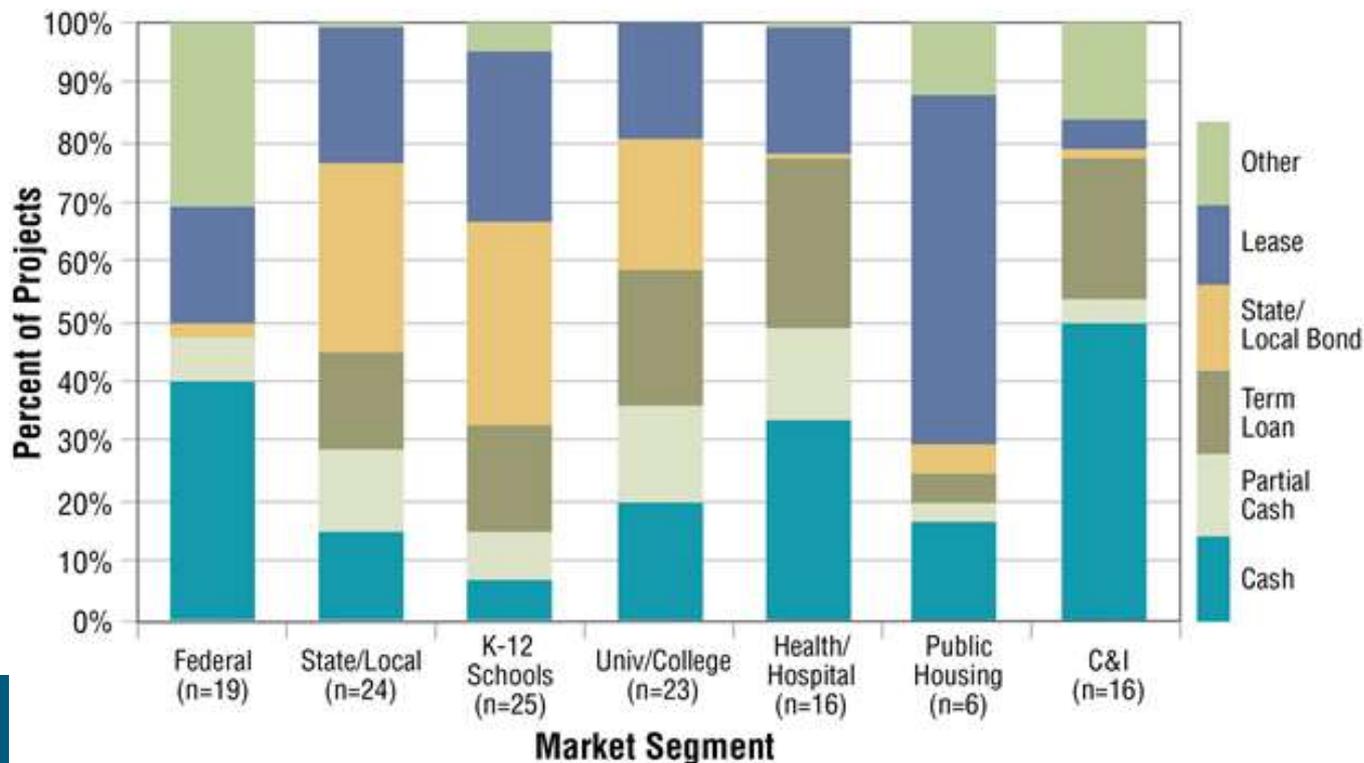
- Remaining investment potential in facilities typically addressed by this industry ranges from ~\$71 to \$133 billion.

Market Segment	Low Estimate	High Estimate
K-12 Schools	\$15.8	\$29.4
Health/Hospital	\$15.0	\$25.6
Private Commercial	\$14.4	\$33.5
State/Local	\$10.6	\$16.3
Public Housing	\$4.7	\$5.7
Universities/Colleges	\$5.7	\$9.8
Federal	\$4.9	\$12.7
<b>Total</b>	<b>\$71.2</b>	<b>\$133.0</b>

- Questions remain about the economic potential of these markets and the accuracy of this estimate...

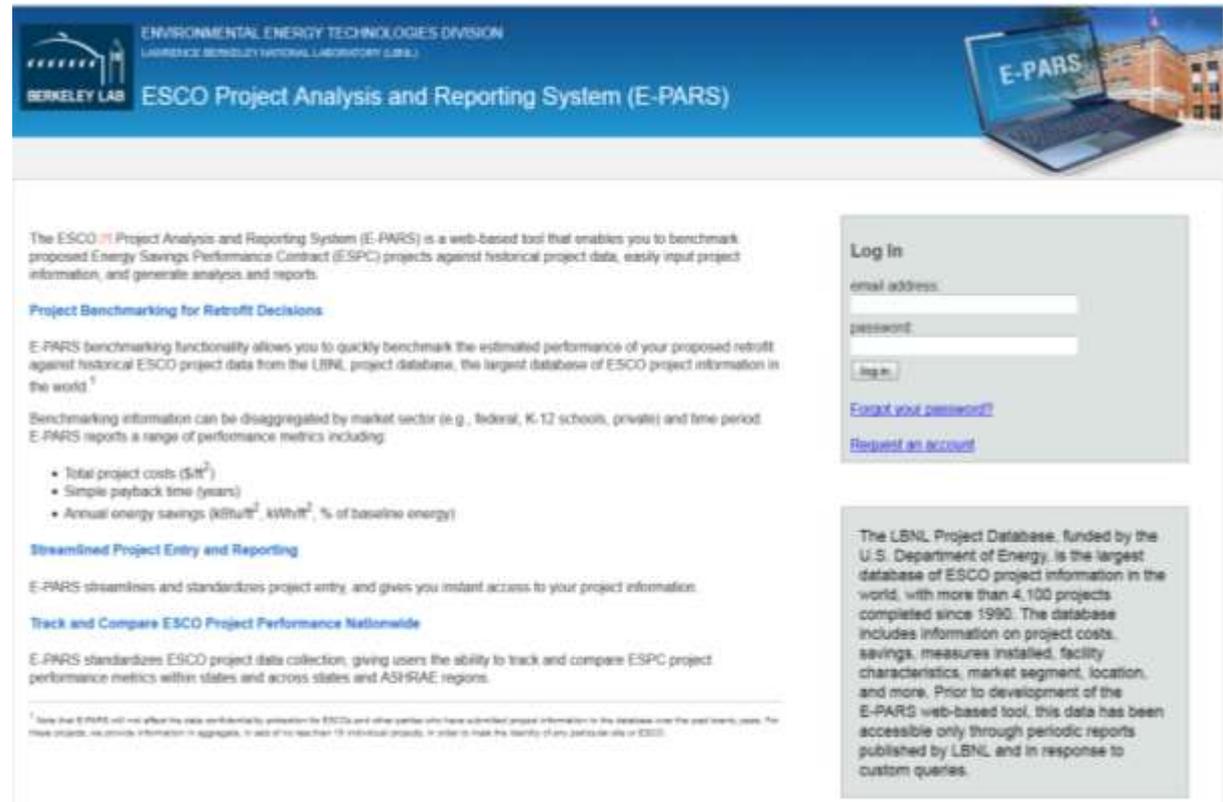
# FINANCING VEHICLES

- 40% of *federal projects* used 100% cash (i.e., appropriations);
- Most *K-12 schools* employed either a state/local bond issuance or a lease arrangement; and
- State or local bonds and tax-exempt municipal leases were most common in *state/local government* projects.



- Industry grew steadily from 2008-2011 (\$5.3 billion)
- We anticipate that industry will double-to-triple in size by 2020 (\$10.6 to \$15.3 billion)
- Remaining market potential of ~\$71-133 billion
- Revenue share from onsite/renewable generation is decreasing
- ESCO customers use a variety of financing vehicles

- Ongoing database development activities (“eProject Builder”)
- Research into non-energy benefits of projects
- Ongoing technical assistance activities



The screenshot shows the E-PARS website interface. At the top, there is a blue header with the Berkeley Lab logo and the text "ENVIRONMENTAL ENERGY TECHNOLOGIES DIVISION LAWRENCE BERKELEY NATIONAL LABORATORY (LBNL) ESCO Project Analysis and Reporting System (E-PARS)". Below the header, there is a main content area with a white background. On the right side, there is a grey box containing a "Log In" form with fields for "email address" and "password", and a "Log In" button. Below the form are links for "Forgot your password?" and "Request an account". At the bottom right, there is a grey box with text describing the LBNL Project Database. The main content area contains the following text:

The ESCO Project Analysis and Reporting System (E-PARS) is a web-based tool that enables you to benchmark proposed Energy Savings Performance Contract (ESPC) projects against historical project data, easily input project information, and generate analysis and reports.

**Project Benchmarking for Retrofit Decisions**

E-PARS benchmarking functionality allows you to quickly benchmark the estimated performance of your proposed retrofit against historical ESCO project data from the LBNL project database, the largest database of ESCO project information in the world.<sup>1</sup>

Benchmarking information can be disaggregated by market sector (e.g., federal, K-12 schools, private) and time period. E-PARS reports a range of performance metrics including:

- Total project costs (\$/ft<sup>2</sup>)
- Simple payback time (years)
- Annual energy savings (kBtu/ft<sup>2</sup>, kWh/ft<sup>2</sup>, % of baseline energy)

**Streamlined Project Entry and Reporting**

E-PARS streamlines and standardizes project entry, and gives you instant access to your project information.

**Track and Compare ESCO Project Performance Nationwide**

E-PARS standardizes ESCO project data collection, giving users the ability to track and compare ESPC project performance metrics within states and across states and ASHRAE regions.

<sup>1</sup> Note that E-PARS will not allow the data confidential to owners by ESCOs and other parties who have submitted project information to the database over the past several years. For these projects, we provide information in aggregate, in sets of no less than 10 individual projects, in order to mask the identity of any particular site or ESCO.

The LBNL Project Database, funded by the U.S. Department of Energy, is the largest database of ESCO project information in the world, with more than 4,100 projects completed since 1990. The database includes information on project costs, savings, measures installed, facility characteristics, market segment, location, and more. Prior to development of the E-PARS web-based tool, this data has been accessible only through periodic reports published by LBNL and in response to custom queries.



### ***Acknowledgments:***

*U.S. Department of Energy EERE-OWIP, Chani Vines, AnnaMaria Garcia, Tim Unruh, Terry Singer, Dave Birr, Patti Donahue, Linda Smith, Paolo Bertoldi, Caiman Cahill, Phil Coleman, Mark Zimring, Nina Lockhart, and staff at ESCOs.*

### ***Citation:***

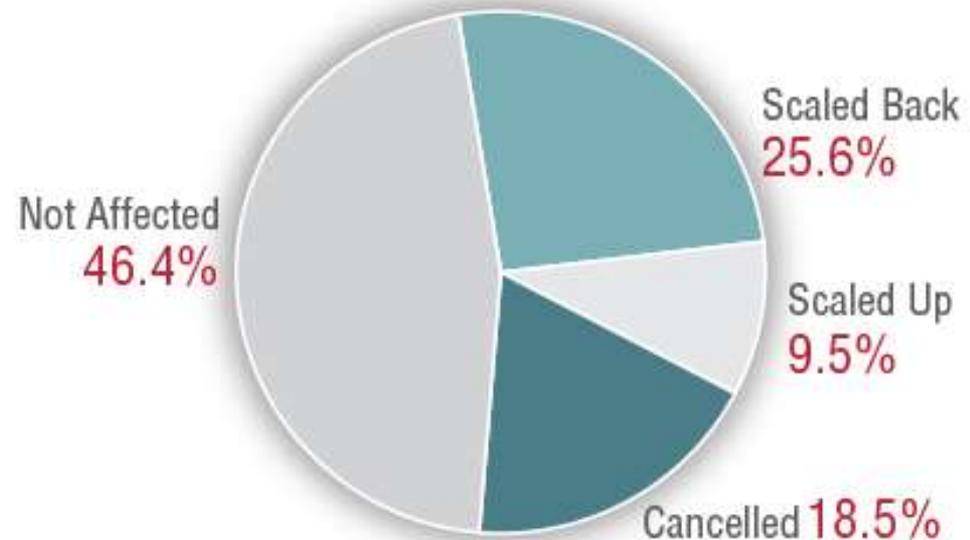
*Stuart, E., P. Larsen, C. Goldman, and D. Gilligan. 2013. Current Size and Remaining Market Potential of U.S. ESCO Industry. LBNL Report 6300-E, August.*

**<http://emp.lbl.gov/reports>**

- ESCOs reported % of planned *state/local government* projects affected by either the U.S. financial crisis or debt policy from 2009-2011

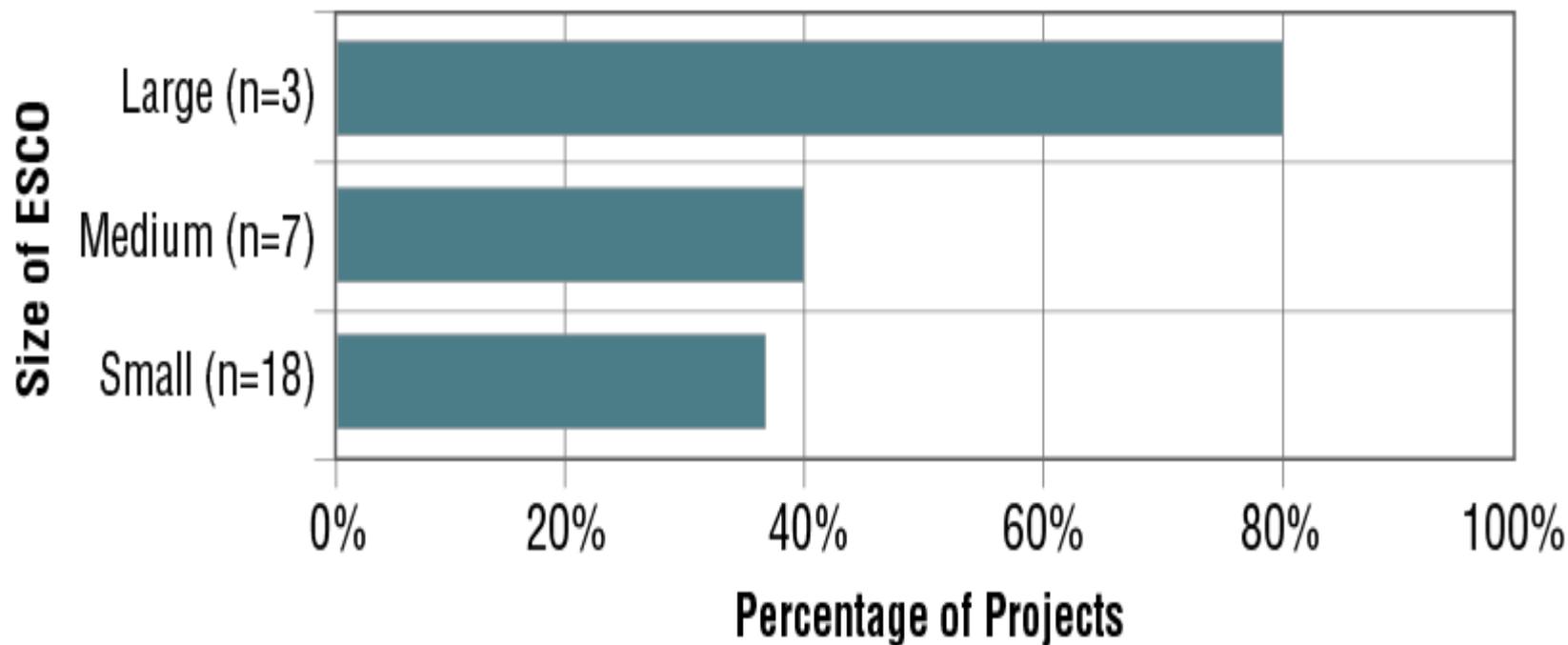
- 44% of projects cancelled or scaled back
- Nearly half unaffected
- ~10% scaled up

State and Local Projects  
2009-2011 (n=22)



# % OF PROJECTS USING THIRD-PARTY ADVISORS

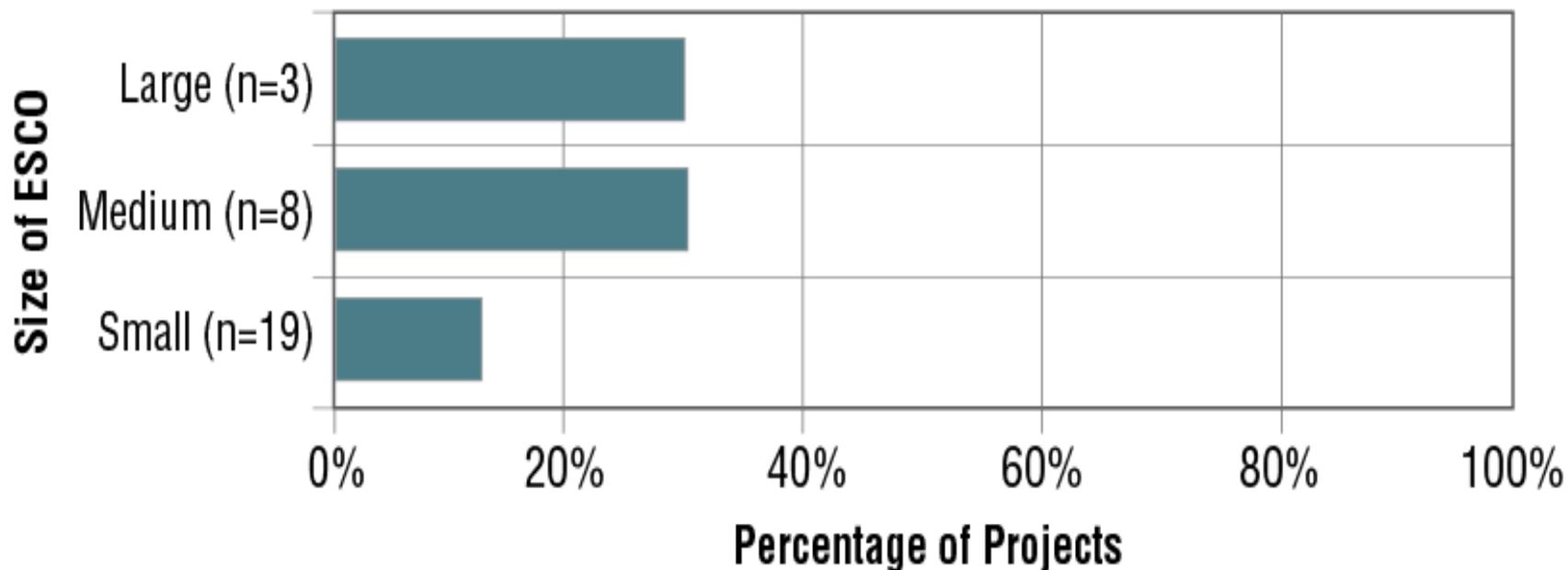
*In what percentage of your [company's] projects during the past three years did the customer use third party professional financial advisors (e.g., bond counsel or financial consultant)?*



- Customers of larger ESCOs tend to use third-party financial advisors more frequently than small-to-medium sized ESCOs.

# % OF PROJECTS USING STIMULUS

*What percentage of your [company's] projects have used federal stimulus programs including: ARRA grants, other direct grants, revolving loans, QECBs, QZABs, etc. during the past three years?*



- 11 medium and large respondent ESCOs reported that ~30% of their projects in the last three years relied on some type of federal program; 19 small ESCOs reported ~15%

# % OF PROJECTS USING TAX CREDITS

*What percentage of your [company's] projects have used local, state, or federal tax credits (e.g., Section 179d, Investment Tax Credit, Production Tax Credit) during the past three years?*

