National Association of Energy Service Companies

The ESCO Industry in the U.S.

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National Association of Energy Service Companies

- NAESCO represents the retail energy service industry
- Members involved in the design, manufacture, financing, and installation of energy efficiency equipment and the provision of energy efficiency services in the private and public sectors

NAESCO Membership

- Energy Service Companies (ESCOs)
- Utilities
- Energy Efficiency Product Suppliers and Manufacturers
- Financial Institutions
- Engineering and Design Firms
- Law Firms and Consultants
- Government Agencies

ESCO Market Drivers

- Savings Mandates
  - Federal and many state governments mandating energy savings goals for public facilities, but not providing capital budgets to pay for energy efficiency improvements
- Facility Modernization
  - Institutional market facilities use ESCO projects to obtain facility improvements without the need for directly allocated funding
- Green Buildings
  - Savings produced from energy efficiency measures help to finance renewables measures

ESCO Market Drivers

- Climate Change
  - Energy efficiency is the first choice of policy planners trying to meet state mandates for greenhouse gas reductions
- Utility Programs
  - State regulators looking to large-scale energy efficiency programs as an alternative to building new power plants
  - ESCO projects attractive because they can be self-financed through energy savings

Standard Services Offered by ESCOs

- Feasibility study
- Investment grade energy audit
- Comprehensive project design
- Arrange project financing
- Complete project installation and management
- Project performance guarantees for the duration of the contract
- Savings measurement and verification
- Ongoing equipment maintenance services

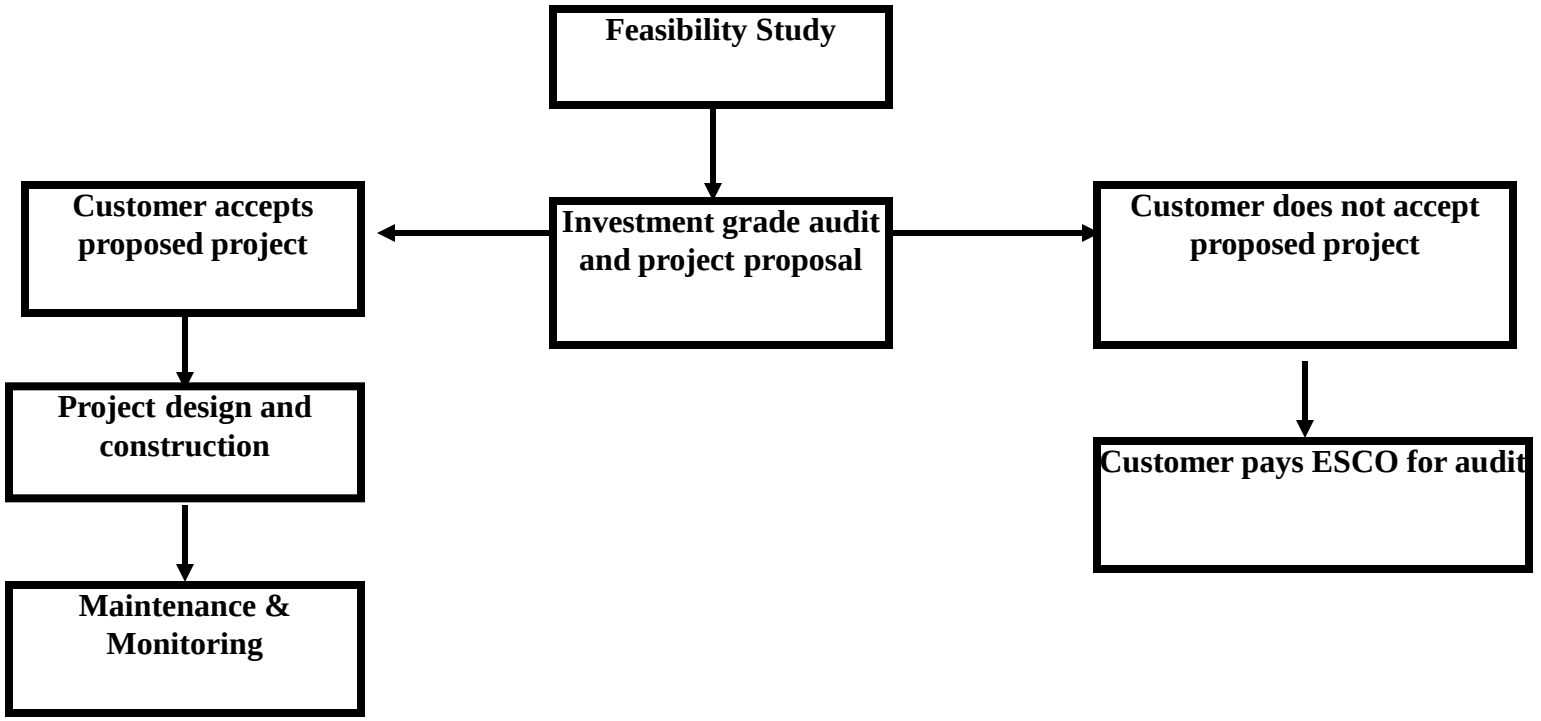
Standard Services Offered by ESCOs

- The energy and cost savings from the project is used to pay for the work.
- Guarantee that the project will result in a specific level of energy savings.

Other Services Offered by ESCOs

- Onsite generation (turbine, renewable technologies and central plant retrofits)
- Energy billing
- Commodity purchase
- Consulting
- Facilities Management
- Operations and Maintenance

Standard Services Offered by ESCOs

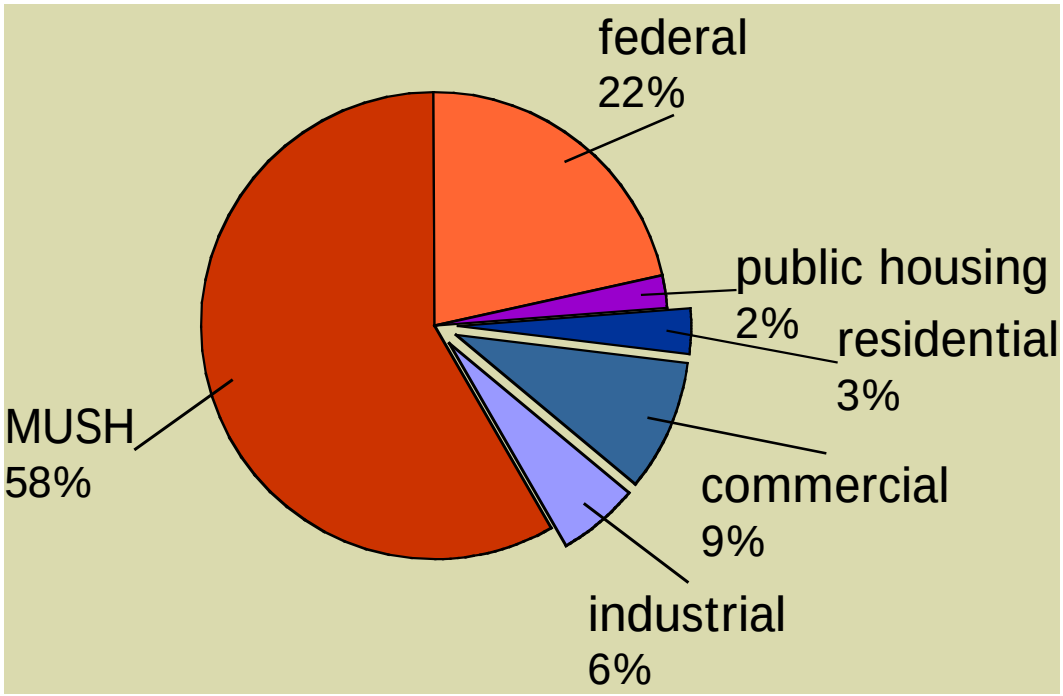


Traditional ESCO Markets in the U.S.

- K-12 Schools
- Hospitals
- Colleges and Universities
- State and Local Government Facilities
- Federal Facilities

Focus is on retrofitting existing buildings, not new construction

Break-down of ESCO Market as of 2006



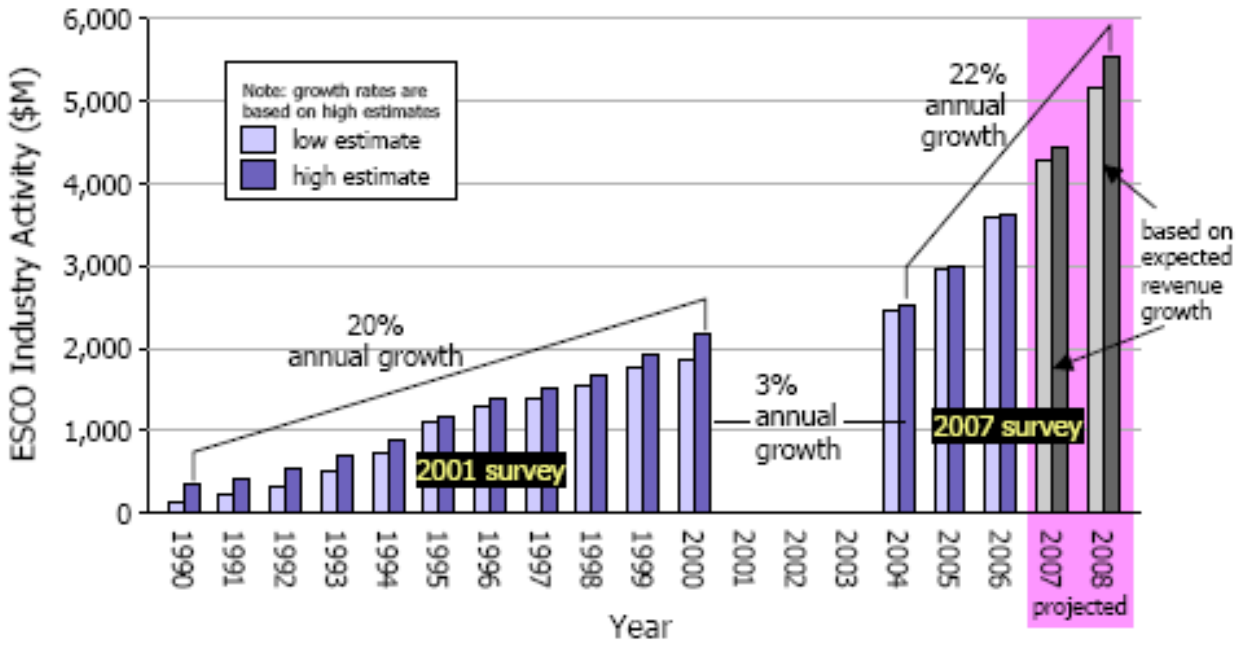
Typical Energy Saving Measures Employed in an EE Retrofit

- Lighting
- Heating Ventilation & Air Conditioning (HVAC)
- Energy Management Systems
- Motors
- Variable Speed Drives
- Building Envelope Measures

Industry Snapshot

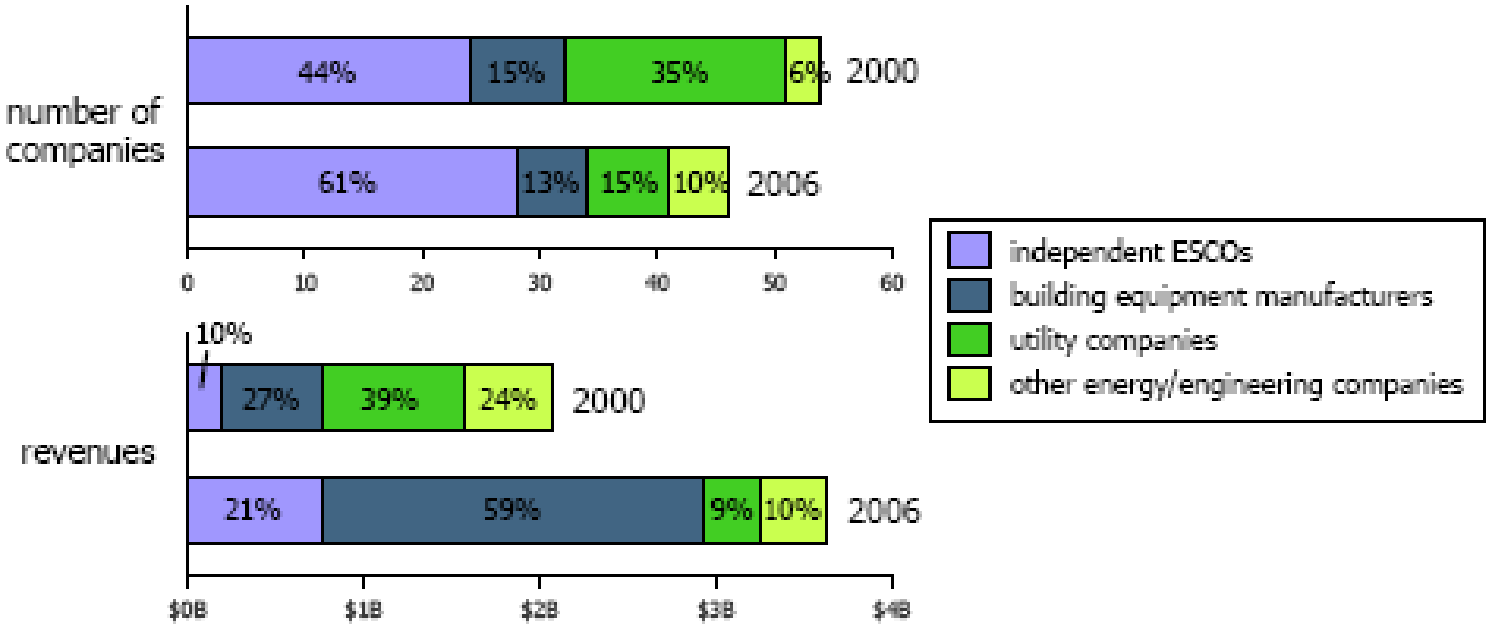
- Project Technologies as portion of ESCO revenue
  - Mix of energy efficiency technologies (73 percent)
  - Renewable technologies (10 percent)
  - Distributed generation or combined heat and power (6 percent)
  - Balance of ESCO revenues derived from consulting and planning services
- Project costs typically are in the range of $1 - $2 million, although trending to significantly larger dollar volumes over several phases
- 23% median electric savings

ESCO Industry Size & Growth Trends



There are ~ 46 active ESCOs in the U.S. (this number may not include some smaller local companies)

Company Ownership Structure



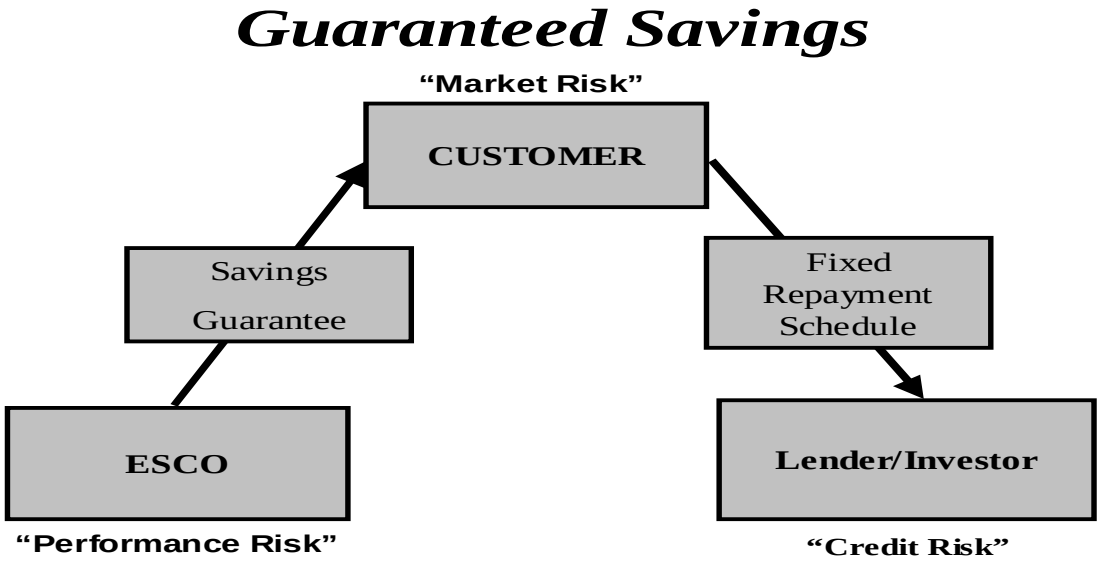
Key Issues in Performance Contracting

- Contract Development and Management
  - Serves as blueprint of how the project is going to operate
  - Defines role and responsibility of both the ESCO and the customer, and explicitly spells out how the project is expected to perform
  - Frames basic legal provisions and protections of both parties

Key Issues in Performance Contracting

- Managing Risk
  - Performance risk – guarantee that the project will achieve a specified level of energy savings over the life of the contract
  - Financial risk – assumption of credit risk by borrowing the money to finance the project
  - ESCOs always assume the project performance risk, but, generally, do not take on the financial risk (e.g., interest rate fluctuations) or market risk (power cost fluctuations)
  - Relationship between customer and financing institution is usually separate
  - Customer is directly responsible to financial institution for meeting its debt service requirement

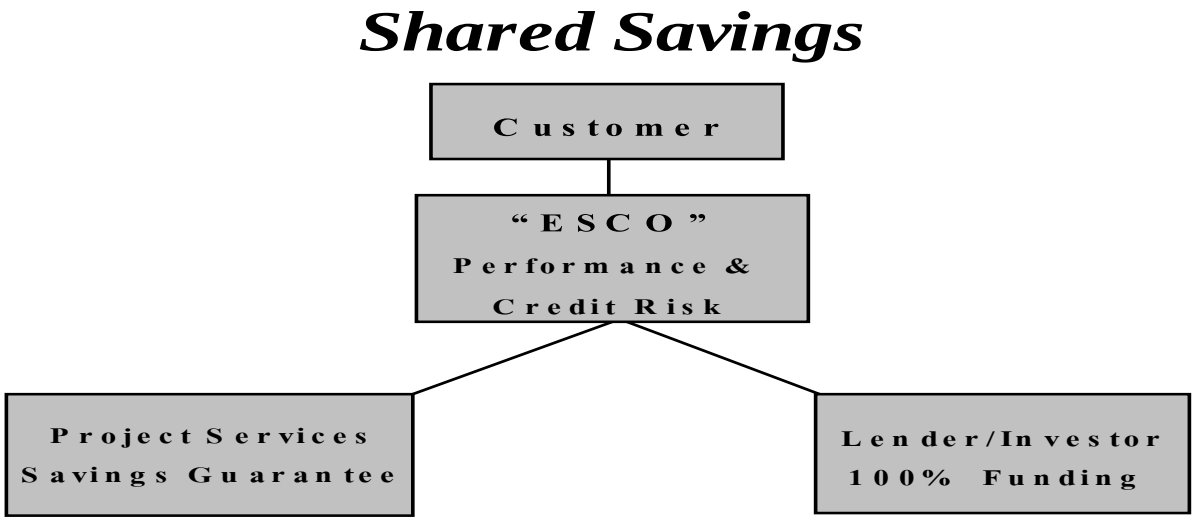
Key Issues in Performance Contracting



Key Issues in Performance Contracting

- Guaranteed Savings
  - Customer assumes obligation to repay a third-party financier
  - ESCO guarantees to the customer that project's realized savings will at a minimum equal the payments made for debt service over the term of the financing
  - If energy savings fall short of guarantee, ESCO pays customer the difference so customer can meet its debt service obligations
  - If savings exceed guarantee, customer agrees to share excess with ESCO based on a prearranged formula

Key Issues in Performance Contracting



Key Issues in Performance Contracting

- Shared Savings (used in Federal projects)
  - Customer has no independent obligation to repay debt service
  - Customer commits to pay to ESCO a percentage of realized savings over a specified period
  - ESCO finances the project, usually by borrowing from one or more lender

Key Issues in Performance Contracting

- ESCOs prefer guaranteed savings approach because:
  - Third party assesses customer credit risk and assumes financial risk
  - Enhanced incentive for customer to resolve on-going project issues
  - Enables larger project size since ESCO's balance sheet is not basis for financing

Key Issues in Performance Contracting

- Financial Instruments
  - Debt financing
  - Leases
  - Bonds
- Municipal Leases and Bonds
  - Most common for schools and other facilities owned by state and local governments with “tax exempt” status
  - Lower interest rates for customer

Key Issues in Performance Contracting

- Measurement & Verification
  - Critical to the success of a project:
    - Defines how much a customer pays an ESCO
    - Maximizes the persistence of cost savings over the contract term
    - Verifies the savings guaranteed under the performance contract – important for financing
  - Projects with high degree of certainty that savings will be achieved require minimal M&V
  - Complex projects with some degree of uncertainty may require more well-defined M&V procedures

Key Issues in Performance Contracting

- Measurement & Verification
  - Commonly used M&V protocols and guidelines:
    - International Performance Measurement and Verification Protocol (IPMVP)
      - Developed by U.S. Department of Energy with state energy officials, energy services industry, and engineering groups
    - American Society of Refrigeration and Air Conditioning Engineers (ASHRAE) guidelines for “Measurement and Verification of Savings”

Case Study – Fort Detrick

- $25 million contract
- 1,200 acre government research complex
- Scope of Services
  - New chiller plants
  - Lighting upgrades
  - Steam plant and distribution system upgrades
  - Digital controls on heating and cooling systems
- Savings
  - $3 million annual savings
  - $60 million projected savings over the life of the project

Case Study – County of Fresno

- $13 million, 15-year contract
- Scope of Services
  - 1.25 MW CHP facility
  - High efficiency lighting modification
  - Upgraded chillers with variable frequency drives
  - Upgraded energy management systems
  - Installed low-flow plumbing systems
  - Installed high-efficiency boilers
  - High efficiency motors on fans and pumps
- Results
  - $1.29 million annual savings
  - Projected reduction of 5,086 tons of CO2

Case Study – Pennsylvania State University, Altoona

- 10-year contract
- 28 buildings
- Scope of Services
  - High efficiency lighting
  - Expand energy management control systems
  - Building envelop measures
  - Upgrade plumbing fixtures
- Results
  - $360,000 annual energy savings

Case Study – Windham Public Schools, Windham, CT

- 6 separate school facilities, including classrooms, gymnasiums, offices, auditoriums, kitchens, libraries
- Scope of services:
  - Lighting upgrades
  - HVAC controls
  - 150 kW cogeneration system
  - Building shell – building insulation, water efficiency
  - Energy curriculum developed for students
- Results:
  - Cost -- $5.2 million; utility rebates -- $390,000
  - Annual savings -- $528,510
  - Annual water savings – 1.7 million gallons
  - Annual greenhouse gas reductions – 2,619 tons

Thank you

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