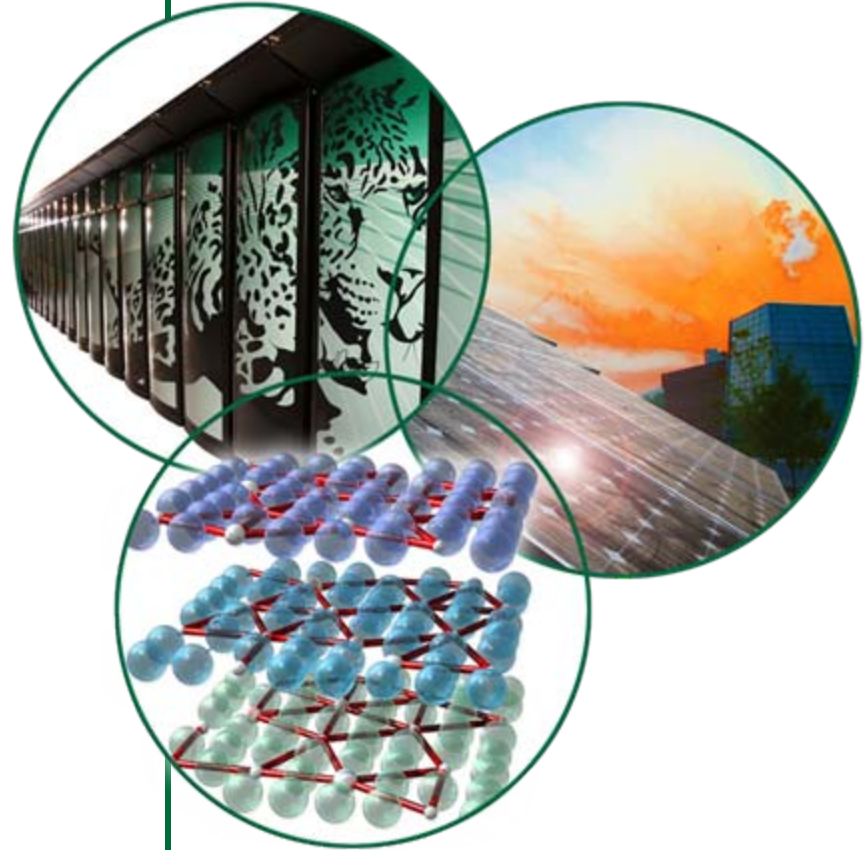


Energy Performance Contracting in the Financing and Implementation of Energy Savings Measures

Annex 46 Subtask C



Objectives of Annex 46 Subtask C

- Identify and document approaches countries have used to implement successful EPC projects at government facilities
- Develop a set of consensus recommendations that can be used to
 - improve existing EPC programs
 - implement new programs in countries that currently lack them
- Compile recommendations in a Best Practices Guide for Innovative Energy Performance Contracts

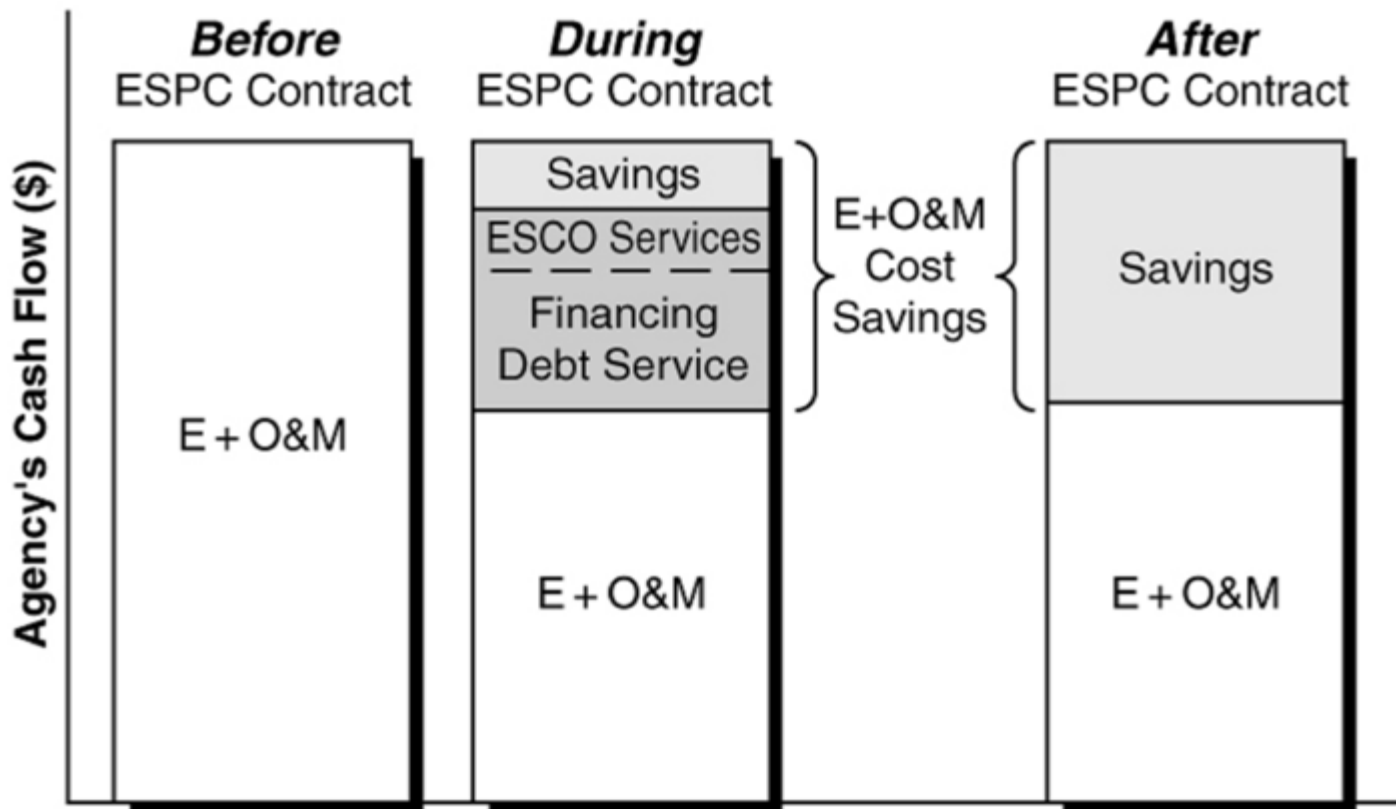
Reports developed to summarize activities in participating countries

- United States
- Germany
- Finland
- Denmark
- Canada

Definition of an energy performance contract

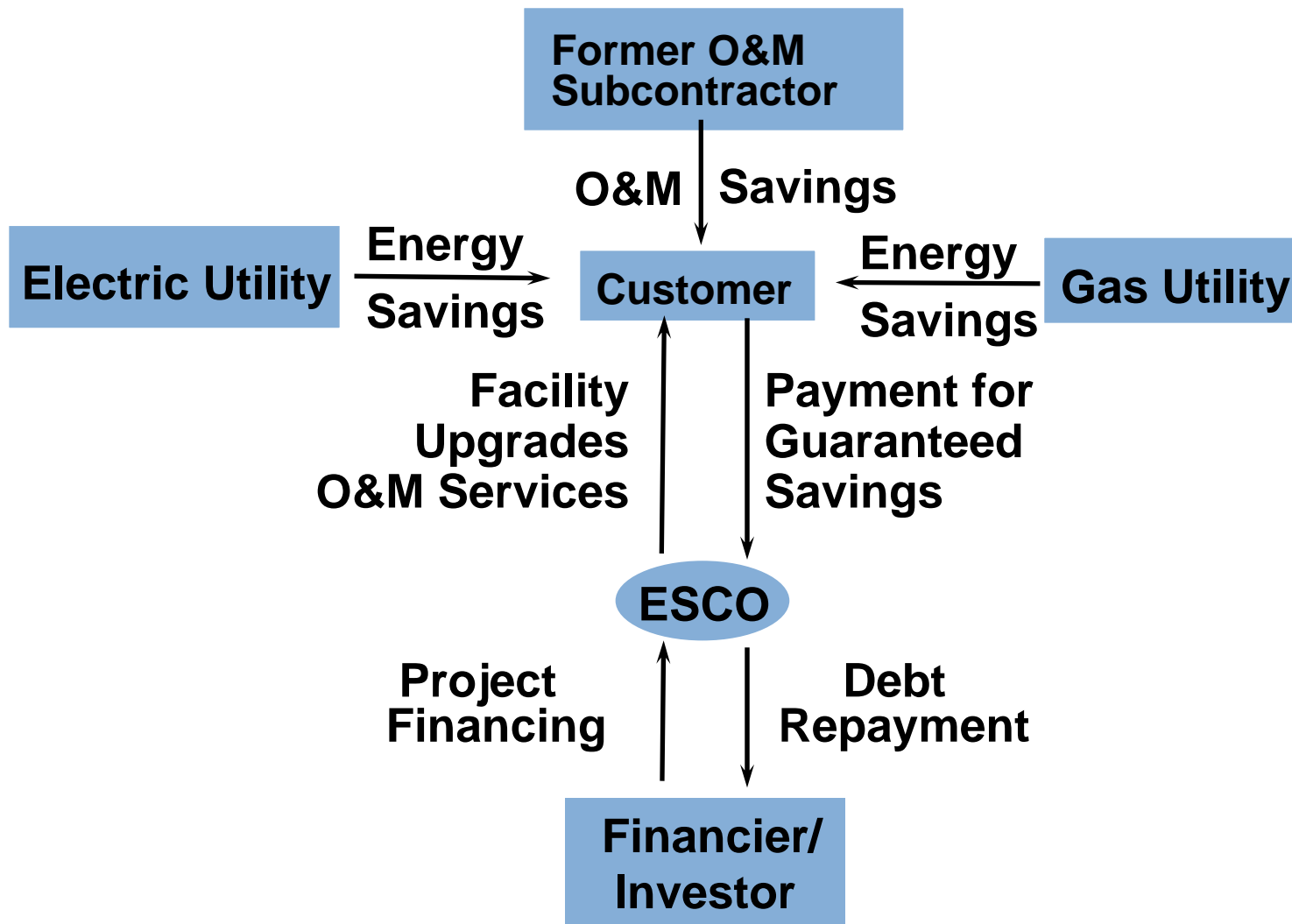
- A process by which a contractor incurs the cost of implementing energy conservation measures (ECMs) and associated services, and is paid from the energy, water, and operations savings that result from these ECMs

Energy performance contracts allow energy conservation goals to be met with no net budget increases

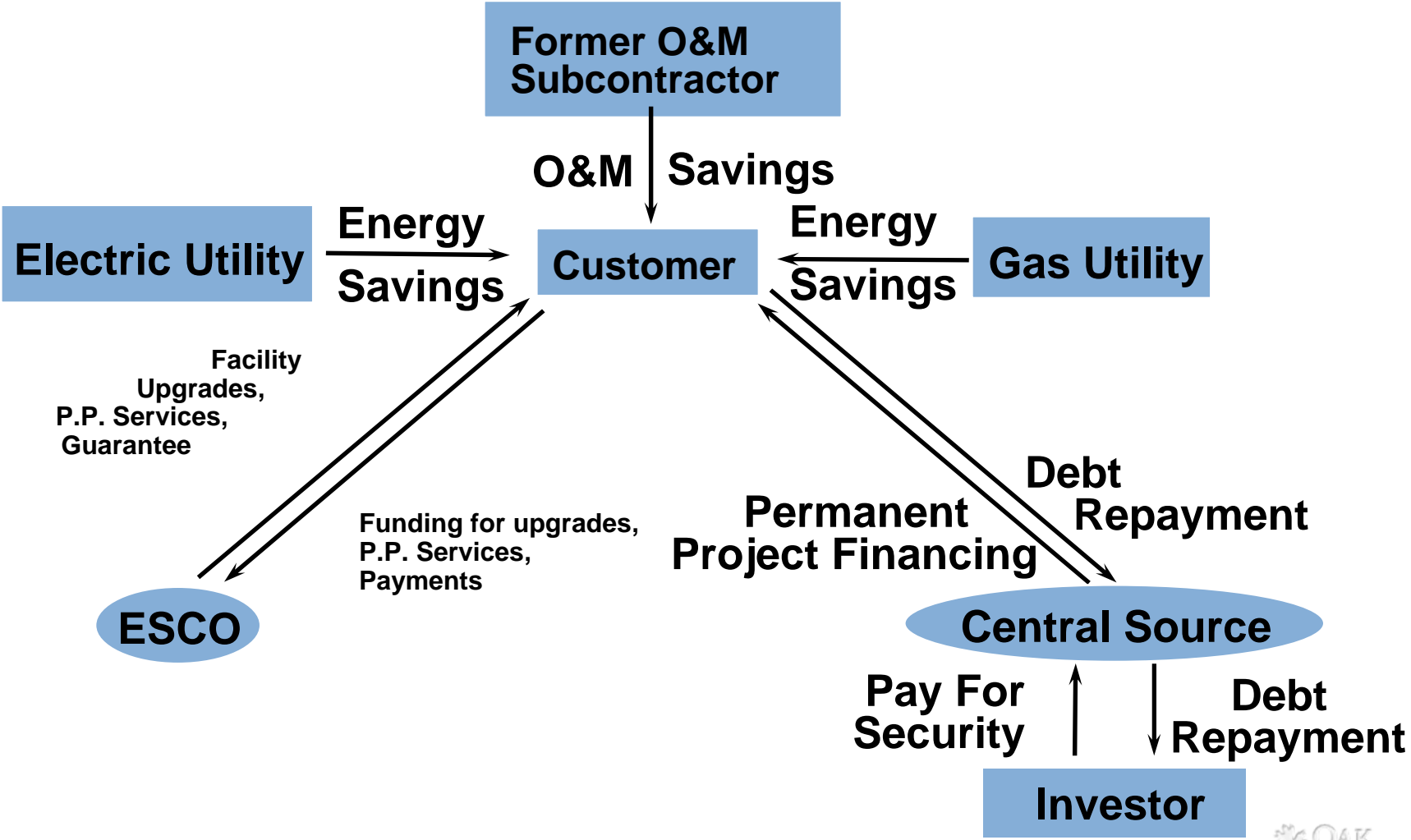


ORNL 99-06432A/abh

Model 1: ESCO obtains financing



Model 2: Customer obtains financing



United States

- At federal level, most EPC done through large indefinite-delivery, indefinite-quantity (IDIQ) contracts
- About \$315 million/yr in federal projects implemented through EPC (2006)
- On average, annual savings are 8,300 Btu (8,800 kJ) per dollar of investment
- Projects generate \$2.45 in savings for every dollar invested
- Another \$1 billion (estimated) in EPC at state and local level

IDIQ contract concept

- ESPCs are complicated technical and financial contracts, and require a great deal of time to negotiate
- Solution is to pre-award broad ESPC contracts to a specific group of qualified ESCOs
 - Satisfy procurement regulations – general terms and conditions
 - Specify the types of services the ESCOs will provide
 - Multi-year, multi-quantity
- Agencies issue site-specific task orders against a contract
- There are three main IDIQ contracts for the federal government
 - DOE-FEMP Super ESPC
 - US Army Corps of Engineers
 - US Air Force

Germany

- Federal government (through dena) operates the “Contracting für Bundesliegenschaften” (Contracting for Federal Property) program
 - Provides manuals, training and other assistance for federal sites in implementing performance contracts
- Nearly every level of German government has enacted some type of enabling legislation permitting schools, universities or state/local governments to use EPC
- No national statistics available on EPC, but market is large and growing

Canada

- Federal Buildings Initiative (FBI) assists federal government organizations in implementing EPCs
- Maintains a list of pre-screened, qualified energy services companies
- Provides model contracts and assistance in tailoring them to specifics of site
- To date, there have been over 86 retrofit projects at the federal level, attracting \$320 million in private-sector investment and generating over \$43 million in annual energy cost savings
- Other levels of government, institutions, and private-sector firms also draw on the FBI's experience for help in designing their own energy efficiency programs.

Finland

- Energy auditing is supported (subsidized) by the Finnish government and is linked to the national energy and climate strategy
- About half of public sector buildings have been audited thus far
- These audits were expected to lead to ESCO projects
- High energy prices combined with a culture (and climate) that promotes conservation means most projects identified have short paybacks (~2 years)
- Short payback projects tend to be implemented by the sites rather than through EPC
- This has limited the growth of an EPC industry in

Finland

Denmark

- Government incentives to save energy are limited
 - CO₂ trading
 - Voluntary energy-saving agreements with industry
- The concept of energy services is relatively unknown
- True EPC (with turn-key service, financing, and savings guarantees) is rare
 - Most activity is in industrial/commercial sector and some municipalities
 - Building renovation market is limited (culture and climate result in short paybacks, as in Finland)
- Several ESCOs are looking to expand into Denmark

Best Practices: Some characteristics of successful ESPC programs

- Policy/legal framework
- Master contracts
- Project facilitation/assistance
- Measurement and verification/continuous commissioning
- Project champions

EPC offers opportunities, but won't have the same potential everywhere

- High energy prices favor EPC projects
- Paradoxically, lack of emphasis on energy conservation favors EPC projects
- Strong legal framework, regular delivery of utility bills are other necessary factors

Questions?

John Shonder

Oak Ridge National Laboratory

shonderja@ornl.gov