

The Energy Performance Contract: What's In It?



**Tribal Renewable Energy
Business Development and
Financing**

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Overview

•Background

- Why Energy Performance Contracting?
- What and why “the contract”?
- What is an EPC?

•What’s in an ESPC (and ESPC contract) for...

- Facility Owner
 - Access to ESCO expertise
 - Immediate facilities upgrades – no up-front capital
 - Reduced operating costs
 - Positive cash flow & guaranteed energy savings
- ESCO
 - Revenue & profit
- Either – Risk Allocation
 - Measurement and verification
 - Allocation of normal tribal business risks

Background

- Why EPCing?
- Why the focus on the contract?
- What's an EPC?

Why Are We Talking About EPCing?

- It's good for the environment?
- It's good for the economy?
- It's just good business
- **The business opportunity:**
 - **Cost/benefit**
 - **Savings contributing to bottom line**
 - **Cost-effective delivery system for meeting environmental mandates / make money while reducing emissions**
 - **Money's already in the budget – being spent on wasted energy**

What and Why the Contract?

With focus on the deal, it...

- Establishes the terms of the deal
- Reflects the parties' agreement as to rules that will govern
- Memorializes, embodies the transaction

It...

- Is the parties' private laws
- Is enforceable by the courts
- Is referred to as “planning documents”
- Looks to parties' future relationship; joint plans
- Helps problem-solve/reduce risks/prevent litigation

What Is Energy Performance Contracting?

Technical procedure

About the contract

Financial transaction first and foremost

- Making good engineering sense
- Facilitated by lawyers
- Driven by strong financial voice

Simple idea/complex process

- Financial officers -> engineering & law
- Lawyers & engineering -> finance

What Is an Energy Performance Contract?

Shared Cost Savings Contract

- Premise: can meet energy services needs at fraction of current cost
- Allows owner to keep % of savings and pay it the remainder
- ...from which it pays for upgrade expenditures and takes profit

Guaranteed Energy Savings Contract (Current ESPC)

- Same premise: energy needs at fraction of cost
- Guarantee: reduction of energy consumed
- Value of dollar savings calculated at current billing rates
- Dollar savings calculated to cover debt service obligations
- Risk of falling energy prices managed by energy floor price below which money guarantees won't apply

What Is an Energy Performance Contract?

Power Purchase Agreement

- Same premise: energy needs (renewable) electrical power, heat, cold) at fraction of cost
- Possible guarantee: reduction of energy cost from current rates
- Cost of PPA energy calculated to compete with current rates
- Payments based on energy production and PPA rate calculated to cover debt service obligations
- Risk of falling energy prices may or may not be managed

Focus on ESPC Contracting

What Is an ESPC? Milestones...

• ESCO Selection

• Preliminary Assessment

• Notice of Intent to Award

• Investment-Grade Audit*

• Final Proposal*

• Award

• Final Design*

• Construction*

• Project Acceptance

• Performance Period*

Access to ESCO Expertise

Access to ESCO Expertise

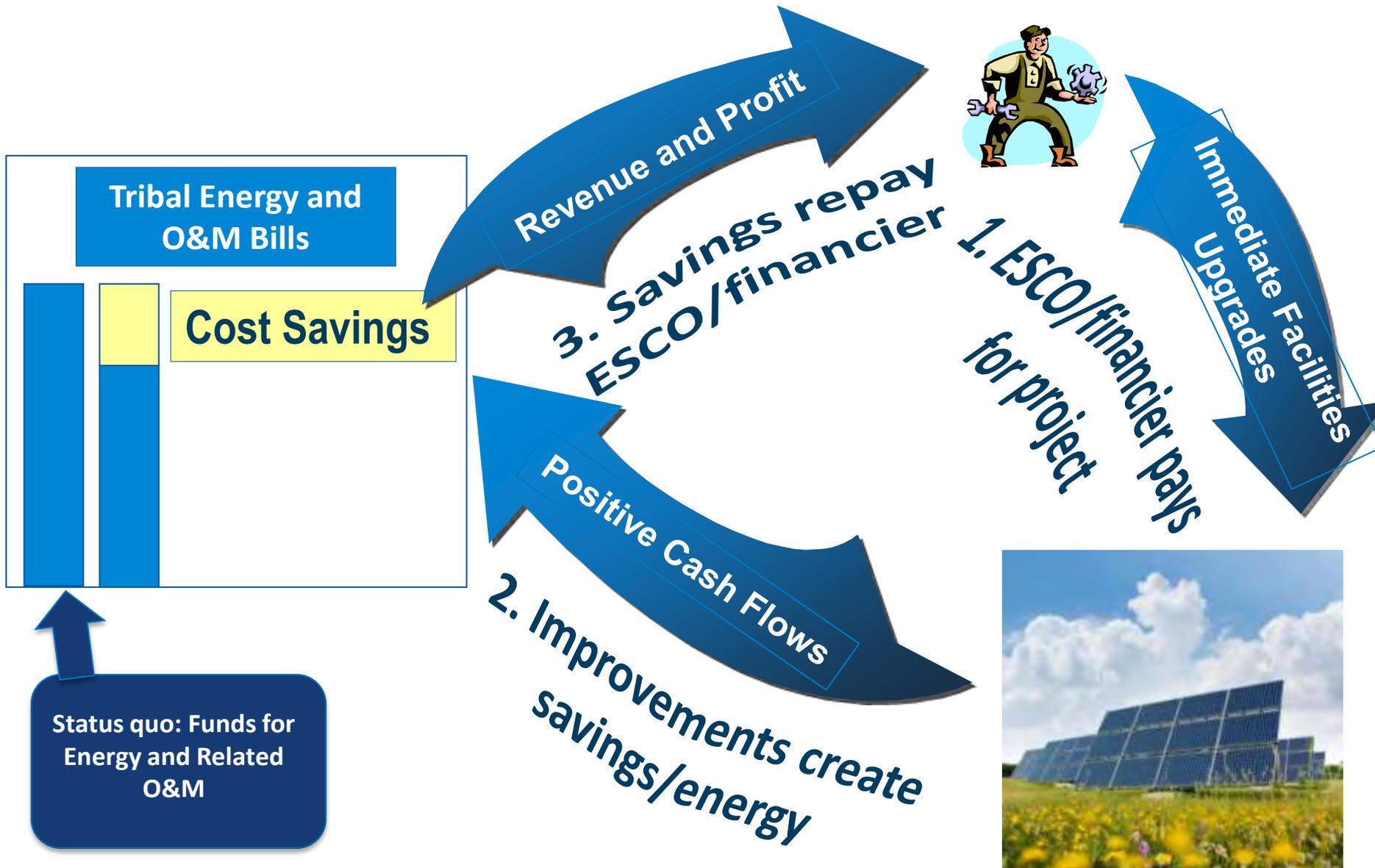
Operating Risk Borne by ESCO

Positive Cash Flows

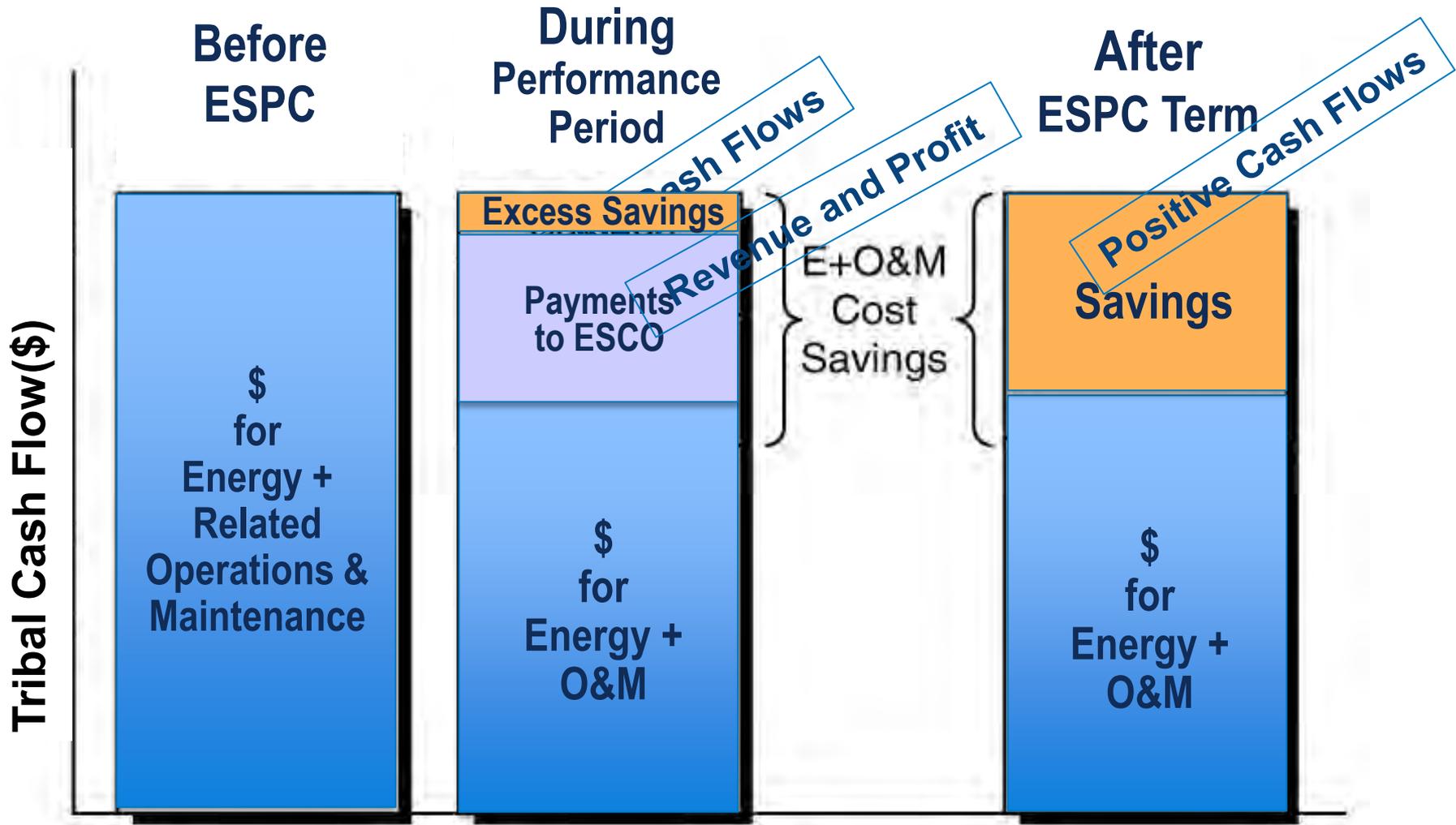
Access to ESCO Expertise

Reduced Operating Costs

What Is an ESPC? Follow the Money...



What Is an ESPC? Savings...



What's In the Contract for...

- Facility owner?
- ESCO?
- Either with risk allocation?

Owner's Access to Expertise

- Receipt of Investment Grade Audit (Report) (defined 1.1) and Project Development Proposal (1.2 incorporates them; Appendix C – IGA and Project Development Contract)
- Equipment Service (Arts. 13, 16)
 - Investment-Grade Audit*
 - Final Proposal*
 - ...
 - Final Design*
 - Construction*
 - ...
 - Performance Period*

The Contract

Investment Grade Audit: A study by the qualified energy services provider selected for a particular Energy Savings Performance Contract project which includes detailed descriptions of the improvements recommended for the project, the estimated costs of the improvements and the utility and operations and maintenance cost savings projected to result from the recommended improvements.

Section 1.2. Investment Grade Audit Report and Project Development Proposal.

ESCO has prepared the complete Investment Grade Audit Report of the Project Site(s) set forth in **Appendix D (Investment Grade Audit Report)** which has been approved and accepted by Institution as set forth in Exhibit III (i) (**Certificate of Acceptance—Investment Grade Audit Report**). The audit includes all measures agreed upon by the parties.

The Contract

ARTICLE 13. EQUIPMENT SERVICE

Section 13.1. Actions by ESCO

ESCO shall provide all service, repairs, and adjustments to the Equipment installed under terms of this Contract pursuant to **Schedule BB (ESCO's Maintenance Responsibilities)**. Institution shall incur no cost for Equipment service, repairs, and adjustments, except as set forth in **Schedule J (Compensation to ESCO for Annual Services)**, provided, however, that when the need for maintenance or repairs principally arises due to the negligence or willful misconduct of the Institution or any employee or other agent of Institution, and ESCO can so demonstrate such causal connection, ESCO may charge Institution for the actual cost of the maintenance or repair insofar as such cost is not covered by any warranty or insurance proceeds.

The Contract

Section 13.2. Malfunctions and Emergencies

Institution shall use its best efforts to notify the ESCO or its designated subcontractors within 24 hours after the Institution's actual knowledge and occurrence of: (i) any malfunction in the operation of the Equipment or any preexisting energy related equipment that might materially impact upon the guaranteed energy savings, (ii) any interruption or alteration to the energy supply to the Project Site(s), or (iii) any alteration or modification in any energy-related equipment or its operation.

Where Institution exercises due diligence in attempting to assess the existence of a malfunction, interruption, or alteration it shall be deemed not at fault in failing to correctly identify such conditions as having a material impact upon the guaranteed energy savings. Institution shall notify ESCO within twenty-four (24) hours upon its having actual knowledge of any emergency condition affecting the Equipment. ESCO shall respond or cause its designee(s) shall respond within ____ hours and shall promptly proceed with corrective measures. Any telephonic notice of such conditions by Institution shall be followed within three business days by written notice to ESCO from Institution. If Institution unreasonably delays in so notifying ESCO of a malfunction or emergency, and the malfunction or emergency is not otherwise corrected or remedied, ESCO may charge Institution for its loss, due to the delay, associated with the guaranteed savings under this Contract for the particular time period, provided that ESCO is able to show the direct causal connection between the delay and the loss.

The Contract

Section 13.3. Actions by Institution

Institution shall not move, remove, modify, alter, or change in any way the Equipment or any part thereof without the prior written approval of ESCO except as set forth in **Schedule CC (Institution's Maintenance Responsibilities)**. Notwithstanding the foregoing, Institution may take reasonable steps to protect the Equipment if, due to an emergency, it is not possible or reasonable to notify ESCO before taking any such actions. In the event of such an emergency, Institution shall take reasonable steps to protect the Equipment from damage or injury and shall follow instructions for emergency action provided in advance by ESCO. Institution agrees to maintain the Project Site(s) in good repair and to protect and preserve all portions thereof which may in any way affect the operation or maintenance of the Equipment.

The Contract

ARTICLE 16. PERFORMANCE BY ESCO

Section 16.1. Corrective Action; Accuracy of the Services

ESCO shall perform all tasks/phases under the Contract, including construction, and install the Equipment in such a manner so as not to harm the structural integrity of the buildings or their operating systems and so as to conform to the standards set forth in **Schedule U (Standards of Comfort)** and the construction schedule specified in **Schedule S (Construction and Installation Schedule)**. ESCO shall repair and restore to its original condition any area of damage caused by ESCO's performance under this Contract. The Institution reserves the right to review the work performed by ESCO and to direct ESCO to take certain corrective action if, in the opinion of the Institution, the structural integrity of the Project Site(s) or its operating system is or will be harmed. All costs associated with such corrective action to damage caused by ESCO's performance of the work shall be borne by ESCO.

ESCO shall remain responsible for the professional and technical accuracy of all services performed, whether by the ESCO or its subcontractors or others on its behalf, throughout the term of this Contract.

The Contract

Section 16.2. Annual Reporting Requirements; Annual ENERGY STAR Rating

At the end of each year during the guarantee period as specified in **Schedule A (Savings Guarantee)** and no later than ninety (90) days thereafter, the ESCO shall complete and submit the data required in **Schedule C (C.4 Annual M&V Reporting Requirements)** . The ESCO shall provide an ENERGY STAR rating for each eligible facility for each year of the guarantee period if applicable.

Owner's Immediate Upgrades

- Construction (Arts. 7, 8)

- Site Description (Schedule Q)
- Equipment (Schedule R)
- Construction/Installation Schedule (Schedule S)
- Commissioning / Operating Parameters (Schedule U)
- Standards of Comfort (Schedule V)

- Purchase and **Sale** (2.1)

- ESCO provide, install...equipment...
- ESCO perform the work Schedule R
- And services in Schedule BB



1. ESCO/financier pays
for project

Immediate Facilities
Upgrades



The Contract

Section 2.1. Purchase and Sale

Institution agrees to lease Equipment through a third party financier, name of lender, as provided for in a separate lease document, **Schedule I (Financing Agreement and Payment Schedule)**. ESCO agrees to provide the Equipment, together with installation, maintenance and other services as provided herein, as in **Schedule R, (Equipment to be Installed by ESCO)** based upon the terms and conditions set forth in **Schedule I (Financing Agreement and Payment Schedule)**.

The agreed to Contract Sum for the Work is a Guaranteed Maximum Price of \$ _____ as set forth in **Schedule H (Final Project Cost & Project Cash Flow Analysis)**. Payment terms are described in **Schedule I (Financing Agreement and Payment Schedule)**.

ESCO will provide the Work and all related services identified in **Schedule R (Equipment to be Installed by ESCO)** and the services detailed in **Schedule BB (ESCO's Maintenance Responsibilities)** and **Schedule J (Compensation to ESCO for Annual Services)**. ESCO shall supervise and direct the Work and shall be responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the Work under this Contract. ESCO shall be responsible to pay for all labor, materials, equipment, tools, construction equipment and machinery, transportation and other facilities and services necessary for the proper execution and completion of the Work.

Institution shall pay ESCO the Contract Sum in accordance with **Schedule I (Financing Agreement and Payment Schedule)**. Payments will be made on a progress basis in accordance with **Schedule I (Financing Agreement and Payment Schedule)**, for Work completed and authorized by Institution during the Interim Period. The Progress Payments outlined in **Schedule I (Financing Agreement and Payment Schedule)** will not be applicable to this Contract. Retainage of ___% will be withheld from each payment until the construction installation is completed as set forth in **Section 2.2 (Commencement Date)**.

Owner's Positive Cash Flows, Energy Savings (Guaranteed), Reduced Operating Costs

- Energy and Cost Savings Guarantee (3.1)
 - Guaranteed annual energy and water cost savings in accord with methods of savings measurement and verification as in (Schedule C Savings M&V Plan; Post-retrofit M&V Plan; Annual M&V Reporting Requirements)
 - Structured sufficient for any and all payments (3.1 referencing Schedule A Savings Guarantee)

Cost Savings



2. Improvements create savings/energy



The Contract

Section 3.1. Energy and Cost Savings Guarantee

ESCO has formulated and, subject to the adjustments provided for in **ARTICLE 15 (Material Changes)**, has guaranteed the annual level of energy and water cost savings to be achieved as a result of the installation and operation of the Equipment and provision of services provided for in this Contract in accordance with the methods of savings measurement and verification as set forth in **Schedule C (Savings Measurement and Verification Plan; Post-Retrofit M&V Plan; Annual M&V Reporting Requirements)**. The Energy and Cost Savings Guarantee is set forth in annual increments for the term of the Contract as specified in **Schedule A (Savings Guarantee)** and has been structured by the ESCO to be sufficient to cover any and all annual payments required to be made by the Institution as set forth in **Schedule J (Compensation to ESCO for Annual Services)** and **Schedule I (Financing Agreement and Payment Schedule)**.

ESCO's Revenues & Profits



...

• Purchase and Sale (2.1)

- Institution agrees to lease through 3rd party financier (Schedule I Financing and Payment)
- Institution shall pay ESCO the Contract Sum (Schedule I)
 - Progress basis during Interim Period
 - Limits
 - % Retainage
 - Contract Sum = Guaranteed Max Price (Schedule H Final Project Cost and Project Cash Flow Analysis)
 - Nonoccurrence of Commencement/right to reject (2.2)



The Contract

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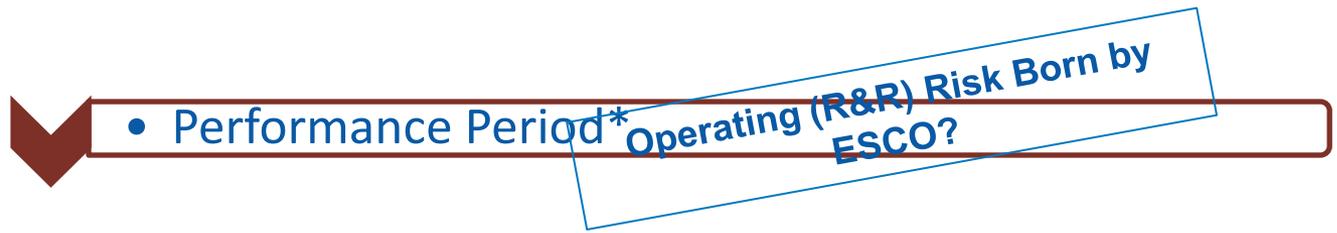
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Allocation of R&R Risks

- Equipment Warranties (Art. 9)
 - ESCO's Maintenance Responsibilities (Schedule BB)
 - Institution's Maintenance Responsibilities (Schedule CC)
 - Equipment Warranties (Exhibit IV)



The Contract

ARTICLE 9. EQUIPMENT WARRANTIES

ESCO warrants that all equipment sold and installed as part of this Contract is new, will be materially free from defects in materials or workmanship, will be installed properly in a good and workmanlike manner, and will function properly for a period of one (1) year from the date of the Substantial Completion for the particular energy conservation measure if operated and maintained in accordance with the procedures established per building. Substantial Completion shall be defined as the stage in the progress of the Work where the Work is sufficiently complete in accordance with the Contract Documents so that the Institution can utilize and take beneficial use of the Work for its intended use or purpose. Substantial Completion does not occur until the Equipment or system has been commissioned, accepted, and the “Substantial Completion” form fully executed.

After the warranty period, ESCO shall have no responsibility for performing maintenance, repairs, or making manufacturer warranty claims relating to the Equipment, except as provided in **Schedule BB (ESCO’s Maintenance Responsibilities)**.

The Contract

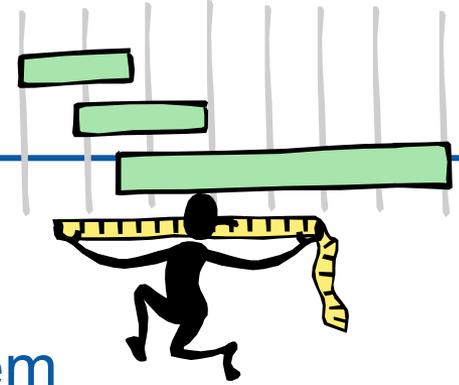
(Art. 9 cont.)

ESCO further agrees to assign to Institution all available manufacturer's warranties relating to the Equipment and to deliver such written warranties and which shall be attached and set forth as **Exhibit IV (Equipment Warranties)**; pursue rights and remedies against the manufacturers under the warranties in the event of Equipment malfunction or improper or defective function, and defects in parts, workmanship and performance. ESCO shall, during the warranty period, notify the Institution whenever defects in Equipment parts or performance occur which give rise to such rights and remedies and those rights and remedies are exercised by ESCO. During this period, the cost of any risk of damage or damage to the Equipment and its performance, including damage to property and equipment of the Institution or the Project Site(s), due to ESCO's failure to exercise its warranty rights shall be borne solely by ESCO.

All warranties, to the extent transferable, shall be transferable and extend to the Institution. The warranties shall specify that only new, not reconditioned, parts may be used and installed when repair is necessitated by malfunction. All extended warranties shall be addressed as the property of the owner and appropriately documented and titled.

Notwithstanding the above, nothing in this Section shall be construed to alleviate/relieve the ESCO from complying with its obligations to perform under all terms and conditions of this Contract and as set forth in all attached Schedules.

Allocation of Risk: M&V



- Guarantees only as good as M&V behind them
- **Focus on M&V** – absolutely critical but can be complex
 - Savings can only be measured indirectly – what we think *is* (measured or stipulated) vs. what we think *would have been* (status quo = baselines)
 - Many factors affect energy use besides the ECM
 - Weather
 - Occupancy
 - Hours of operation
 - Space usage
 - Plug loads...

“What you don’t measure, you can’t manage.”

—Jack Welch, former GE CEO

Allocation of Risk: M&V

Baseline

- Proposed by ESCO as part of IGA – owner reviews/approves
- Compared to post-installation energy use to determine savings
- Get them right early – difficult/impossible to revisit after install

Energy Cost Savings

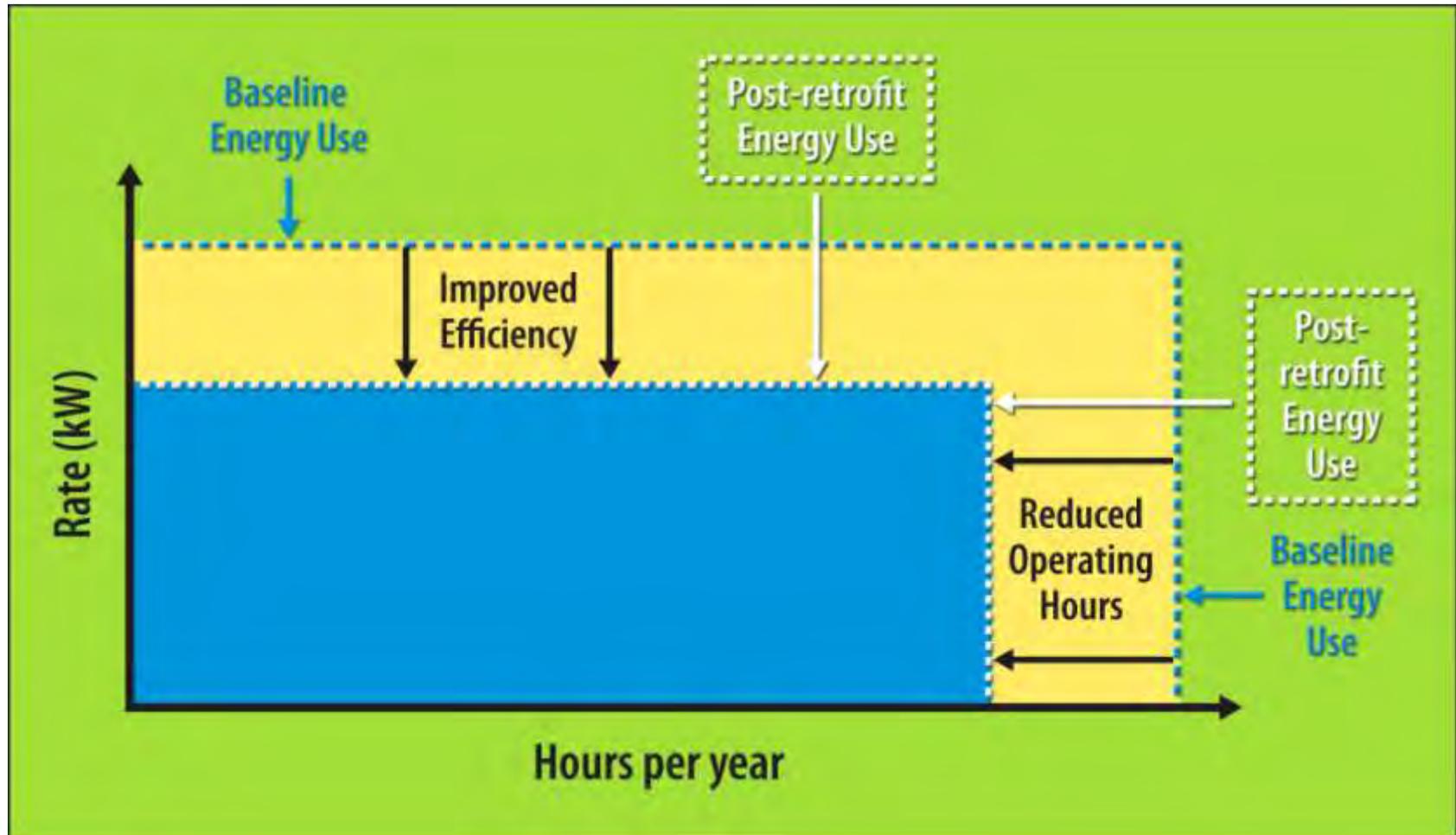
- Reductions in system use
- Efficiency improvements
- Reductions in peak demand
- Reductions in energy rates
- Shifting time-of-use to lower-cost periods
- Switching to less expensive fuels
- Self-generation (including cogeneration/CHP)
- Reduced water and sewer use/cost

Other cost savings -- Usually recurring savings, primarily reduced O&M expenses:

- Parts & labor costs
- Emergency repair costs
- Equipment replacement costs

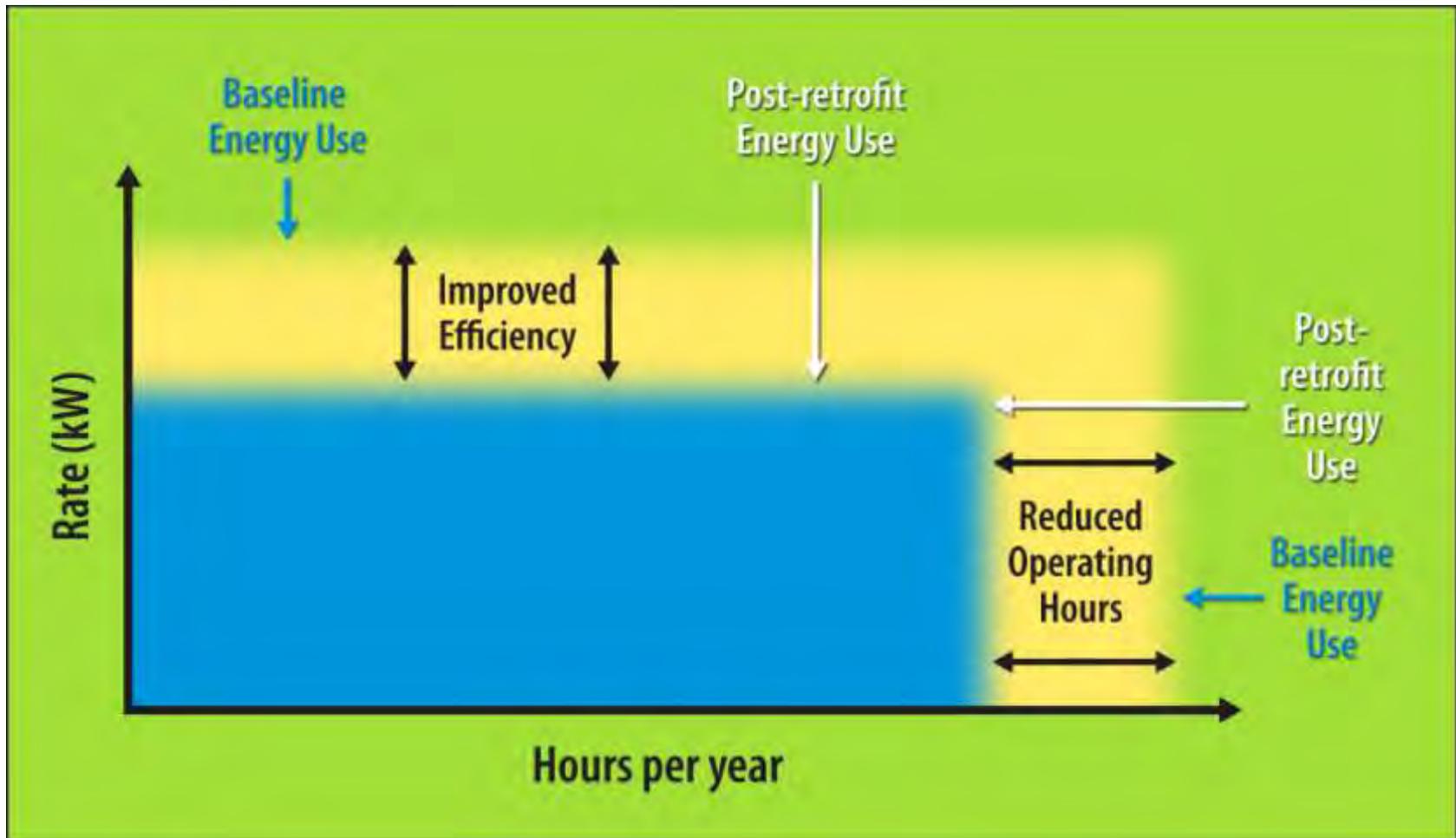
Allocation of Risk: M&V – Expected Savings

Performance and Usage: Ideal



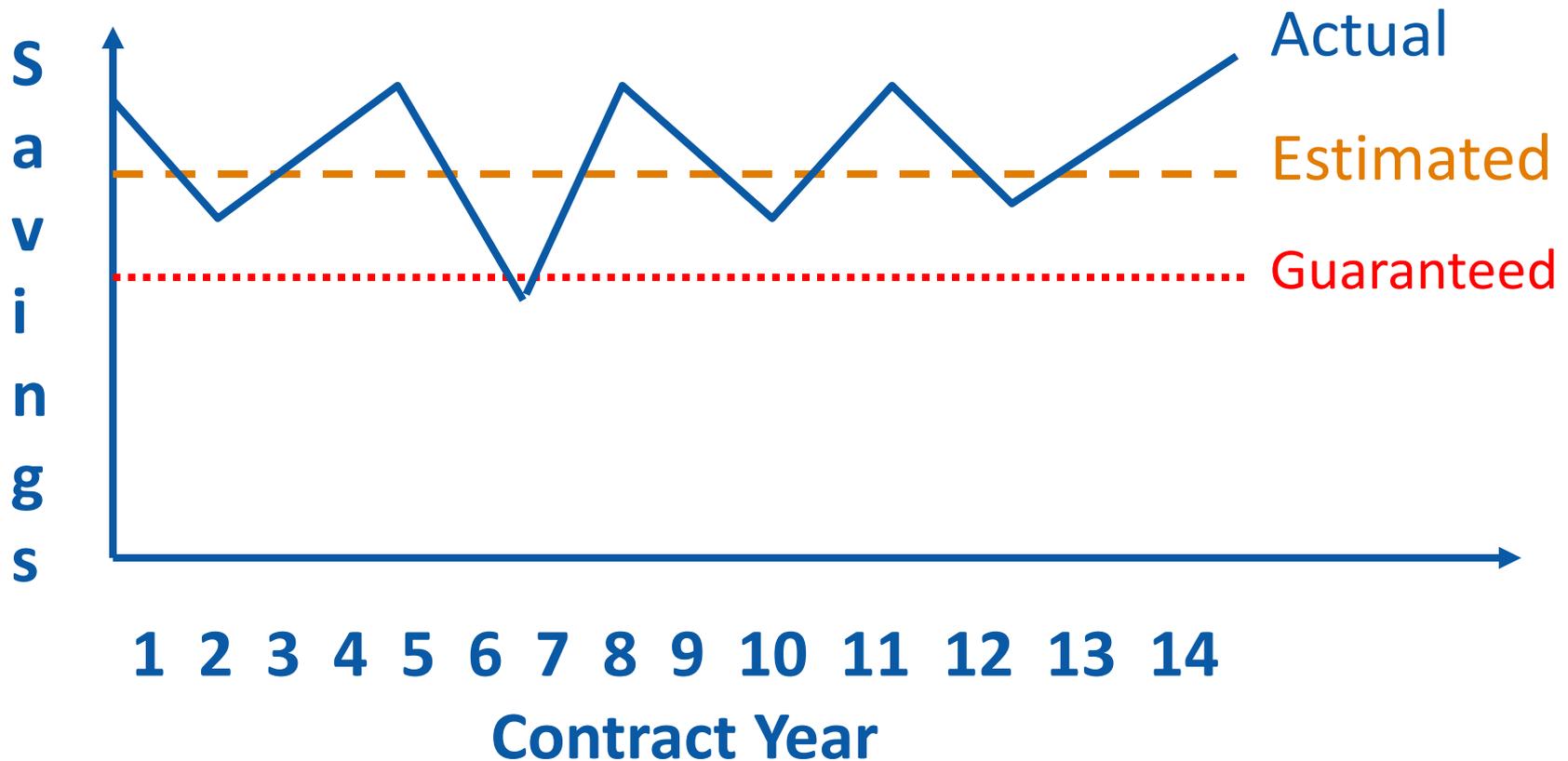
Allocation of Risk: M&V – Savings Uncertainty

Performance and Usage: Real



Allocation of Risk: M&V to Manage Risk

Actual saving will fluctuate, but should always exceed guaranteed amount



Risk Allocation: M&V

Options A, B, C, and D

Options address risk allocation

Each ECM assigned an M&V option

Measurements differ by:

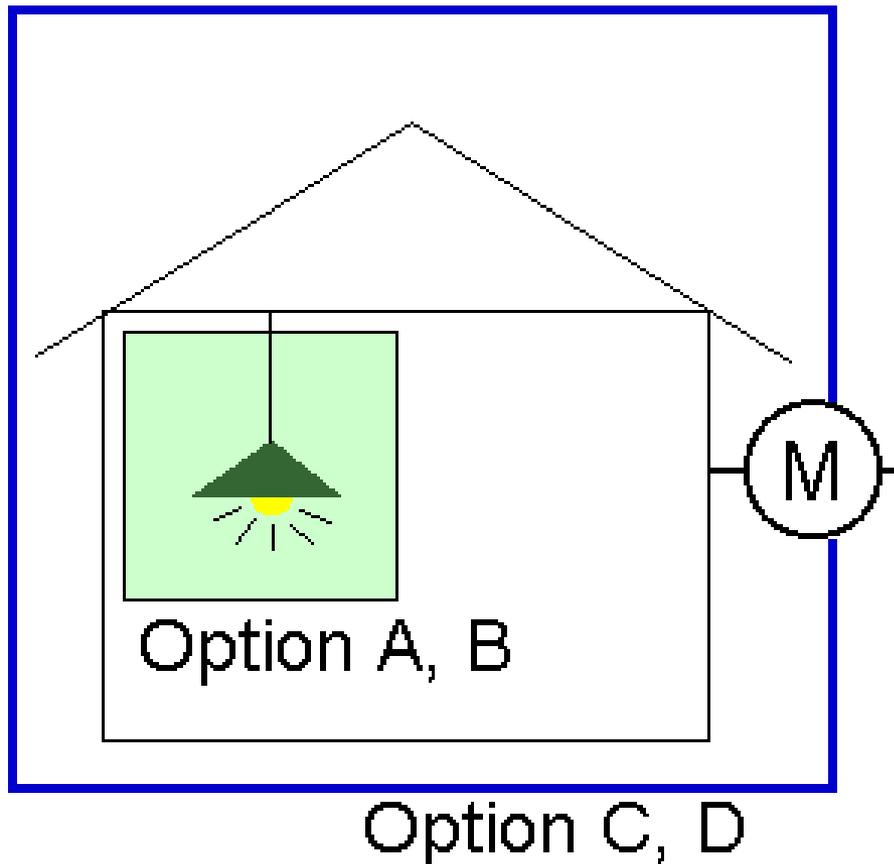
- Level – individual system vs. whole building
- Duration – spot, short-term, periodic, continual
- Degree of stipulation
- Expense
 - Up-front – can range from 1 to 15% (avg. 3%) of project investment
 - Annual – averages about 3% of annual savings

Risk Allocation: M&V – IPMVP Options

M&V Option	How Savings are Calculated
Option A: “Retrofit Isolation, Key Parameter” – Based on <i>measured</i> equipment performance, measured or <i>estimated</i> operational factors, and annual verification of “ <i>potential to perform.</i> ”	Engineering calculations using measured and estimated data
Option B: “Retrofit Isolation, All Parameters” – Based on <i>measurements</i> (usually <i>periodic or continuous</i>) taken of all relevant parameters.	Engineering calculations using measured data
Option C: Based on <i>whole-building</i> or facility-level utility meter data adjusted for weather and/or other factors.	Analysis of utility meter data
Option D: Based on <i>computer simulation</i> of building or process; simulation is calibrated with measured data.	Comparing different models

Risk Allocation: M&V – IPMVP Options

Options A and B vs. Options C and D



Options A&B are retrofit-isolation methods.

Options C&D are whole-facility methods.

The difference is where the boundary lines are drawn.

Risk Allocation: M&V – Best Practices

- Balance savings assurance against added cost
- Require measurement of ECM key performance parameters
- Degree/cost/rigor of M&V proportional to
 - The ECM's expected savings
 - The ECM's performance risk

Risk Allocation: —Risk in ESPC Context

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- To ESCO – chance that guarantee will not be met and shortfall will be identified: Will have to pay agency the difference
- To Agency – chance that savings you are paying for are not realized: Savings might not exceed payments

Risk Allocation: The Guarantees

ESPC Guarantees

- A specified level of cost savings
(one total dollar amount)
- Specified equipment performance
(and standards of performance)

What Is Actually Guaranteed Depends on:

- Who takes risk/responsibility for what in the task order
- The M&V plan – how savings will be calculated

Risk Allocation: The Risk, Responsibility, and Performance Matrix (RRPM)

A summary of key contract elements related to risks and/or responsibilities that can be assigned to the ESCO, or to the agency, or shared

- Details are in the contract
- Can be incorporated into the contract
- Topics in 3 categories: Financial, Operational, and Performance
- Purposes:
 - Education about risks
 - How contract elements affect costs and savings
 - How to tailor contract to match agency needs
 - Structure for decision making
 - Documentation of agreements

Risk Allocation: The Risk, Responsibility, and Performance Matrix (RRPM) – Addressed Risk Types

- Financial
- Construction Costs
- M&V Confidence
- “Other” savings
- Delays
- Major Facility Changes
- Operational
- Loads and Operating Hours
- Weather
- User
- Performance – O&M & R&R major factors to consider in performance risk
- Future Energy Prices – Setting Escalation Rates

Risk Allocation: The Risk, Responsibility, and Performance Matrix (RRPM) – Takeaways

- Ensures that important risks are addressed and responsibilities assigned
- Dialog fosters mutual understanding of the deal
- Use the RRPM to guide final proposal review — details in M&V Plan and other parts should not conflict with RRPM
- Don't take a responsibility that your organization is not likely to handle well!

ESPC Contacts and References

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Energy Services Coalition Model Procurement and Contracting Documents:

<http://www.energyservicescoalition.org/resources/model/index.html>

Department of Energy ESPC Website:

<http://www1.eere.energy.gov/femp/financing/espcs.html>

IPMVP Page on EVO Website:

http://www.evo-world.org/index.php?option=com_content&task=view&id=272&Itemid=279&lang=en