



Risk & Responsibility Matrix

*Recognizing and Assigning Risks in
DOE Super ESPC Contracts*

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August 11, 2004

At the Heart of the Matter...



- ESPCs are backed by a guarantee of a specified level of cost savings and performance
- Government is not obligated to pay for an unmet guarantee
- Question is ...
 - What specifically is being guaranteed?
 - Who is responsible for factors that affect performance and savings?
 - Who pays for what?

There is no cookie cutter approach ...



- To achieve best value, the government tailors the contract to suit their site's needs, circumstances, and resources.
- Inherent to the DOE Super ESPC is a broad latitude for the government to negotiate a deal ..
 - to effectively use the agency's resources
 - to yield optimum value
 - that makes good business sense

The Risk & Responsibility (R/R) Matrix



- The R/R matrix provides a process for working through the many “forks in the road” that one must face during the ESPC development process.
- The R/R matrix provides a means to address the various options and allocates responsibilities between the ESCO and the government.

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Types of Risk



Performance	Usage	Financial	Uncertainty
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- Energy savings are based on:
 - Performance
 - Usage
- Cost savings are based on:
 - Financial elements
 - Uncertainty in the energy savings

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Performance Risk



Performance	Usage	Financial	Uncertainty
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- Performance may be compromised by poor design or implementation.
- Equipment performance may change over time due to degradation and/or poor O&M practices.
- *These are factors that the contractor normally (but not always) controls.*

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Usage Risk

Performance	Usage	Financial	Uncertainty
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- Usage can be defined as:
 - operating hours (lighting, equipment)
 - occupancy or schedules
 - heating and cooling loads (and setpoints)
 - weather
 - production
- *These are factors that the agency (or no one) controls.*

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Financial Risk

Performance	Usage	Financial	Uncertainty
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- Energy savings must be converted to cost savings.
- What energy rates will be used?
- How might they change over time?
- What other savings will be claimed?

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Savings Uncertainty

Performance	Usage	Financial	Uncertainty
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- We don't measure savings, we measure energy use before and after — the savings are the difference.
- We never know the exact energy use before and after — there is always some uncertainty in each.
- Claimed savings are always *estimates* because savings cannot be measured.

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Structure of the Matrix



- Divided into three categories of risk
- Financial risk addresses the money-related risks to the project (implementation and financing costs, and translating energy to dollar savings).
- Given the importance of energy savings, it is addressed in the remaining two categories:
 - Operational risk
 - Performance risk

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General Principles



- Logic and cost-effectiveness drive responsibility allocation.
- Responsible party then predicts likely tasks/costs to fulfill responsibility, makes sure they're covered in ESPC or agency budget (government pays foreseeable costs).
- Unforeseen costs are paid by the party who caused the cost, or by party who is responsible for that risk area.
- FEMP helps parties complete matrix.

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Financial Risk



Performance	Operational	Financial
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- Interest Rate
- Energy Prices
- Construction Costs
- M&V Costs
- Non-Energy Cost Savings
- Delays
- Major Changes in Facility

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Example – Energy Prices



Performance

Usage

Financial

- Energy prices fluctuate. In a long-term contract, how will the saved energy be valued?
- On current rates fixed for the contract?
- On real rates that fluctuate over time?
- On fixed rates that escalate for inflation?

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Example - Energy Prices



Performance

Usage

Financial

- Fixed rates are easiest to understand, but may not be realistic in 15+ year contract.
- No one can predict what future rates will do. Sudden price escalation can make savings seem to disappear.
- Escalating rates for assumed inflation minimizes risk and reflects real economics.

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Operational Risk



Performance

Operational

Financial

- Operating Hours
- Load
- Weather
- User Participation

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Example – Weather  

Performance	Usage	Financial
<ul style="list-style-type: none"> • No one but Mother Nature controls the weather, but it can be a major factor in energy use. • How shall the baseline be adjusted for weather conditions? • What happens in mild seasons when promised savings may not materialize? • What happens in severe seasons? 		

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Performance Risk  

Performance	Operational	Financial
<ul style="list-style-type: none"> • Equipment Performance • Operations • Preventive Maintenance • Equipment Repair and Replacement 		

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Example – Preventative Maintenance 

Performance	Operational	Financial
<ul style="list-style-type: none"> • Preventive maintenance is a must • The ESCO always bears the ultimate responsibility due to the guarantee being offered • What is at stake is who performs the day-to-day activities. • This is negotiable (specify in the matrix) • Also — address recourse in event of failure to deliver 		

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Conclusions on Matrix



Performance

Usage

Financial

- Allows one to study and understand all aspects of the Super ESPC deal
- Ensures that important risks are addressed early and responsibilities assigned
- Dialog fosters mutual understanding of the deal
- FEMP is there to help ensure that matrix serves its purpose, especially at initial proposal and detailed energy survey

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