



*An Innovative Approach to Financing a
Government Fuel Cell Project and
Understanding the Government Customer*

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Market Transformation**

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AUTHORITY and DIRECTION

➤ ***Examples of Congressional and Administration Direction***

- EPACT 1992, 2005 & EISA 2007
- §48 Investment Tax Credit, §45 Production Tax Credit
- Executive Order 13123 and 13423
- National Energy Conservation Policy Act –NECPA- (P.L. 99-272)
- The Information Technology Management Reform Act of 1996 (Clinger-Cohen)
- Department of Energy Organization Act of 1977
- Federal Property and Administrative Services Act of 1949
- The Reclamation Act of 1902 & 1939
- ...and more

➤ ***GAO***

- B-287488 General Counsel Letter, Senator Joseph I. Lieberman, Chairman, Committee on Governmental Affairs, “Issues related to share-in-savings contract authorities of the National Energy Conservation Policy Act and the Clinger-Cohen Act,” June 19, 2001
- GAO-05-55 Report – “Partnerships and Energy Savings Performance Contracts Raise Budgeting and Monitoring Concerns”

➤ ***EERE Transformational Energy Action Management (TEAM) Initiative***



ESTABLISHED FUNDING MECHANISMS

- **Energy Savings Performance Contract (ESPC)**
 - National Energy Conservation Policy Act of 1978 (NECPA)
 - Strategy devised to make energy efficiency improvements to aging buildings and facilities and meet federal energy performance goals
 - Easily used for readily available commercial products and services
 - Energy Service Company (ESCO) bears the risk of the improvement's failure by guaranteeing a project's energy savings

- **Utility Service Performance Contracts (UESC)**
 - Energy Policy Act of 1992
 - Encouraged energy efficiency, water conservation and electricity management improvements through public utility incentive programs
 - Allowed agencies to accept financial incentives, goods and services generally available to non-federal customers
 - Encouraged agencies to negotiate with utilities on the design of programs that address the unique needs of federal facilities

- **Energy Service Agreement/Power Purchasing Agreement (ESA/PPA)**
 - Reclamation Act of 1902, 1939; The Department of Energy Organization Act of 1977; EPACT 2005
 - Provides a contract, between a developer and electricity buyer, or facility owner, for on-site generation & sale of electricity and related services



“SERVICE” vs “SAVINGS”

- Both Energy ***Savings*** Performance Contracts (ESPC) and Utility Energy ***Service*** Contracts (UESC) are debt-based ***third party*** financing mechanisms.

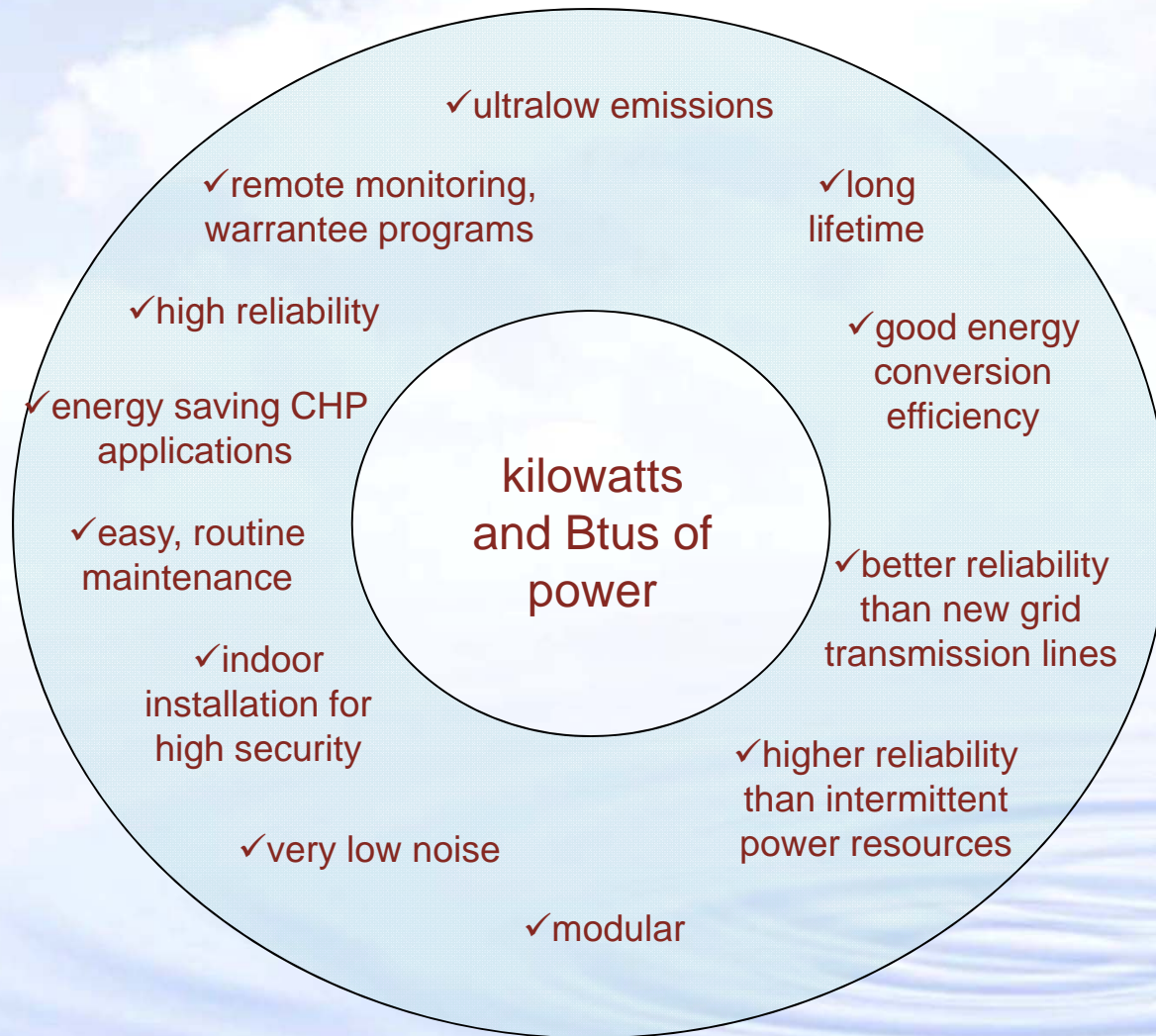
- Loan amounts, in addition to expected capital equipment charges, for both ***ESPC*** and ***UESC*** projects include the --
 - engineering assessment,
 - project management,
 - overhead costs, and
 - a separate charge for private company profits or utility operating margins.

- Loan repayment:
 - ***For ESPC:*** ***Must*** come from the energy cost savings generated by undertaking the project.
 - ***For UESC:*** ***Can*** come from the project's cost savings ***or*** other federal or private sources.

- Loan repayment is based on --
 - ***ESPC*** cost savings only, and by legislative mandate must be guaranteed before government approval.
 - ***UESC*** project suitability determined by life cycle cost (LCC) analysis and is approved by the utility company management.



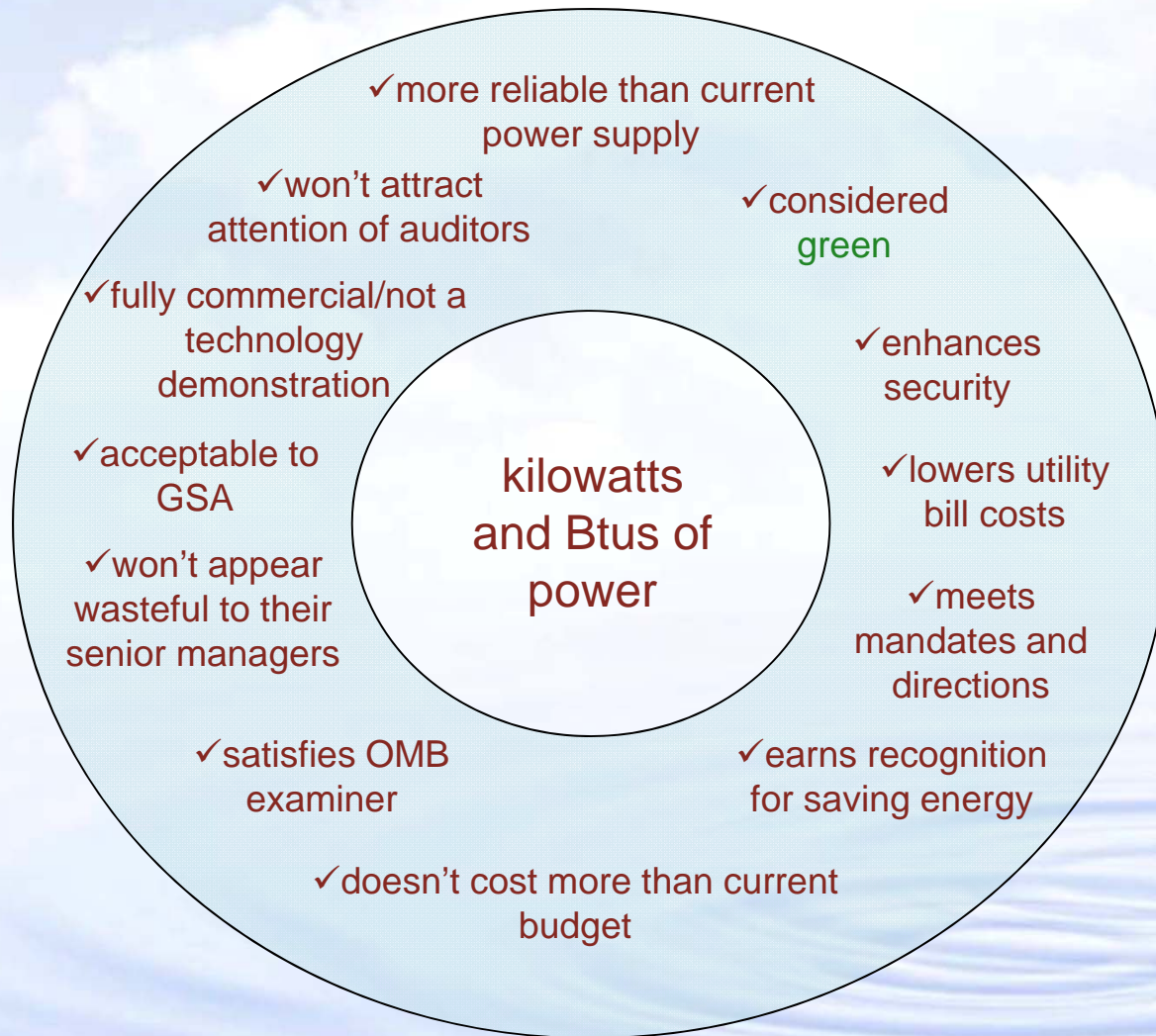
FUEL CELLS OFFER ATTRIBUTES AND BENEFITS



➤ *A customer buys a product based on both physical attributes, **what it is**, and perceived benefits, **what it provides**.*



ATTRIBUTES AND BENEFITS WHEN A FUEL CELL IS PART OF AN ENERGY CONSERVATION MEASURE



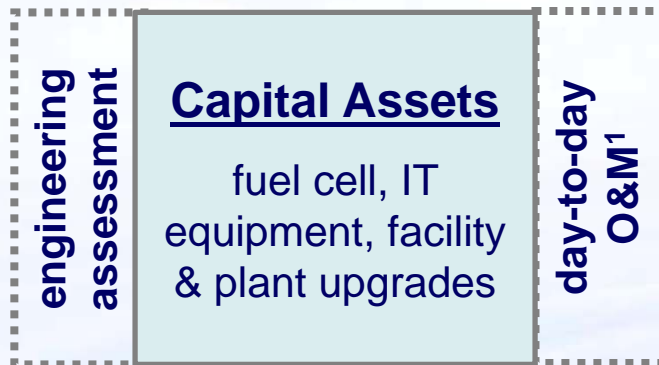
DOE data center energy conservation measure --
Upgrade the data center to include unique premium on-site power generation, energy efficient operation, improved reliability, environmental benefits and the ability to support grid reliability margin.



RESTRUCTURING THE TYPICAL CONTRACT

*Minimize government outlays: **Step 1** separate the energy service contract costs into three parts – the up front one time costs like the engineering assessment, the fixed costs of the purchase and installation of capital assets, and the variable costs of day-to-day operations and maintenance.*

Cost Structure of a Typical Energy Savings/Service Project Contract



➤ Bundling the capital costs associated with all assets allows the government to take advantage of energy service contract buy-out options

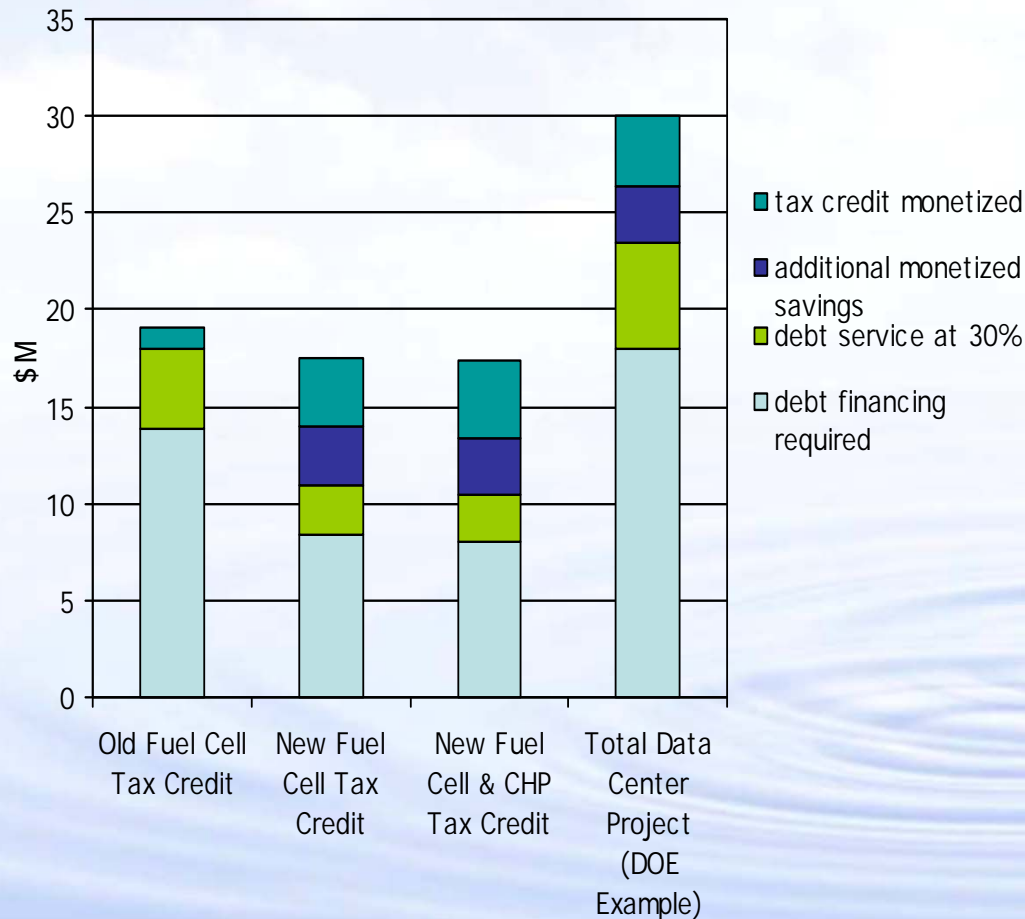
¹ additional fuel costs (grid electricity, natural gas,) day to day operations & maintenance currently covered by the Department's working capital appropriation



THE BOTTOM LINE

Minimize Government Outlays: **Step 2** Monetize as many tax credit incentives and tax deductible business charges as possible and transfer assets to a private equity investment group

**\$25 M Data Center Upgrade Project
With a \$15M CHP Fuel Cell System**



- **“Old” far left** – about 10% of the fuel cell system cost could be monetized (\$13.8 M debt \$4.14M interest)
- **“New” 2nd left** – over 40% of the fuel cell system could be monetized (\$8.4 M debt, \$2.52M interest)
- **“New with CHP” 2nd right** – close to 50% of the CHP fuel cell system could be monetized (\$8M debt, \$2.4M interest)
- **“New with CHP” far right** -- about 28% of the total project costs monetized (\$18M debt, \$5.4 M interest)



RECOMMENDATIONS FOR FEDERAL BUYERS AND SELLERS

- Use an innovative financing strategy to minimize the overall government outlay.
- Monetize ALL possible tax credit incentives and deductible business charges.
- Use a contracting mechanism that supports/allows buy outs of part or all of the costs for private equity investment group/off the balance sheet financing.
- Compete the whole project so developers, lenders, OEMs, utilities, and energy service contractors negotiate individual prices amongst themselves and offer the government the best deal possible.
- Look into lending options from an agency's working capital funds.
- Approach the government sale as a *service* not a product.

"...use federal tax policy to catalyze and accelerate private infrastructure financing and capital flows..." Former Assistant Secretary Alexander Karsner, before the Committee on Appropriations, Subcommittee on Energy and Water, United States Senate, May 8, 2007