



MARYLAND PUBLIC SCHOOLS

ENERGY PERFORMANCE CONTRACTING

and

ENERGY PROJECT FINANCING

October 4, 2005





Energy Performance Contracting

- **Guaranteed Turnkey Solution – design, construction, commissioning**
- **New assets, additional capacity and reliability – energy focused**
- **Paid for from guaranteed cost savings:**
 - Energy – reduced consumption and demand
 - Operational – maintenance, service contracts
 - Capital Avoidance – offset future planned projects, reallocate monies
- **No upfront cash flow requirements**
- **Energy education and awareness**
- **Ongoing performance period services**





Energy Performance Contracting

Additional resource and solution for:

- **Assets that are beyond useful life**
- **Need for additional heating or cooling capacity**
- **Limited or no budget and resources (time and staff)**
- **Deferred maintenance**
- **Eliminating “hot” and “cold” calls**
- **Generating positive cash flow**
- **Meeting ASHRAE (IAQ) and IESNA (lighting) guidelines**
- **Re-commissioning HVAC systems**





Become an Energy Leader in MD

Doing so allows you to:

- **Give new life to old schools and buildings**
- **Pro-actively manage soaring energy costs**
- **Improve student, employee comfort**
- **Demonstrate energy responsibility by:**
 - Becoming an environmental steward
 - Meeting state energy goals (EO 01.01.2001.02)



Capital Project vs. Performance Contract

▪ Capital Project

- Spec and Bid
- Lowest “First” Cost
- Individual Project(s)
- More Internal Resources Needed
- OEM Warranty Only
- Core Competency: Education
- Budget Uncertainty
- Higher Cost of Bond Issuance (longer term add 50 to 75 bps)

▪ Performance Contract

- Performance Based
- Best Value, Life Cycle Cost
- Turnkey, Comprehensive, Systematic Approach
- Guaranteed for Term
- Core Competency: Energy Management
- Alternative Funding Source, May Not Be Considered Debt
- Lower Cost of Funds (12-year term is 50 to 75 bps less)

Vendor and Technology Neutral Solutions to:

- **HVAC/Mechanical/Distribution**
 - Chillers and Boilers
 - Air Handling Units – VAV
 - Cooling Towers
 - Motors - VFDs
- **Lighting and Water**
- **Building Envelope**
- **Backup Generation**
- **Metering, sub-metering**
- **EMCS – take control**
 - Setbacks, shutdowns
 - Temperature resets
 - Enthalpy economizers
 - Dry bulb economizers
 - CO₂ Sensors
 - Remote monitoring, alarming
- **Renewable Projects**
 - Geothermal
 - Photovoltaic, Solar Heating
 - Landfill Gas to Energy



Sample Project Economics

Current

Baseline Annual Energy Costs	\$ 2,000,000
Building Size (square feet)	1,250,000
Baseline Energy Cost per SF	\$ 1.60

Cost Component	% of Costs	Baseline Costs
Lighting	12.5%	\$250,000
Cooling	25.0%	\$500,000
Heating	30.0%	\$600,000
Building "Plug" Load	12.5%	\$250,000
Water and Sewer	20.0%	\$400,000
Total Energy and Water Costs	100.0%	\$2,000,000



Proposed Project and Cash Flows

Project Component	EPC Cost	% Savings	Annual Savings	Payback (years)
Lighting Project	\$437,500	35.0%	\$87,500	5
Cooling Project	\$1,500,000	20.0%	\$100,000	15
Heating Project	\$960,000	20.0%	\$120,000	8
Building "Plug" Load	\$10,000	2.0%	\$5,000	2
Water and Sewer Project	\$480,000	20.0%	\$80,000	6
Total Energy and Water Costs	\$3,387,500	19.6%	\$392,500	8.6



Period	Annual Savings	Lease Payments	M&V Costs	Net Cash Flow
Years 1 to 12	\$392,500	(\$360,945)	(\$15,700)	\$15,855
12 Year Total	\$4,710,000	(\$4,331,346)	(\$188,400)	\$190,254





Measurement & Verification

- **Goals:**
 - Eliminate your project risk - validate project savings
 - Provide a “best value” M&V plan
 - Use DOE/IPMVP protocols
- **Recommend Pre-installation & Post-installation performance measurements w/ stipulated parameters and variables**
- **Annual performance measurements and site surveys for the contract term**
- **Pepco Energy will work with you to tailor to your preferences**

**Conservative
Approach**



Performance Contracting Approach

**The needs of your schools are unique.
The performance contract should reflect those needs.**

- **Open, flexible and comprehensive**
- **Thorough, realistic and innovative engineering**
- **Technology and brand neutral**
- **Local subcontractors, strategic partners**
- **Experienced, on-site project management**
- **Turn-key solution with long-term follow through**
- **Work cooperatively and collaboratively with stakeholders**





The Project “Stakeholders”

All stakeholders are integral to success....

- Energy Manager – eyes and ears of all things energy
- Facilities and Maintenance – responsible for these schools
- Construction and Planning – typically indirect participation
- Procurement – know and understand all of your options
- Principals – keep informed early on, solicit their input
- Custodial Staff – know the buildings better than most
- Executive Staff – early support and approval is critical
- Board of Education – the ultimate decision makers





Performance Contract Steps

- **Identification of specific needs and goals**
 - Capital, operating, and energy budgets are good indicator
- **Preliminary study – identify biggest energy users**
- **Technical Audit – go/no-go decision based on actual findings**
- **Energy Services Agreement**
 - Finalize Scope, Savings, Schedule, Financing, Guarantee
- **Implementation and Commissioning**
- **On-going performance period**





Maryland DGS IDC Contract

- Awarded April 2004
- 9 ESCOs applied, 4 qualified
 - Pepco Energy highest rated
- Enables qualified entities to “piggyback”
- Procure performance contracting services
- Terms and conditions for the project
- Other procurement options available



Contract No.

DGS-03-EPC-IDC-4.0



- **Funding Sources –**
 - Cash - appropriated funds, grants, or;
 - Borrow - use someone else's money to acquire assets
- **Present Value – the lump sum “out of pocket” cost to acquire an asset today, the principal amount**
- **Interest – your cost, over and above the principal, to borrow, rent, or lease**
- **Flexible structures – rates, terms, terms and conditions**
- **Tax-exempt rates for direct issuers or “conduit” issuers**
- **Issues – budgets, credit, timing, documentation, BS, covenants, laws**



Project Financing - Leasing

- **3rd Party Tax-exempt lease purchase**
 - Cost-effective, proven structure
 - Seamless to customer
 - May not constitute debt (subject to appropriations)
 - Several lenders have significant EPC experience

- **State of Maryland – Master Lease Purchase**
 - Administered by MEA and Treasury Office
 - \$30 million credit facility through Bank of America
 - Term up to 15-years, 5 year Treasury times spread factor

Term	3	4	5	6	7	8	9	10	11	12	13	14	15
Spread	0.73	0.78	0.84	0.89	0.93	0.97	1.01	1.04	1.07	1.09	1.12	1.14	1.17

- State Entities – or need a “conduit”, perhaps MD Dept. of Ed.





Project Financing – MEA Loans

- **CELP - Community Energy Loan Program**
 - Local government, schools, community colleges
 - \$600k available per loan
 - Simple payback must be 7 years or less
- **SALP – State Agency Loan Program**
 - State facilities only
 - 1% administration fee, no interest



Project Financing - Bonds

- **GO - General Obligation Bonds**
 - Long-term issue for general funding needs
- **Revenue Bonds**
 - Financing for a revenue producing facility or asset
- **QZAB – Qualified Zone Academy Bonds**
 - Needs based, 22 of 24 MD school districts qualify
 - State issued bonds, allocates proceeds, no repayment to State
 - Schools submit projects for review and approval
 - Capital improvements, repairs, deferred maintenance qualifies
 - 10% matching business partner required for an academic program



Project Financing – Grants

The best things in life are free...

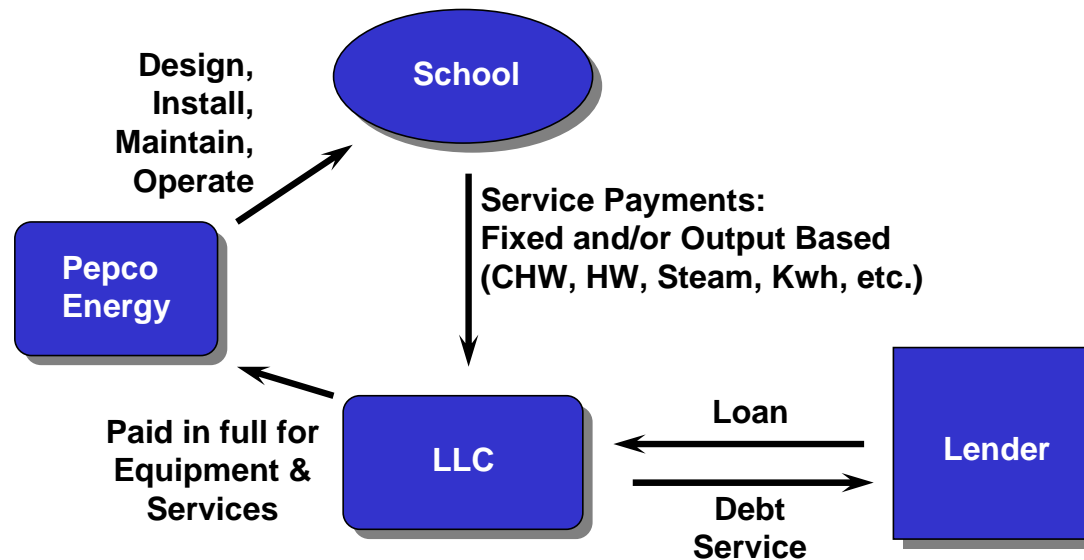
- **MEA – Solar Schools Program**
 - Minimum 1 kW photovoltaic system
 - \$4,000 available
 - Tie to grid, net-metering
- **DOE, EPA, US Green Building Council**
- **Product Manufacturer**
- **Pepco Energy – Preliminary Energy Study**



The "BOOM" Project

(Build, Own, Operate And Maintain)

Energy "Island" Project





Pepco Energy Services

- **Pepco Energy Services, Inc.**

- Diversified Energy Services Company
- \$1.4 Billion 2004 Revenue
- 610 employees
- Unregulated Subsidiary of Pepco Holdings, Inc.

**Qualified ESCO in
MD, PA, VA, NC**

#1 Rated by DGS

**Over \$500 Million in
Projects**

NAESCO Accredited

**Currently Serving
Over 2,500 MW**

- **Pepco Holdings, Inc.**

- Investment grade rating
- \$13.3 billion Assets
- \$3.4 billion Net Worth
- \$7.2 billion 2004 Revenue

Over 100 Year History





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