

**ENERGY PERFORMANCE CONTRACTING
(EPC)
FOR STATE AGENCIES & PUBLIC BODIES**

Division of Energy

nam.nguyen@dmme.virginia.gov

05.04.18

VIRGINIA ENERGY MANAGEMENT PROGRAM (VEMP)

- Energy Performance Contracting (EPC)
- Demand Response Program (DR)
- State energy fuel procurement contracts
- Technical advisor on energy issues

EPC CONTRACT

- EPC procurement contract and process for state agencies falls under the Commonwealth of Virginia Contract Number: **E194-77519**
- Posted on eVA, the eProcurement Portal: eva.virginia.gov

Contract Number	NIGP	Description	Contractors	Authorized Entities	Contract Type	Starts	Ends	Buyer							
E194-77519	98131	ESCO Pre-Qualified Energy Performance Contractors	ENERGY SYSTEMS GROUP, LLC JOHNSON CONTROLS INC AECOM TECHNICAL SERVICES HONEYWELL INTERNATIONAL INC CMTA INC CLARK ENERGY GROUP LLC SCHNEIDER ELECTRIC SOUTHLAND INDUSTRIES OF VIRGINIA WENDEL ENERGY SERVICES LLC NORESCO LLC SIEMENS INDUSTRY INC AMERESCO INC TRANE U.S. INC ABM BUILDING SERVICE LLC CONSTELLATION NEWENERGY - GAS DIV LLC	State / Localities	Optional Statewide Contract	11/13/2017	11/12/2019	Sharita Bryant							
<table border="1"> <thead> <tr> <th>Contract File</th> </tr> </thead> <tbody> <tr> <td>ESCO Pre-Qualification Summary (77519_Summary_ESCO.pdf)</td> </tr> <tr> <td>Sample RFP Back of the Envelope (Attachment A - Sample Request for Proposal for the Back of the Envelope.pdf)</td> </tr> <tr> <td>ESCO Flowchart and Timeline (ESCO Flowchart and timeline.pdf)</td> </tr> <tr> <td>Sample ESCO Performance Detail Form (Attachment A.1_Sample ESCO Performance detail form.pdf)</td> </tr> <tr> <td>Sample ESCO Energy Conservation Measure Detail Form (Attachment A.2_Sample ESCO Energy Conservation Measure Detail Form.pdf)</td> </tr> <tr> <td>Sample Technical Audit Memorandum of Understanding (Attachment B - Sample Technical Audit Memorandum of Understanding.pdf)</td> </tr> </tbody> </table>									Contract File	ESCO Pre-Qualification Summary (77519_Summary_ESCO.pdf)	Sample RFP Back of the Envelope (Attachment A - Sample Request for Proposal for the Back of the Envelope.pdf)	ESCO Flowchart and Timeline (ESCO Flowchart and timeline.pdf)	Sample ESCO Performance Detail Form (Attachment A.1_Sample ESCO Performance detail form.pdf)	Sample ESCO Energy Conservation Measure Detail Form (Attachment A.2_Sample ESCO Energy Conservation Measure Detail Form.pdf)	Sample Technical Audit Memorandum of Understanding (Attachment B - Sample Technical Audit Memorandum of Understanding.pdf)
Contract File															
ESCO Pre-Qualification Summary (77519_Summary_ESCO.pdf)															
Sample RFP Back of the Envelope (Attachment A - Sample Request for Proposal for the Back of the Envelope.pdf)															
ESCO Flowchart and Timeline (ESCO Flowchart and timeline.pdf)															
Sample ESCO Performance Detail Form (Attachment A.1_Sample ESCO Performance detail form.pdf)															
Sample ESCO Energy Conservation Measure Detail Form (Attachment A.2_Sample ESCO Energy Conservation Measure Detail Form.pdf)															
Sample Technical Audit Memorandum of Understanding (Attachment B - Sample Technical Audit Memorandum of Understanding.pdf)															

Available for optional use by public bodies in the Commonwealth

EPC PROCESS

- **15 Pre-qualified Energy Service Companies (ESCO'S)** certified by the State of Virginia
- **Back of the Envelope (BOE)** kick off meeting
- **BOE audit**
- ESCOs submit BOE audit findings/presentations & interviews
- Agency selects two or more ESCO's and begins negotiations
- Agency selects a single **partner (ESCO)** and signs the MOU for the **Investment Grade Energy Audit (IGA)**
- The **IGA** is a complete and exhaustive audit to determine energy consumption and savings potential
- Upon completion of the IGA , **YOU** define the project from the audit and negotiate the energy contract.

DMME SUPPORT THROUGHOUT THE ENTIRE PROCESS

PRE-QUALIFIED ESCO'S (AS OF NOVEMBER 2017)

ABM Building Services

AECOM

AMERESCO

Clark Energy Group

CMTA Inc.

CONSTELLATION NEWENERGY

Energy Systems Group

Honeywell Building Solution

Johnson Controls

NORESCO

Schneider Electric

Siemens

Southland Industries of Virginia

Trane U.S. Inc.

Wendel Energy Services

CONSIDERATIONS

- Associated work cannot be deemed construction
- Other than “Energy Upgrades”, code states:
 - Such contract may also provide capital contributions for the purchase and installation of energy conservation and facility and technology infrastructure upgrades and modernization measures that cannot be totally funded by the energy and operational savings (roof exception)
 - Security issues
 - Other technological/modernization measures
 - VOIP
 - Renewables

OTHER CONSIDERATIONS

- Open book pricing
- No change orders/FIRM FIXED PRICING AND “TURN KEY PROJECT”
IF THE ESCO MISSES SOMETHING, THEY PAY. NO CHANGE ORDERS!
- Overhead and profit/audit fees are negotiated
- You select equipment, no low bid
- You HELP select subcontractors
- If you have a viable project, you are already paying for an EPC by paying the utility companies \$ that could be reallocated to upgrade your facilities.
- Avoided energy costs are bonded and guaranteed by your ESCO
- If the ESCO does not meet savings the ESCO writes a check
DMME support throughout the process at no cost

TYPICAL PROJECT TIMELINE

- Construction can typically take anywhere from 6 months to 18 months depending upon the complexity of the project.
 - Project management!
 - Weekly/biweekly status meetings
 - Safety, security, documentation, etc.
 - There will be “bumps” along the way as with most construction projects
 - Progress payment; [ESCO paid through schedule of values for completed work](#)

DMME OFFERS HIGH LEVEL PM SUPPORT FOR EPC PROJECTS

MEASUREMENT & VERIFICATION (M&V)

- International performance measurement and verification protocol (IPMVP)
- M&V options depend upon the scope of work
- Match option to risk, you do not want to pay \$50 to verify \$10 in avoided costs.
- Yearly reconciliation required by code
- DMME review/consultation

EPC CUSTOMERS

- Universities
- DOC
- VEC
- VNG-DMA
- Museums
- DGS
- DFS
- Dept. Mental Health
- Public Schools
- Counties

KEY DOCUMENTS AND TECHNICAL SUPPORT

Issuing Entity Name Here
Address, City, State, and Zip Code

2017 Request for Proposal for the Back of the Envelope

<i>ISSUE DATE:</i>		<i>RFP #:</i>	
<i>COMMODITY CODE/CODES:</i>			
<i>TITLE:</i>	Back of the Envelope Request for an Energy Services Project		
<i>ISSUING AGENCY:</i>			
<i>USERS:</i>	Issuing agency		
<i>LOCATION OF WORK:</i>			
<i>SEALED PROPOSAL RECEIPT DATE AND TIME:</i>	This shall not be less than 30 days from date of issuance. Issuance in a paper is not required since this is a pre-qualified vendors list.		
<i>INITIAL PERIOD OF CONTRACT:</i>	Single project		
<i>ALL INQUIRIES FOR INFORMATION SHOULD BE DIRECTED TO:</i>	Include an email address		
<i>IF PROPOSALS ARE MAILED SEND TO THE FOLLOWING ADDRESS:</i>			
<i>IF PROPOSALS ARE HAND DELIVERED, DELIVER TO THE FOLLOWING ADDRESS:</i>			

MANDATORY PRE PROPOSAL CONFERENCE

<i>DATE:</i>	
<i>TIME:</i>	
<i>LOCATION:</i>	
<i>NO ONE WILL BE ADMITTED AFTER:</i>	
<i>IF SPECIAL ADA ACCOMODATIONS ARE NEEDED PLEASE CONTACT, NO LATER THAN:</i>	

EPC CASE STUDY

Western Tidewater Regional Jail Gets No-Tax Upgrade to Facilities

The Western Tidewater Regional Jail will soon replace outdated lighting and water systems with more energy-efficient equipment and the upgrades will come at no cost to taxpayers.

This month, Suffolk, Franklin and Isle of Wight County - the jail authority's three member jurisdictions - authorized the financing of a \$4.7 million energy performance contract with Siemens, the company that will oversee the work.

The changes are expected to save the jail about \$300,000 to \$400,000 a year. Under a state energy performance program through the Department of Mines, Minerals and Energy, the jail will pay off its loan for the improvements using the money it saves on energy costs. If the savings don't match what the contractor guaranteed, the contractor must make up the difference.

The jail will have 15 years to repay its loan.

Western Tidewater Regional Jail opened in 1992, and a majority of its systems are more than 20 years old, Smith said. The planned upgrades include changing the lighting to LEDs and switching to an ozone laundry system, which is commonly used in hotels and hospitals.

Toilets in each cell will be equipped with an electronic flushing system that uses less water.

Work is expected to about nine months.



EPC CASE STUDY

Virginia Department of Motor Vehicles – HQ Building Performance Contract

Project Size: \$6,909,086

Contract Date: August, 2012

Guaranteed Annual Energy Savings: \$284,130



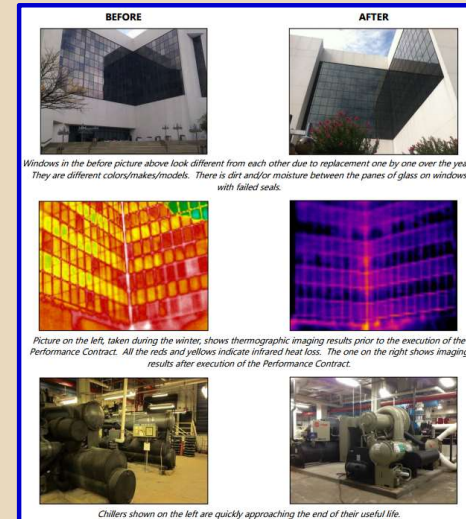
Prior to entering into an Energy Performance Contract with Trane, DMV's Headquarters Building (310,000 sq. ft.) in Richmond, VA had two 36-year-old centrifugal chillers and constant-volume pumps. The chiller plant operated at low efficiency due to aged equipment, antiquated controls, constant-volume operation, and an overall system design of low temperature differentials (10°F on both the chilled water and condenser water loops).

Trane redesigned the chilled water system with an EarthWise™ approach, focusing on optimizing the efficiency of the chiller plant while addressing the comfort needs of the building. The chillers were replaced with new centrifugal chillers with variable frequency drives (VFDs). The chilled water loop was converted to variable-volume flow. The new plant design utilized higher temperature differentials (16°F on the chilled water loop, 13°F on the condenser water loop), which improved efficiency and had the added benefit of allowing direct expansion (DX) air handling units to be converted to chilled water without increasing pipe sizes. New direct-digital controls (DDC) were installed on all of the equipment served by the chiller plant. The controls were programmed to optimize both energy efficiency and equipment life spans.

The boiler plant was also upgraded from constant-volume flow to variable-volume flow. Trane installed small boiler circulator pumps to keep a constant flow through the boilers, installed VFDs on the larger distribution pumps, and reconfigured the piping and control valves to accommodate the upgrades.

Upgrades to the DMV building included replacing all interior and exterior lighting systems with highly efficient illumination; water retrofits to increase energy efficiency and conserve water; deduct meters which help reduce sewer fees for cooling tower water; and replacement of over 1,200 windows.

DMV leaders expect the improvements to reduce energy consumption by approximately 36 percent and save \$284,130 a year. The upgrades also have reduced the buildings' environmental impact while improving building comfort for employees and visitors and supporting increased productivity for staff.



EPC CASE STUDY

Page County Public Schools
Luray, Virginia
CASE STUDY



Project AT-A-GLANCE:

Location:
Page County Schools
Luray, Virginia

Enrollment:
3,377 Students

Project Cost:
\$7.5M

Guaranteed Savings:
\$10.2M over 15 years

No Capital Required: The Energy Savings Performance Contract Option

The local Johnson Controls team developed a plan to fund the improvements through an energy savings performance contract. Under the contract, Johnson Controls guaranteed that, by making a series of upgrades to lighting and building controls across the district, Page County Public Schools would generate enough operational and utility savings to pay for upgrades and offset the cost of air conditioning the un-cooled classrooms.

Bottom Line Savings: \$10.2 million

The \$7.5M project is guaranteed to save Page County Public Schools \$10.2 million over 15 years, and included:

- A full LED lighting retrofit across eight district schools, guaranteed to save the district \$193,000 annually
- Metasys® Building Automation Systems installed to control and monitor critical energy systems, saving the district \$149,585 annually
- New HVAC systems to condition the air in previously un-cooled classrooms
- Replacement of outdated boiler and rooftop units

CONTACTS

Charlie Barksdale

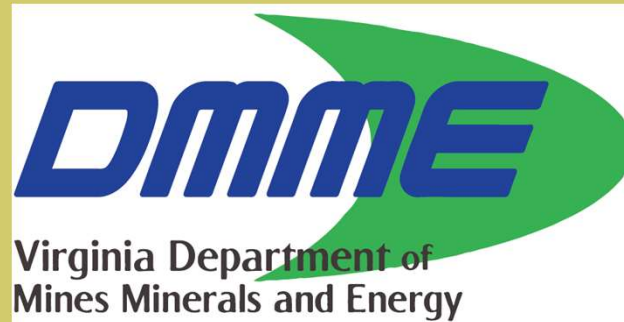
Phone: (804) 840.6932

Email: charlie.barksdale@dmme.virginia.gov

Nick Polier

Phone: (276) 523.8190

Email: nick.polier@dmme.virginia.gov



**ENERGY PERFORMANCE CONTRACTING
(EPC)
FOR STATE AGENCIES & PUBLIC BODIES**

Division of Energy

nam.nguyen@dmme.virginia.gov

05.04.18