

V I R G I N I A
Energy

Energy Savings Performance Contracting

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Agenda

- Terminology
- Energy Savings Performance Contracting
- Virginia's Statewide Procurement Program
- Virginia's ESPC Process
- Measurement & Verification
- Program Benefits
- Questions



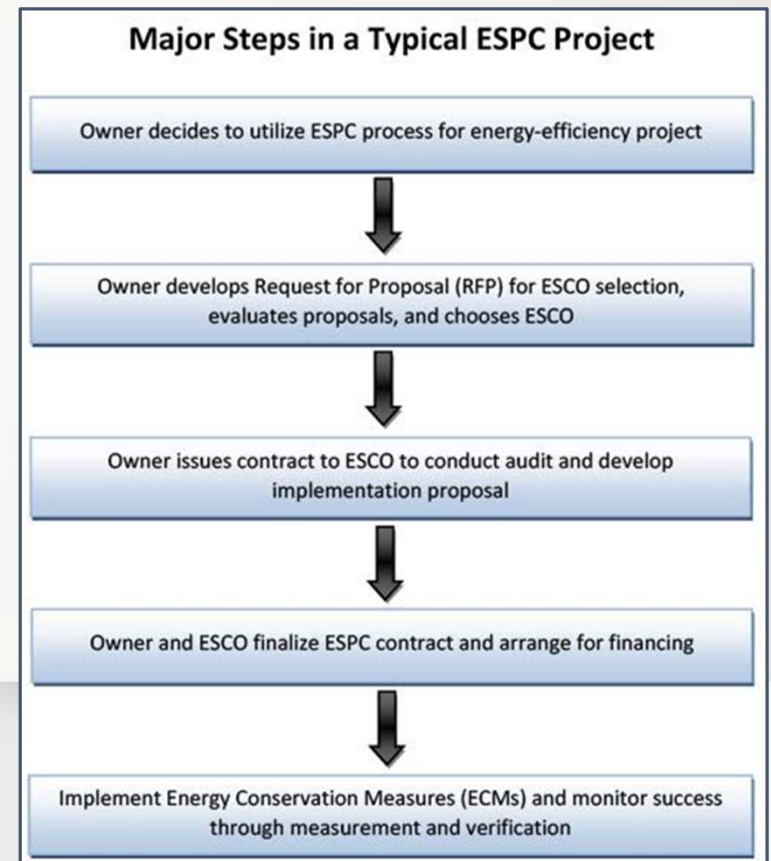
Terminology

- **BOE** = Back of the Envelope
- **ECM** = Energy Conservation Measure
- **EE** = Energy Efficiency
- **ESCO** = Energy Service Company/Contractor
- **ESPC** = Energy Savings Performance Contracting
- **IGA** = Investment Grade Audit (aka TEA)
- **M&V** = Measurement & Verification
- **MOU** = Memorandum of Understanding
- **TELP** = Tax Exempt Lease Purchase / Municipal Lease

Energy Savings Performance Contracts

ESPC is designed to be a vehicle for financing energy upgrades in facilities.

- Facility Needs identified
- Proposed ECMs selected
- Term of Contract defined
- “Avoided Cost” pays for the project
- Guaranteed kWh and \$ Savings
- Project Performance is verified



SOURCE: energy.gov/eere/

Financing ESPC Projects



- Capital Budget/Funds
- Grants/Rebates
- Loans
- Bonds
- Treasury (State Agencies)
- Leases
 - Tax-Exempt Lease Purchase

An Energy Services Company (ESCO) develops and implements the ESPC project and guarantees projected results. A third party finances the total project cost based on the guaranteed annual savings to pay for the improvements. The finance term is within 15 years (20 for public bodies), limited by the useful life of the equipment. The ESPC process is authorized in state statutes that set requirements.

SOURCE: <https://www.eergy.gov/eere>

Virginia's ESPC Program

- Virginia Energy is Technical Manager
- DGS is the Contract Manager
- Expedited Procurement
- Customer Involvement/Input
- Partner & Project Selection
- Annual Savings vs Annual Payments
- Virginia Energy Support



Virginia's ESPC Program

Commonwealth of Virginia Contract Number: E194-82899
Pre-Qualified ESCOS for Energy Performance Contracts
Period: Nov.2019 - Nov. 2029

ABM Building Services

AMERESCO

CEG Solutions

CMTA Inc.

DE Kirby Inc.

Energy Systems Group

Honeywell

Johnson Controls

Mckinstry Essention

McClure Company

Noresco

Wendel Energy Services

Schneider Electric

Siemens

Southland Energy

TEN

Trane



ESPC Process



1. Project Assessment

- i. VA Energy Consultations, Customer Needs, Process Requirements

2. Partner Procurement

- i. RFQ, BOE, Interviews, MOU

3. Project Development

- i. IGA, Project Selection, Contract

4. Project Delivery

- i. Design, Construction, Training, Closeout

5. Project Verification

- i. Guarantee/Realized, M&V



ESPC Common ECMs



- HVAC/IAQ
- Water/Plumbing
- VFDs
- Building Automation/Controls
- Boilers
- Transformers
- Chillers
- Windows
- Lighting/Occupancy Sensors
- Overall Improvement Of The Working Environment
- Renewables
- EV Charging Stations



Measurement & Verification

- Mandatory
- Verifies Project Performance
- Explains the How
- Review
- Life
- Non-Performance

Phase 3: Project Development

Determine baselines and estimated savings:
Defined in the investment-grade audit and proposal

Phase 3: Project Development

Develop M&V plan:
Created as part of the technical proposal

Phase 4: Implementation and Construction

Develop post-installation M&V report:
ECM performance verified

Phase 5: Post-Acceptance Performance

Perform annual M&V:
*Activities outlined in M&V plan
Findings documented in M&V reports*

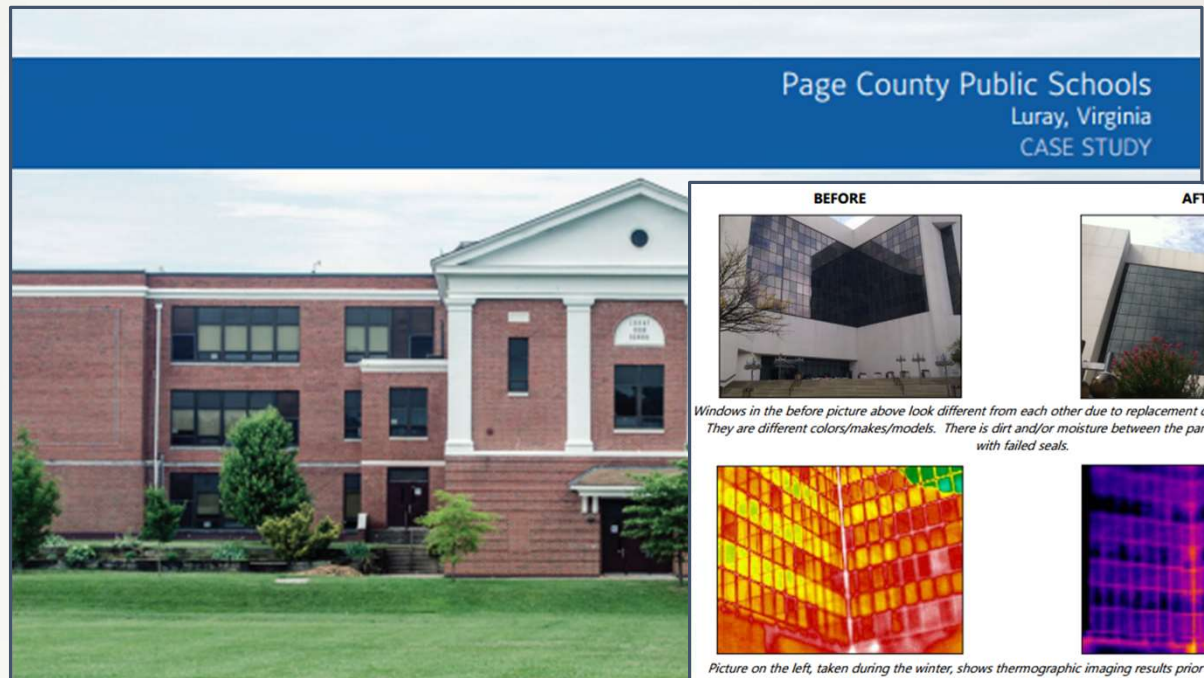




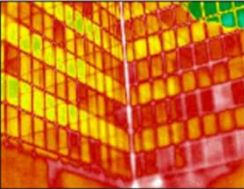
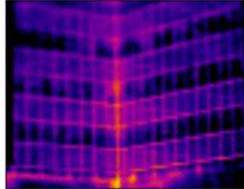


SOURCE: energy.gov/eere/femp/

Virginia's ESPC Program

Projects/Customers

- Universities/Higher Ed.
- State Agencies
- Public Schools
- Counties
- Cities/Towns
- Correctional Facilities
- Military/National Guard
- Museums
- Regional Jails
- Labs/Medical/Scientific
- Recreational



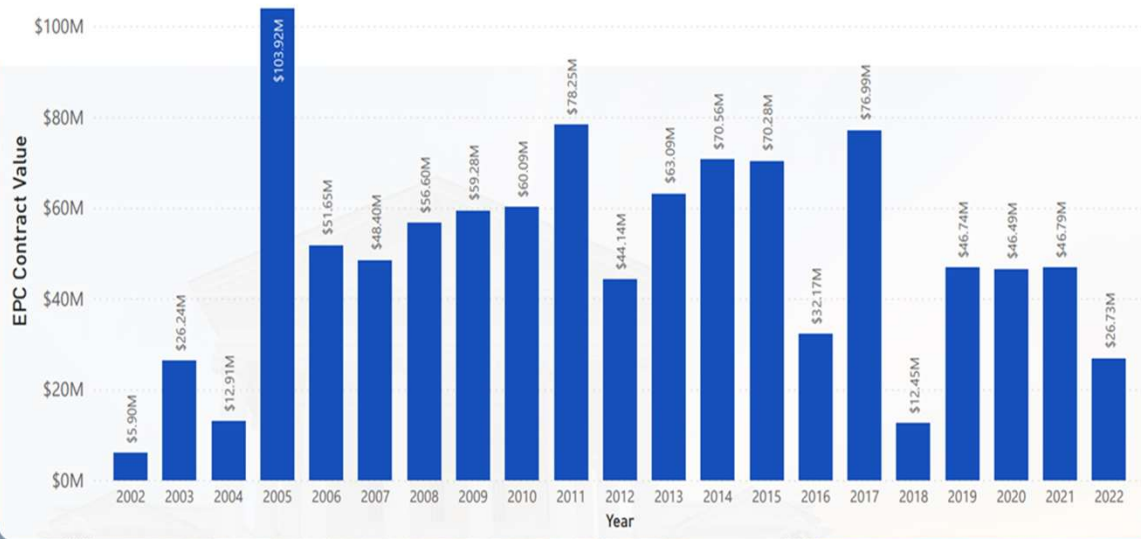
BEFORE	AFTER
	
<p><i>Windows in the before picture above look different from each other due to replacement one by one over the years. They are different colors/makes/models. There is dirt and/or moisture between the panes of glass on windows with failed seals.</i></p>	
	
<p><i>Picture on the left, taken during the winter, shows thermographic imaging results prior to the execution of the Performance Contract. All the reds and yellows indicate infrared heat loss. The one on the right shows imaging results after execution of the Performance Contract.</i></p>	
	
<p><i>Chillers shown on the left are quickly approaching the end of their useful life.</i></p>	



Virginia's ESPC Program

Program Established in 2002

Commonwealth of Virginia ESPC Contracts by Year



Over 280 Projects

Over \$1B in Project Investment



Energy Savings Performance Contracting
3 year Project History

2020

Total Contract Amount: **\$46.4M**

Projects:

- VDOT
- VA Beach Public Schools
- Prince William County Schools
- New River Valley Regional Jail
- Essex County
- Loudoun County Schools
- City of Emporia
- Bedford Regional Water Authority

2021

Total Contracts Amount: **\$42.9M**

Projects:

- VA Beach City Schools
- Charles City County Schools
- City of Virginia Beach
- Loudoun County Schools Phase II
- Pittsylvania County Schools Phase III
- Virginia Museum of Natural History
- Shenandoah County Schools
- Fairfax County

2022

Total Contracts Amount: **\$25.9M**

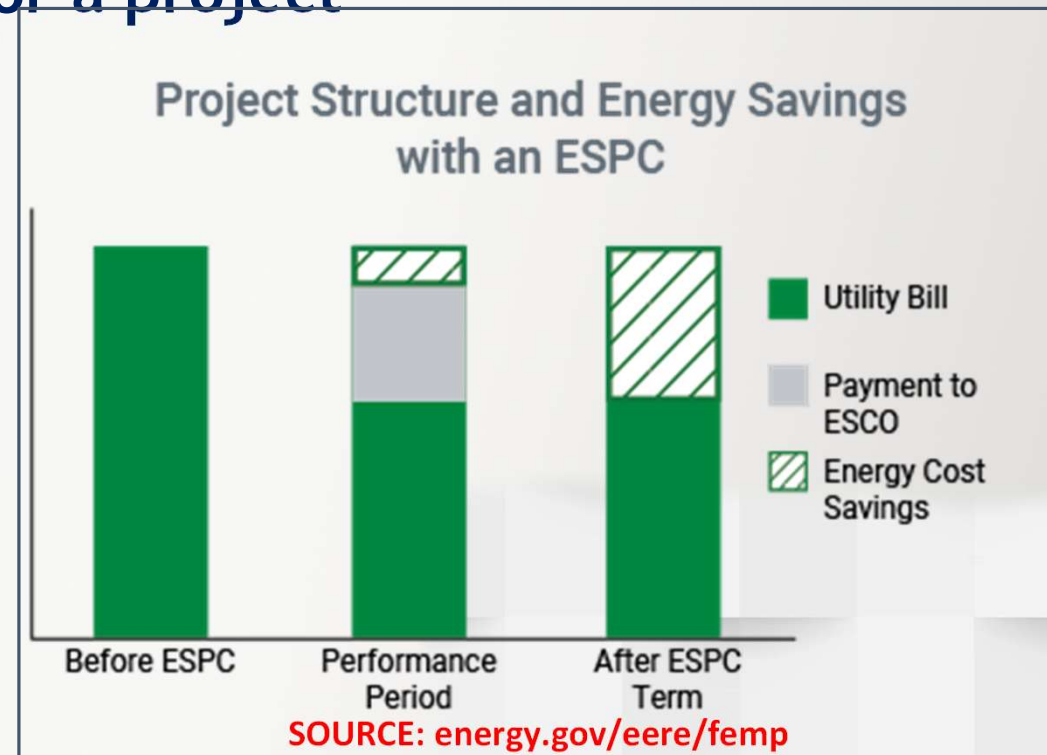
Projects:

- Northampton County Schools
- Northampton County
- Loudoun County Schools Phase III
- Fredericksburg City Schools
- Virginia Distribution Center



Financing ESPC Projects

- Remember: Avoided costs pay for the cost of the Project
- You may already be paying for a project
- Financing Options
 - Self Fund
 - Lease
 - Combination
- Allowed to “buy down”



ESPC Program Benefits

- Pre-qualified Vendor Pool/Process for Procurement
- All documents and templates provided by VA Energy
- Open Book Pricing
- Negotiated Overhead & Profit prior to contract signing
- **NO “LOW BID” Requirement**
- **NO CHANGE ORDERS**...unless customer initiated
- Preferred Equipment & Sub-contractor input
- Single contract that covers the entire scope of work at all included facilities
- Project Performance Guarantee
- VA Energy Solar Enhanced ESPC Program

VA Energy Support - Pre, During & Post Project Completion!





Virginia Energy &
Charles City County School Board Solar
Enhanced ESPC Project

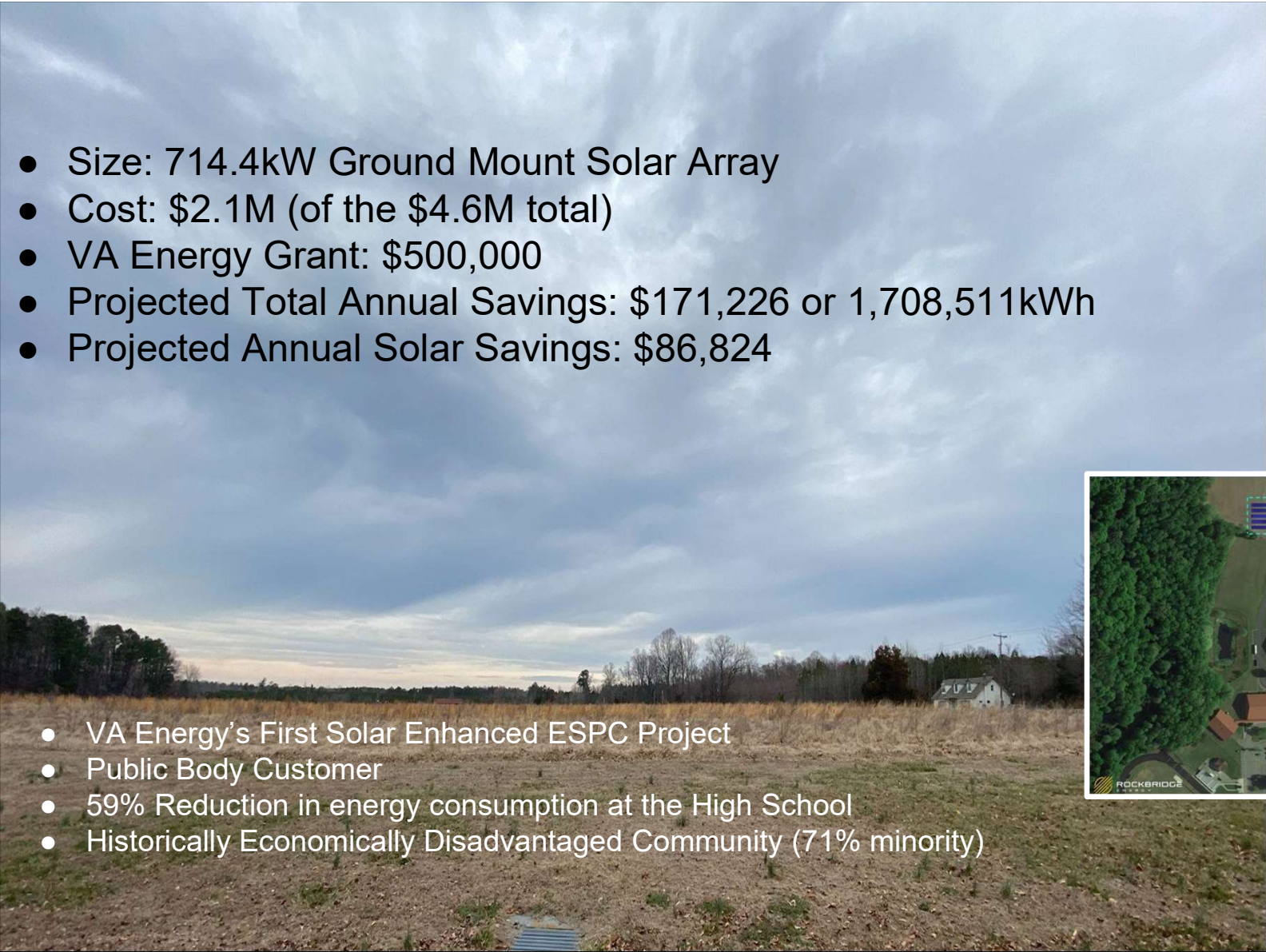
Charles City County High School

Energy Conservation Measures



- Building Controls
- HVAC
- Building Envelope
- Boilers
- Hot Water Upgrades
- Ground Mount Solar PV
- Lighting
- Wastewater Treatment
- Scoreboard Improvements
- Track Resurfacing

Total Project Cost: \$4.6M



- Size: 714.4kW Ground Mount Solar Array
- Cost: \$2.1M (of the \$4.6M total)
- VA Energy Grant: \$500,000
- Projected Total Annual Savings: \$171,226 or 1,708,511kWh
- Projected Annual Solar Savings: \$86,824



- VA Energy's First Solar Enhanced ESPC Project
- Public Body Customer
- 59% Reduction in energy consumption at the High School
- Historically Economically Disadvantaged Community (71% minority)

Questions

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