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U.S. DEPARTMENT OF ENERGY

Achieving Financial Independence: How to Create Sustainable Financing For Your Programs and Projects

Eleni Pelican
U.S. DOE

U.S. DEPARTMENT OF ENERGY

BETTER BUILDINGS SUMMIT

US DEPARTMENT OF ENERGY

May 27th, 2015

Commonwealth of Massachusetts

Achieving Financial Independence: Lessons on How to Create Sustainable Financing for your Programs and Projects

Division of Capital Asset Management and Maintenance

D·C·A·M·M

ACCELERATED ENERGY PROGRAM

COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

Presenter Information

Ryan Harold

Division of Capital Asset Management and Maintenance (DCAMM)

Energy Efficiency and Sustainability Group

The E-Team works to ensure that facilities attain practicable goals in sustainable design and construction and achieve optimal levels of energy and water efficiency for existing, renovated, and new buildings.

www.mass.gov/dcamm/energy

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ACCELERATED ENERGY PROGRAM
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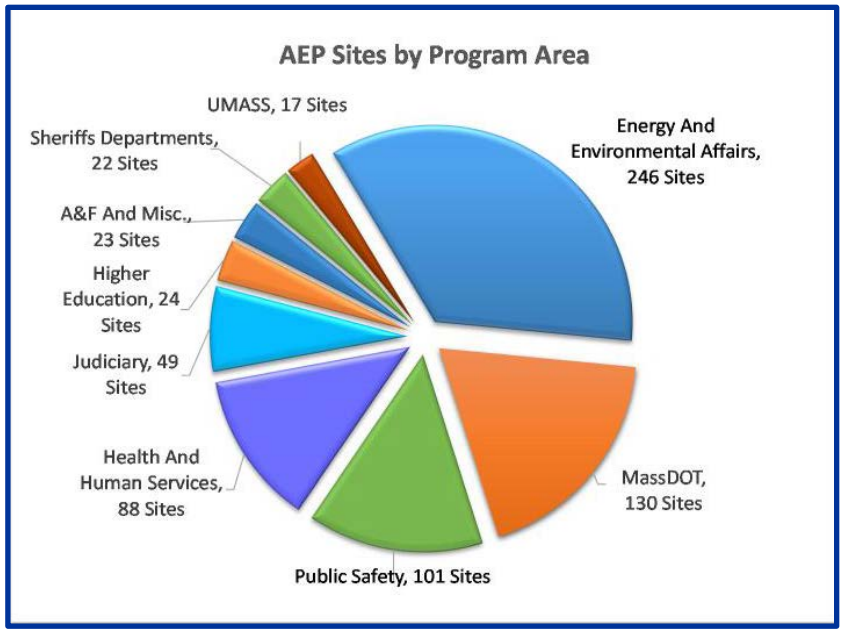
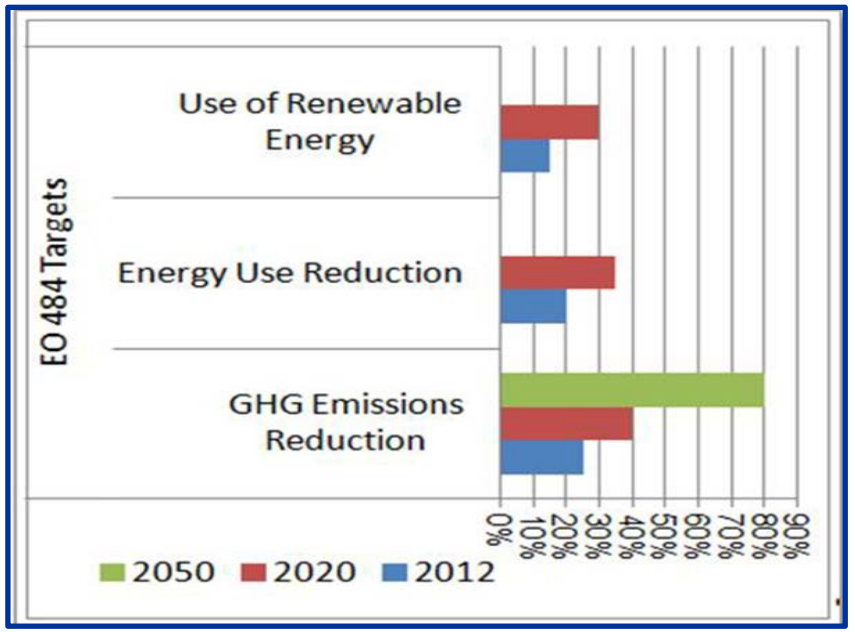
Accelerated Energy Program

- Launched in 2012 to accelerate the implementation of energy and water savings at 700 state facilities.
- Reduce energy consumption across state portfolio by 25%, projected savings of $43 million annually.
- Meet the goals of Executive Order 484.





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Sustainable Financing for Small/Medium Projects

Challenge:

Overcome the lack of a suitable and cost-effective financing mechanism for small-scale efficiency projects.

Facts

- Large portfolio of small/medium size projects, paybacks less 5 years.
- Current financial model for these projects are unsustainable
  - General Obligation (GO) Bonds
  - Clean Energy Investment Program
  - Operating or Capital Funds

Goals

- Target a large, but underserved portion of the state portfolio of small to medium size efficiency projects. (First round cost < $100,000)
- Create an enticing program for agencies to take on shorter term projects.
- Facilitate & accelerate the implementation of small/medium projects.
- Develop a sustainable source of funding.

Commonwealth Facility Fund for Energy Efficiency

- Green Revolving Loan Fund
- Summer 2014 – DOE Grant FOA Area of Interest 3
- Funded first projects May 2015 - $500,000 Seed money
- Low-cost financing mechanism for state agencies to fund energy/water conservation measures (ECMs)
- Economic and environmental benefits
- Affordable and sustainable source of efficiency funding that replenishes itself
- Debt servicing is repaid through savings
- Net benefit to the users bottom line

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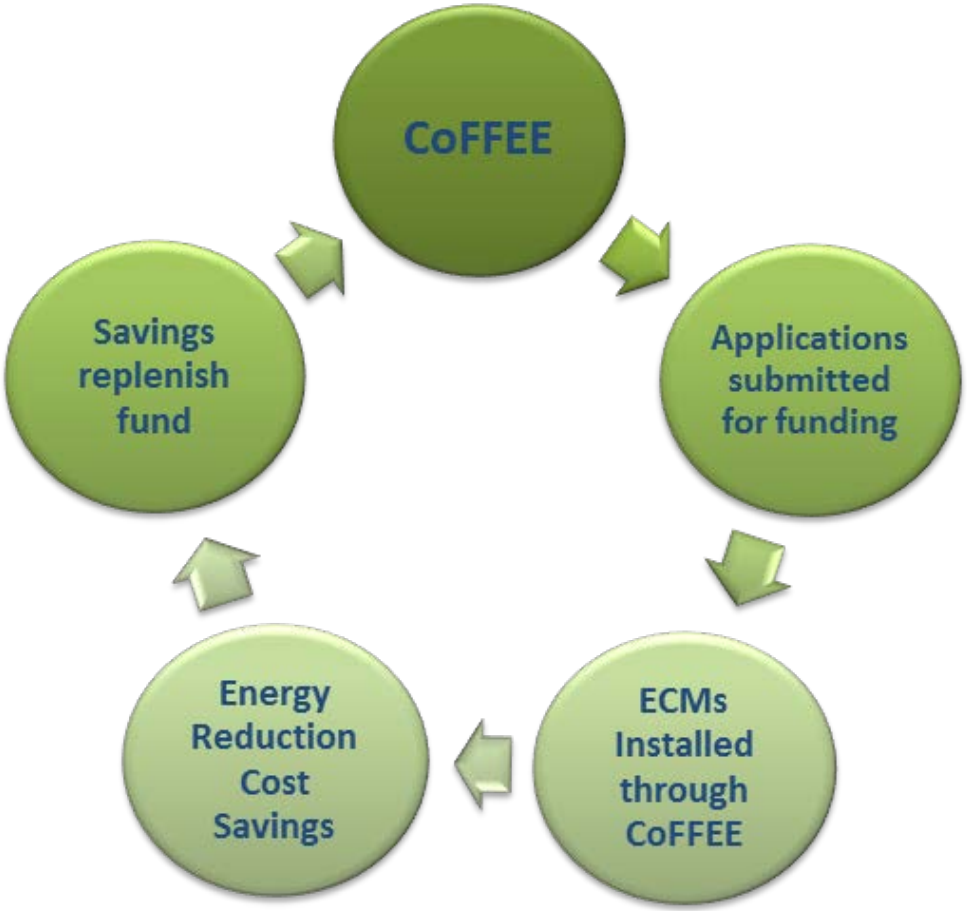
Fund Process:



CoFFEE Program vs 30yr GO Bonds

Motors with Variable Frequency Drives Upgrade Project

Total Cost: $93,378
Utility Incentive: $43,378
Financing needed: $50,000
Annual Savings: $25,550
Payback: 1.96 years

Financing Options	CoFFEE Program	30yr GO Bond
Net Project Cost	$50,000	$50,000
Debt Service (3.25%)	-	$26,989
CoFFEE Admin Fee 6%	$3,000	-
Total Cost	$53,000	$76,989

Savings to Massachusetts: ***$23,989***

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Program Strategy

Affordable	• Small administration fee to sustain management of the fund • Savings to exceed debt to ensure payment
Flexible	• Varied repayment terms based on specific project paybacks • Fosters energy and water efficiency and innovative projects
Sustainable	• Self-replenishing through savings • Reinvestment of the repayments in new efficiency projects
Accountable	• Reduce costs, utility usage and environmental impacts.

Challenges encountered on the way to sustainable financing:

- Promoting awareness
- Overcoming obstacles of existing financial models
- Balancing environmental, economic, and other benefits
- Growing the fund & sustainably financing new efficiency projects

Promotion and Outreach

Challenge: ***Promoting awareness of CoFFEE***

Simultaneous Goals:

(1) Maximize the inputs of the agencies in developing the program
(2) Promote the program in order for agencies to maximize the use of the fund

Implementation Plan	Key tasks
Solicit feedback from key stakeholders	Developed program resources
Provide access to information	Created a website
Raise awareness and excitement	Presented at agency events
Promote economic, environmental and non-energy benefits	Met with stakeholders
Provide open and transparent access	Conducted webinar

Financials

Challenge:

Overcoming obstacles of creating new financing mechanism

Flows of funds

- Sending out funds
- Receiving repayments
- Central fund for CoFFEE
- Repayment tracking, coding and accountability

Repayment Structure

- Evaluated performance risk
- Administrative costs
- Installment amounts
- Fund growth potential

Approach:

- Established financials mechanisms
- Solicit guidance from various finance departments
- Simplicity of repayment structure
- Balance interest in program with purchasing power
- Continuous evaluation

Repayment Schedule

Year	Levelized Utility Bill Savings	Installment	Installment as % of Levelized Utility Bill Savings	Net Cash Flow	Outstanding Balance
FY16	$0	$0		$0	$42,228
FY17	$24,430	$20,765.68	85%	$3,665	$21,462
FY18	$24,430	$20,765.68	85%	$3,665	$697
FY19	$24,430	$3,231	13%	$21,199	Fee ($2,534)
FY20	$24,430	$0	0%	$24,430	
FY21	$24,430	$0	0%	$24,430	
FY22	$24,430	$0	0%	$24,430	
FY23	$24,430	$0	0%	$24,430	
FY24	$24,430	$0	0%	$24,430	
FY25	$24,430	$0	0%	$24,430	
FY26	$24,430	$0	0%	$24,430	
TOTAL	**$244,302**	**$44,762**		**$199,540**	

Project Selection Criteria and Scoring Metrics

Challenge:

Balancing environmental, economic, and other benefits of CoFFEE

Criteria	Description	Weight
Payback Period	Time it takes saving to cover project costs	35%
Total Resource Benefit	Monetary value of energy savings	20%
Confidence/Timing	Feasibility and likelihood of success	20%
Non-energy Benefits	Reduced lifecycle costs, productivity benefits, improve aesthetics	15%
Education Value & Innovation	Project exposure, education benefits innovative measures	10%

Growing the Fund & Long Term Sustainability

Challenge:

Growing the fund and sustainably financing additional efficiency projects

Justification for infusions of capital

- Prove program is practical
- Show demand for efficiency projects is growing
- Provide quantifiable data to measure performance
- New sources of capital

Long-term sustainability

- Make changes based on best practices & lessons learned
- Develop marketing & 5 year strategy
- Evaluate funding levels
- Streamline program operations, facility coordination, M&V
- Continuous improvement

Lessons learned:

- Establish a multi-talented project team.
- Outreach to established programs.
- Leverage existing resources.
- Provide a clear and concise message.

Establish a multi-talented Project team

CoFFEE Team is involved in:

- Program developments/planning
- Providing insight/guidance
- Helping foster connections between agencies and organizations
- Promoting and facilitating best practices
- Select CoFFEE projects

Representatives:

- Department of Energy Resources (DOER)
- DCAMM
- Office of the Trial Courts
- Department of Environmental Protection
- Mass Facilities Management Association (MAFMA)
- Advisor/Consultant – Navigant

Key takeaway:

Leverage individual skills and experience to prioritize goals and identify potential problems before they become issues

Outreach to Established Programs

Researched programs:

- Texas LoanSTAR Revolving Loan Program
- Utah State Facility Energy Efficiency Fund
- Harvard University
- Kentucky Green Bank
- Maryland State Agency Loan Program(SALP)
- Alabama Local Government Energy Loan Program
- Sustainable Endowment Institutes

Key takeaways:

- Programs differed based on individual policy objectives, size of the fund, geographic, diversity always helpful in shaping our program
- Avoid charging interest in the beginning

SECO State Energy Conservation Office

Department of Administrative Services

HARVARD UNIVERSITY Sustainability

MARYLAND ADECA building better alabama communities Alabama Department of Economic and Community Affairs

SUSTAINABLE ENDOWMENTS INSTITUTE

ACCELERATED ENERGY PROGRAM COMMONWEALTH COMMITMENT TO A CLEAN ENERGY FUTURE

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Leverage Existing Resources

- Events
- E-mail Listserv
- Newsletters
- Statewide stakeholder meetings
- Existing documents and processes
- Contractor network

Accelerated Energy Program Newsletter
June - July 2014

PROGRAM UPDATES:

Western Massachusetts energy projects celebrated in Pittsfield

DCAMM trains future energy professionals through state internship program

Innovative funding solution in development for energy projects

AEP Newsletter

Key Takeaway: Agencies are very willing to assist program efforts with their existing resources very willing to support the effort and use already established resources

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Clear and Concise Message

Articulate how the financing program aligns of the with the vision and mission of the audience, in a clear and concise manner.

Examples

- **Finance Manager**
  - Utility cost reduction, repayment allows for a net savings for the agency
- **Building Occupants**
  - Productivity benefits, improve aesthetics such as lighting quality, more ventilation and balanced air temperatures
- **Facility Staff**
  - Reduce maintenance cost & leverage additional funds for innovative projects

Audiences

- Commonwealth Agencies
- DCAMM
- Utility Companies
- Utility Vendors
- Facility Staff
- Finance Managers
- Building Occupants
- Public

CoFFEE First Round Highlights

ECM examples: LED lighting, Motors with VFDs, High Efficiency transformers & Occupancy Sensors

Total Investment 4 Projects	$244,433
Total Incentives	$129,550
Estimated Savings over Useful Life of Measure	$992,183
First Year Saving Cost Savings	$74,196
Avoided Finance Charges	$58,216
GHG Emissions Saved	279 tonnes CO_2
Simple Payback	1.64 years
Savings to Investment Ratio	8.1

What is the next big thing ?

Transformation of energy and water efficiency upgrades as investment opportunities rather than expenses through Green Revolving Funds, and similar financial mechanisms

Thank you!

Questions or Feedback?

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Arlington Initiative to Rethink Energy

AIRE

Funding Local Climate Action

John Morrill, Energy Manager
jmorrill@arlingtonva.us

Better Buildings Summit, May 27–29, 2015
Washington DC

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Arlington, Virginia

Population ~ 215,000 www.arlingtonenergy.us

26 sq mi – Pentagon, DCA, National Cemetery, 11 subway stations

Arlington, Virginia

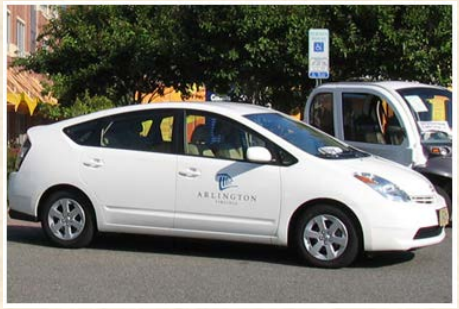
Arlington, Virginia

- AIRE launched as a *Chairman's Initiative* January 1, 2007

  - 10 percent GHG emission reduction by 2012, from 2000 baseline, from government operations
  - Outreach to residents and business sector
  - Revise policies, do a community climate action plan, etc.

- Unfunded at the outset – 'other duties as assigned'

- <u>Immediate and strong</u> public support and media coverage



Funding the Arlington Initiative to Rethink Energy

Initial execution and strong public support, plus media coverage, supported institutionalizing the program.

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How? A new residential utility tax.

Funding the Arlington Initiative to Rethink Energy

Initial execution and strong public support, plus media coverage, supported institutionalizing the program.

Policy by the Board established this as a 'dedicated fund' for environmental sustainability programming.

- Characterized as a "once in a lifetime" opportunity of this sort.
- Clear nexus between the tax and the public benefit to result.
- Concerns over regressivity had prevented earlier levy.

Funding the Arlington Initiative to Rethink Energy

Local residential utility taxes in select Northern Virginia localities, Fiscal 2007.

	Electricity				Natural Gas			
Jurisdiction	Rate/kWh	Monthly Min.	Monthly Max.	kWh @max	Rate/therm	Monthly Min.	Monthly Max.	therms @ max
ARLINGTON	0	0	0	0	0	0	0	0
Alexandria	$ 0.012075	$ 1.12	$ 3.00	156	$ 0.124444	$ 1.28	$ 3.00	14
Fairfax County	$ 0.006050	$ 0.56	$ 4.00	569	$ 0.052590	$ 0.56	$ 4.00	65
Fairfax City	$ 0.011360	$ 1.05	$ 2.25	106	$ 0.057090	$ 1.05	$ 2.25	21
Loudoun County	$ 0.006804	$ 0.63	$ 2.70	304	$ 0.064850	$ 0.63	$ 2.70	32
Falls Church	$ 0.007575	$ 0.70	$ 5.00	568	$ 0.003900	$ 0.70	$ 5.00	1,103

State law in 2000 capped monthly maximum at $3 per account; 2 jurisdictions grandfathered in at higher max.

Funding the Arlington Initiative to Rethink Energy

Local residential utility taxes in select Northern Virginia localities, Fiscal 2008 - today

	Electricity				Natural Gas			
Jurisdiction	Rate/kWh	Monthly Min.	Monthly Max.	kWh @max	Rate/therm	Monthly Min.	Monthly Max.	therms @ max
ARLINGTON	**$ 0.003410**	**$0**	**$ 3.00**	**1,280**	**$ 0.030000**	**$ 0**	**$ 3.00**	**120**
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Arlington placed exemptions on initial consumption to further reduce regressivity of the tax.

Funding the Arlington Initiative to Rethink Energy

- Budget estimate was $1.6 million/year
- 4 new FTEs
- Residential and business outreach programs
- Investments in County facilities and operations to reduce energy use

Funding the Arlington Initiative to Rethink Energy

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- 4 new FTEs
- Residential and business outreach programs
- Investments in County facilities and operations to reduce energy use

➢ *Boosted capacity to complete community energy plan.*

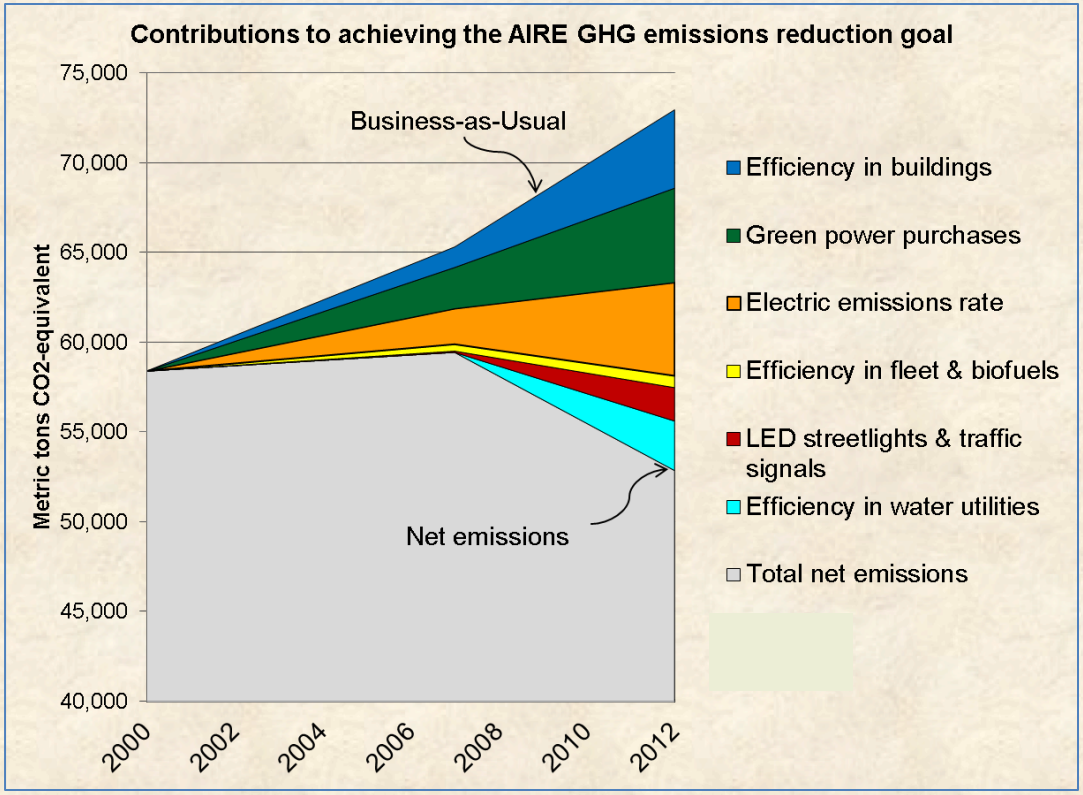
➢ *Arlington was well positioned for ARRA EECBG funding*

Funding the Arlington Initiative to Rethink Energy

These tax rates have generated $1.5 - $1.8 million in revenue each year. These funds enabled accomplishment of AIRE goals.

10 percent GHG emissions target exceeded (11.7%)

County energy bill $1 million/year lower thanks to AIRE investments.



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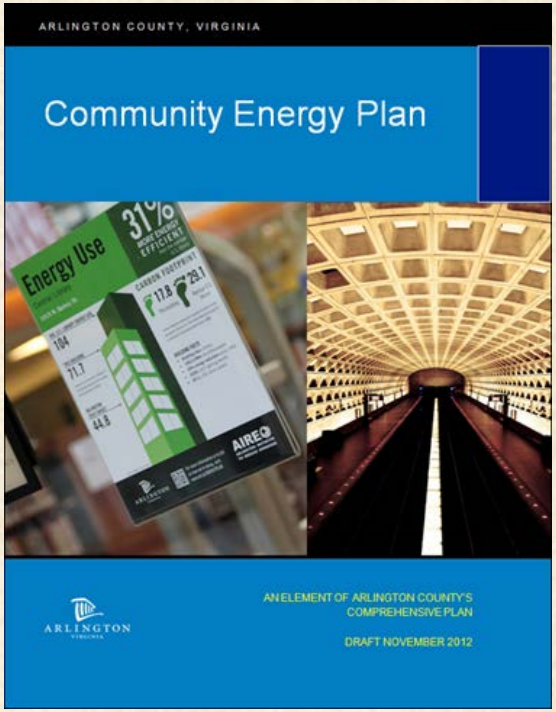

A Community Energy Plan was adopted as an Element of the Comprehensive Plan in 2013

Headline goal: 75% reduction in GHG from community by 2050, with energy resilience and economic competitive elements.

Onward

- Program funding threatened in recent years:
  - Dedicated funding streams reduce County-wide budgeting flexibility
  - Some question relevance of program after 8 years; elected sponsors retire & priorities evolve in community
- Yet, Community Energy Plan set ambitious long-term goals, and implementation suggests need to *increase* funding
- This spring's budget discussions led to a Board request for review and analysis of miscellaneous tax rates and user fees (this summer). That presents an opportunity.

Onward

Arlington's residential utility tax rate remains well below neighbors. An increase in tax *rates* would have minimal impact to individual households (thanks to monthly cap), but still generate add'l large $.

	Electricity				Natural Gas			
Jurisdiction	Rate/kWh	Monthly Min.	Monthly Max.	kWh @max	Rate/therm	Monthly Min.	Monthly Max.	therms @ max
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Thank you

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2015 Better Buildings Summit

Sustainable financing

Fee for Service

KANSAS ENERGY OFFICE FACILITY CONSERVATION IMPROVEMENT PROGRAM

Terry Steuber, CEM, CMVP

Manager of Commercial & Industrial Programs

Kansas Corporation Commission, Energy Division

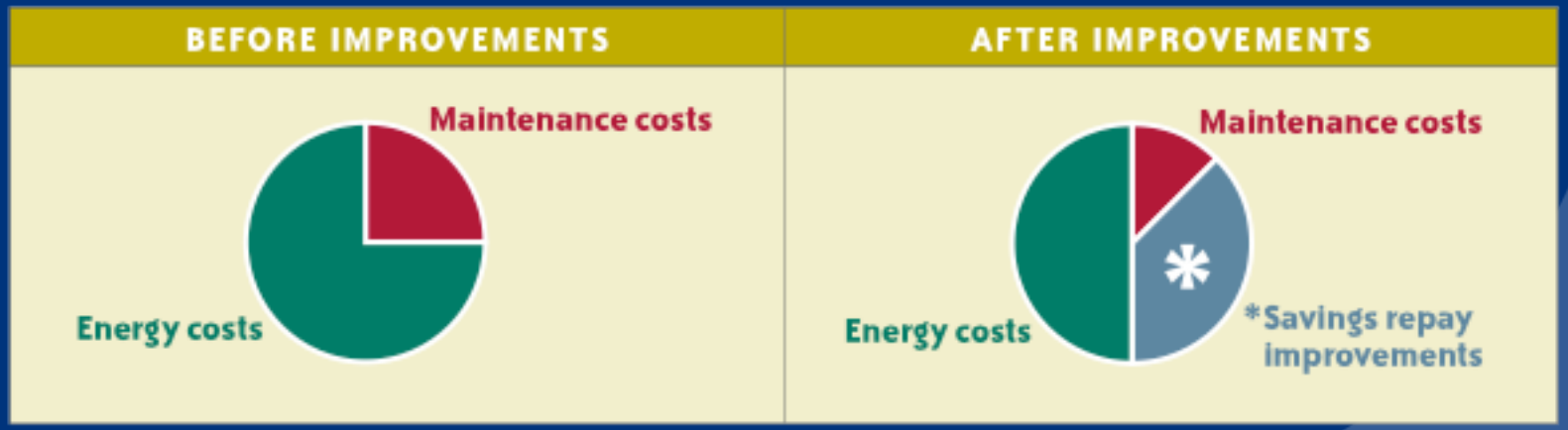
Kansas Corporation Commission

What is the FCIP?

- State program that promotes and facilitates energy-saving projects in public buildings.
  - Established in 2000 (KSA 75-37,125)
- Uses innovative process called Energy Savings Performance Contracting (ESPC).
- Experienced FCIP staff provides oversight and advocates for customer throughout process.

Energy Savings Performance Contracting (ESPC)

- Procurement strategy to make necessary public facility improvements with no upfront capital.
- All costs covered by energy and O&M savings.
- ESPC provided by an Energy Service Company (ESCO).



ESPC & Role of ESCOs

- Energy Service Companies (ESCOs) will …
  - identify and evaluate energy use & energy-savings opportunities,
  - develop engineering design & specifications,
  - manage project from design through implementation
  - train staff,
  - guarantee project cost, performance, & savings.
- ESCOs can help arrange financing.

ESPC Benefits

- Project can be budget neutral.
- Turn-key service, from design through construction.
- Design involves comprehensive, customized improvements and upgrades.
- Customers have input regarding choice of equipment and contractors.
- Energy & operational savings can be guaranteed.

ESPC Benefits *with* FCIP

- Streamlined process: standard, simplified contracts & pre-approved ESCOs.
- NO RFPs are required.
- Life-cycle costs can be considered, resulting in higher-quality/efficiency equipment than standard “low-bid” procurement.
- NO change orders by ESCO.
- Oversight from concept through completion:
  - FCIP staff have earned Certified Energy Manager (CEM) and Certified Measurement & Verification Professional (CMVP) designations from the Association of Energy Engineers.

FCIP Staff Oversight

- FCIP staff assist Customers from concept through completion… and beyond.
- FCIP staff reviews all audits, proposals, contract documents, and M&V reports.
- FCIP staff's ESPC experience & background in government contracting, facility management minimizes Customer headaches and surprises.
- Staff's oversight streamlines the process & allows Customers to focus on results.

Eligible FCIP Improvements

- **Lighting:** day-lighting, new lamps & ballasts, exterior lighting retrofits
- **Heating:** replace boilers, steam traps, pumps, fans
- **Cooling:** replace chillers, cooling towers, motors
- **Controls:** new Energy Management Systems, occupancy sensors
- **Water:** low-flow fixtures, water treatment facilities, meter replacement
- **Building Shell:** Insulation, windows, roofs
- **Alternative Energy** Wind, solar, geothermal
- **And more …**

FCIP Process: 4 Main Steps

1. **Preliminary Energy Audit** determines if savings are available.
2. **Investment Grade Audit** identifies and quantifies savings/improvements.
3. **Energy Performance Contract** is the agreement for implementation of improvements and expected savings.
4. **Measurement & Verification** occurs after project completion when energy and operational cost savings are measured; may involve receipt of a “shortfall” check for unrealized savings.

Cost of FCIP Participation

- FCIP is funded through customer fees.
- Fees range from 4% on the smallest project to just over 0.5% on very large projects.
  - $1.5 million project = $31,000 in fees (~ 2% of total)
- Remember, the fee is payable *only* if customer signs a performance contract.

FCIP Metrics

- Number of projects (since 2003) = 88
- Dollar amount of projects = $288,611,714
- Annual savings from projects = $ 20,378,614
- FCIP fees from projects = $ 2,851,399

Why “Fee for Service”?

- Provides a direct source of funding.
- Only those who use the program pay for the program.
- Can be financed with the rest of the project.
- Fees can be used to match SEP funds.

Obstacles to “Fee for Service”

- Required legislative authorization.
- Needs initial funding source.
- Program must “earn its keep”.
- Cash flow considerations.

Thoughts about “Fee for Service”

- Legislation creates some “permanence” for your program.
- Gives you control of your budget.
- Changes with the market.
- Serves your client.

Where do we need to go?

- Find ways to serve the smaller clients, and rural areas.

FCIP

The FCIP team is dedicated to providing customers with the expertise and oversight needed to confidently implement energy-saving retrofits in public buildings in an environmentally responsible way.

Questions? Contact FCIP

Terry Steuber, CEM, CMVP

Kansas Corporation Commission, Energy Division

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Kansas Corporation Commission