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

Eleni Pelican
U.S. DOE
Achieving Financial Independence: Lessons on How to Create Sustainable Financing for your Programs and Projects
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/dcammm/energy
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.
**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
Commonwealth Facility Fund for Energy Efficiency

Fund Process:

CoFFEE

Savings replenish fund

Applications submitted for funding

Energy Reduction Cost Savings

ECMs Installed through CoFFEE
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

<table>
<thead>
<tr>
<th>Financing Options</th>
<th>CoFFEE Program</th>
<th>30yr GO Bond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net Project Cost</td>
<td>$50,000</td>
<td>$50,000</td>
</tr>
<tr>
<td>Debt Service (3.25%)</td>
<td>-</td>
<td>$26,989</td>
</tr>
<tr>
<td>CoFFEE Admin Fee 6%</td>
<td>$3,000</td>
<td>-</td>
</tr>
<tr>
<td>Total Cost</td>
<td>$53,000</td>
<td>$76,989</td>
</tr>
</tbody>
</table>

Savings to Massachusetts: $23,989
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**
- Solicit feedback from key stakeholders
- Provide access to information
- Raise awareness and excitement
- Promote economic, environmental and non-energy benefits
- Provide open and transparent access

**Key tasks**
- Developed program resources
- Created a website
- Presented at agency events
- Met with stakeholders
- 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

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

*Balancing environmental, economic, and other benefits of CoFFEE*

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Payback Period</td>
<td>Time it takes saving to cover project costs</td>
<td>35%</td>
</tr>
<tr>
<td>Total Resource Benefit</td>
<td>Monetary value of energy savings</td>
<td>20%</td>
</tr>
<tr>
<td>Confidence/Timing</td>
<td>Feasibility and likelihood of success</td>
<td>20%</td>
</tr>
<tr>
<td>Non-energy Benefits</td>
<td>Reduced lifecycle costs, productivity benefits, improve aesthetics</td>
<td>15%</td>
</tr>
<tr>
<td>Education Value &amp; Innovation</td>
<td>Project exposure, education benefits innovative measures</td>
<td>10%</td>
</tr>
</tbody>
</table>
### 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
Leverage Existing Resources

**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.
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

<table>
<thead>
<tr>
<th>Total Investment 4 Projects</th>
<th>$244,433</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Incentives</td>
<td>$129,550</td>
</tr>
<tr>
<td>Estimated Savings over Useful Life of Measure</td>
<td>$992,183</td>
</tr>
<tr>
<td>First Year Saving Cost Savings</td>
<td>$74,196</td>
</tr>
<tr>
<td>Avoided Finance Charges</td>
<td>$58,216</td>
</tr>
<tr>
<td>GHG Emissions Saved</td>
<td>279 tonnes CO₂</td>
</tr>
<tr>
<td>Simple Payback</td>
<td>1.64 years</td>
</tr>
<tr>
<td>Savings to Investment Ratio</td>
<td>8.1</td>
</tr>
</tbody>
</table>
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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www.mass.gov/dcamm/coffee
Funding Local Climate Action

John Morrill, Energy Manager
jmorrill@arlingtonva.us

Washington DC
Arlington, Virginia

Population ~ 215,000
26 sq mi – Pentagon, DCA, National Cemetery, 11 subway stations

www.arlingtonenergy.us
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’

• **Immediate and strong** 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.
Funding the Arlington Initiative to Rethink Energy

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

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.

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Electricity</th>
<th>Natural Gas</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rate/kWh</td>
<td>Monthly Min.</td>
</tr>
<tr>
<td>ARLINGTON</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Alexandria</td>
<td>$ 0.012075</td>
<td>$ 1.12</td>
</tr>
<tr>
<td>Fairfax County</td>
<td>$ 0.006050</td>
<td>$ 0.56</td>
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<tr>
<td>Fairfax City</td>
<td>$ 0.011360</td>
<td>$ 1.05</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>$ 0.006804</td>
<td>$ 0.63</td>
</tr>
<tr>
<td>Falls Church</td>
<td>$ 0.007575</td>
<td>$ 0.70</td>
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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

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<tr>
<td>Arlington</td>
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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

• 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

  ➢ 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.
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.

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 $.

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Thank you

John Morrill –
jmorrill@arlingtonva.us

www.arlingtonenergy.us
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
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.
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
(785) 271-3352 / t.steuber@kcc.ks.gov