Paying for Energy Efficiency at your Government: Finance Tools

Glenn Barnes
UNC Environmental Finance Center
Session Objectives

- Learn about financing options for government energy projects
- Look at examples from around the state and country
- Find out how you finance energy projects
Lots of Projects...
But How To Pay For Them?

“This part of the plan will be funded with all the unused money we must have laying around someplace.”
One Option

• Cash
  – Current tax revenues
  – Fund balance
  – Capital Reserve Funds

• Anyone’s government a little short on cash these days?
Wilmington Street Sweeper Facility

- Includes solar PV, solar thermal, natural lighting building orientation

- Expected electric bills were $23,000 annually; actual are $1,500

- ~8 year payback
Creative Finance Options

- Guaranteed Energy Savings Contracts
- Third Party Ownership
- Qualified Energy Conservation Bonds
- Internal Revolving Energy Funds
Guaranteed Energy Savings Contracts
What is a Guaranteed Energy Savings Contract?

✓ Contract for the evaluation, recommendation, or implementation of energy conservation measures
✓ Payments made over time
✓ Energy savings guaranteed to exceed costs
• G.S. 143-64.17(3)
Guaranteed Energy Savings Contracts

- ESCO designs and proposes a package of energy cost reduction measures, installs or implements those cost reduction measures, and guarantees the savings of the cost reductions
- Issuer pays for the package over time using the stream of revenue provided by the energy reduction measures
- Third party monitoring and verification

Source: Len Hoey, State Energy Office
Performance Contracting Advantages

• A Design-Build process with a single point of responsibility
• Provides capital
• Provides engineering and project management expertise
• Guaranteed performance/savings

Source: Len Hoey, State Energy Office
How To Identify a Project

• Building energy costs greater than $1.50/sq ft
• Annual utility costs greater than $300,000
• 100,000 sq ft or greater
• Building use and occupancy stable
• No significant renovations or additions planned
• In NC contracts have ranged from $400,000 to $22,000,000

Source: Len Hoey, State Energy Office
LGC Perspective

- LGC cares if guaranteed savings match debt payments and cares how good the guarantee terms are
  
  - LGC does **not** evaluate whether the proposed measures will save money
  
  - LGC considers the “energy escalation factor”—how much you claim energy rates will raise during term of contract
<table>
<thead>
<tr>
<th>Agency</th>
<th>Estimated Project $</th>
<th>Actual Project $</th>
<th>Project Status</th>
<th>Vendor</th>
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<tr>
<td>DOA Museum of Art</td>
<td>$4,966,763</td>
<td>Fourth guarantee year complete</td>
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<td>Trane</td>
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<td>DOA downtown complex</td>
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<td>Pepco</td>
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<td>Con Ed</td>
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<td>UNC Asheville</td>
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<td></td>
<td>Ameresco</td>
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<tr>
<td>UNC Charlotte</td>
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<td>Department of Transportation</td>
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<td>East Carolina University</td>
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<td>UNC Chapel Hill</td>
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<td>Fayetteville State University</td>
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<td>Sub-Totals</td>
<td>$68,738,122</td>
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<td>Total potential investment</td>
<td>$213,550,508</td>
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IGA = Investment Grade Audit  
ESA = Energy Services Agreement
State Energy Office Resources


- Len Hoey
  N.C. Energy Office Engineering Manager
  lhoey@nccommerce.com
  (919) 733-1891
DOE Resources

Third Party
Ownership of Assets
Using Third Party Ownership to Capture Tax Credits

- Governments not eligible for tax credits
- Third party installs and owns renewable generator, then transfers to government after tax credit period over
Commissioners approve solar farm project

By: MIKE CONLEY | McDowell News
Published: December 13, 2011

After holding a 30-minute closed session, the McDowell County Commissioners agreed Monday to lease some county-owned property for a solar farm.

After the session, the commissioners voted unanimously to issue a non-binding letter of intent to lease some county-owned property to N.C. Renewable Energy, LLC.

“It's a new company.” County Manager Chuck Abernathy said on Tuesday. “It's probably been formed for a few months.”

The planned solar farm could create 12 new jobs, said the county’s economic development director.

The energy generated by the solar farm would be sold.

They needed to approve the letter of intent by Saturday.

The site of solar panels that take the light of the sun

The site is still being negotiated.
Other McDowell County Projects:
Solar Hot Water

- Schools
  - McDowell High School, East McDowell Junior High and Marion Elementary School

- Prisons
  - Law Enforcement Center in Marion

- Community Buildings
  - Senior Center in Marion
Mecklenburg County Projects

• Solar PV at Libraries
  – Beatties Ford and Hickory Branch Libraries in Charlotte

• Solar Hot Water at Schools
  – J.V. Washam Elementary School in Cornelius
Greenville County, SC

- Methane Gas Recovery at public landfill

Knoxville, TN

- Solar PV on Knoxville Convention Center
Qualified Energy Conservation Bonds (QECBs)
QECB = Low-Cost Capital

• Qualified Energy Conservation Bond

• 1%-5% effective interest rate for issuer
  • Issuer gets 3%-4% subsidy from Treasury
  • 15 to 20-year term

• Qualified projects are broadly defined
QECBs

• Total national allocation is $3.2 billion

• States receive a portion of that allocation based on their percentage of the total US population
Large Local Governments

• Large local governments are defined as cities with populations of 100,000 or counties with populations of 100,000 (minus any city above 100,000)

• Get an automatic allocation based on their percentage of state’s population
The State and Small Local Governments

• Whatever allocation is not used by large local governments is controlled by the state
• Can be used for state projects
• Can be distributed to smaller local governments
Primary Eligible Projects

• Capital expenditures incurred for purposes of--
  (i) reducing energy consumption in publicly-owned buildings by at least 20 percent,
  (ii) implementing green community programs (including the use of loans, grants, or other repayment mechanisms to implement such programs),
  (iii) rural development involving the production of electricity from renewable energy resources

Source: 26 USC § 54D
Other Eligible Projects

- Certain research facilities and research grants
- Mass commuting facilities
- Demonstration projects
- Public education campaigns
National QECB Use by 1/30/12

- Blue: QECBs Issued for Energy Efficiency Projects (56%)
- Red: QECBs Issued for Renewable Energy Projects (42%)
- Green: QECBs Issued for Green Community Programs (2%)
Our Regional Use

<table>
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<tr>
<th>State</th>
<th>Allocation</th>
<th>% Used</th>
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<tr>
<td>North Carolina</td>
<td>$95,667,000</td>
<td>0%</td>
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<tr>
<td>South Carolina</td>
<td>$46,475,000</td>
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</tr>
<tr>
<td>Tennessee</td>
<td>$64,476,000</td>
<td>0%</td>
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</table>

- Contact your State Energy Office if you are interested
Key Links

- EPC Memo: [http://naseo.org/resources/financing/qecb/EPC_Memo.pdf](http://naseo.org/resources/financing/qecb/EPC_Memo.pdf)
- Treasury Direct: [https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm](https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm)
Internal Revolving Energy Funds
How a revolving energy fund works

• Capitalized as a “bank” from which departments and divisions can borrow to fund energy efficiency, renewable energy or energy conservation projects.

• Allows municipalities to provide a continual stream of funds for energy efficiency improvements without tapping into existing capital cycles.
Figure 1: Revolving Energy Fund

- Seed Funding
- Percentage of Savings Reinvested
- New Energy Reduction Project Funded
- Energy Reduction Project Implemented
- Energy Savings Identified
- Energy Savings Results Monitored

Source: Ann Arbor Energy Fund
Choosing Projects

- Based on audits of government facilities or other pre-determined criteria
- Energy efficiency tied to other capital improvements
- Applications from departments
- “Spreading the wealth”
How the Money Is Handled

• Issues to consider
  – It may depend on your government’s internal policies and/or how your energy bills are paid
  – A clear, consistent policy is key for the long-term success of the revolving fund
How the Money is Handled

- Ways for the money to be handled
  - Within your finance office
  - Each department repays the fund
  - The budget includes a certain amount of money to be re-appropriated into the fund each year
Repayment Methods

• Actual Savings
• Estimated Savings (Defined repayment schedule)
• Upfront Agreements
• Determining Loan Terms
M&V of Projects

• From a finance and management perspective, the issue is how to determine repayments into the fund
  – Actual savings
  – Estimated savings

• If repayments are tied to actual savings (note: actual energy savings ≠ actual dollar savings), you need a pre-determined M&V system

• If repayments are on a fixed schedule based on estimated savings, M&V is not relevant for repayments
Establishment: Seed money

- Appropriating funds
- Maintaining an expired budget line item
- Capitalizing on existing energy savings and other cost reductions
- Cost reductions from competitive bidding
- Private foundations and grants
- Bonds
Fund maintenance

- Avoided costs and
  - Interest from borrowers
  - Appropriated funds
  - Renewable energy credits/Green tags
  - Energy sales
Chapel Hill’s Energy Bank

- Established: 2006
- Seed money amount: $500,000
- Seed money source: Bond
- Fund maintenance: 100% of energy savings
Established: 2010
Seed money amount: $1,000,000
Seed money source: EECBG
Fund maintenance:
  • 100% of energy savings during payback period plus one year
  • Assigning federal tax benefits to design companies
  • Generate and sell RECs
Quick Thought on Grants

- This presentation is about *sustainable* program finance

- Grants are not sustainable finance
I Say This A Lot

“Grants are not sustainable finance”
Really, I Say This A Lot

Grants are not sustainable finance,” said Glenn Barnes
Really, A Lot

Here Lies
GLENN BARNES
Husband, Father,
Springsteen Fan

“Grants are not sustainable finance”
Questions?