DOE Technical Assistance Program

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

The Parker Ranch installation in Hawaii

Qualified Energy Conservation Bonds (QECBS): Updates From the Field

Mark Zimring, Lawrence Berkeley National Laboratory

March 28, 2011

What is TAP?

DOE's Technical Assistance Program (TAP) supports the Energy Efficiency and Conservation Block Grant Program (EECBG) and the State Energy Program (SEP) by providing state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs.

How Can TAP Help You?

TAP offers:

- One-on-one assistance
- Extensive online resource library, including:
  - Webinars
  - Events calendar
  - TAP Blog
  - Best practices and project resources
- Facilitation of peer exchange

On topics including:

- Energy efficiency and renewable energy technologies
- Program design and implementation
- Financing
- Performance contracting
- State and local capacity building

The TAP Blog

Access the TAP Blog!
http://www.eereblogs.energy.gov/tap/

Provides a platform for state, local, and tribal government officials and DOE's network of technical and programmatic experts to connect and share best practices on a variety of topics.

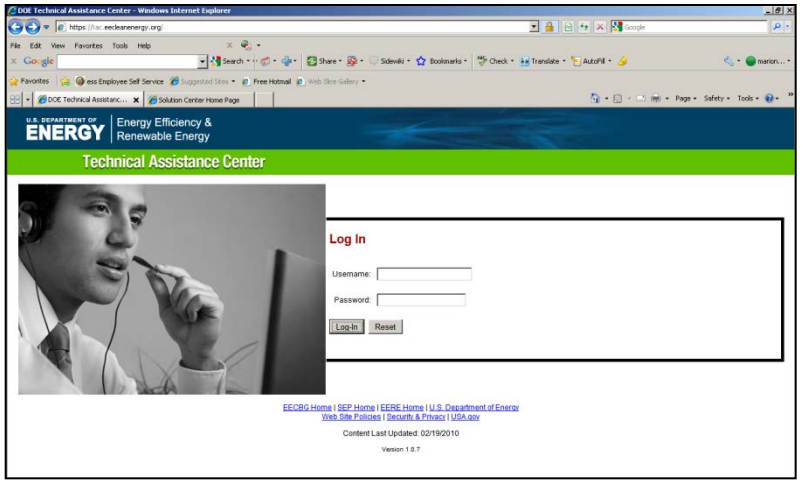
Accessing TAP Resources

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

We encourage you to:

1) Explore our online resources via the Solution Center

2) Submit a request via the Technical Assistance Center



3) Ask questions via our call center at 1-877-337-3827 or email us at solutioncenter@ee.doe.gov

Upcoming Webinars

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Please join us again:

Title: **Developing an Evaluation, Measurement, and Verification Plan: Residential Retrofits**
Host: **Julie Michals, Northeast Energy Efficiency Partnerships**
Date: March 29, 2011
Time: 2:00-3:00 EDT

Title: **Basic Benchmarking: Benchmarking Your Building's Energy Use Using ENERGY STAR's Portfolio Manager**
Host: Peter Flippen, ICF International
Date: March 30, 2011
Time: 12:00-1:30 EDT

For the most up-to-date information and registration links, please visit the Solution Center webcast page at www.wip.energy.gov/solutioncenter/webcasts

Webinar Overview

- QECB Overview & Issuance Trends
  - -Elizabeth Bellis, Energy Programs Consortium
- Case Study: St. Louis County, MO
  - -Anne Klein, Director of Energy Sustainability, St. Louis County
- Case Study: Boulder County, CO
  - -Larry Hoyt, County Attorney, Boulder County, CO
- QECBs and Performance Contracting
  - -Keith Reller, General Manager, Johnson Controls Inc.
- Case Study: University of Louisville
  - -Jason Tomlinson, AVP Finance, University of Louisville
- Q&A

Additional QECB Resources

- DOE Clean Energy Finance Guide: QECB Overview & FAQs (in Chapter 2) http://www1.eere.energy.gov/wip/solutioncenter/pdfs/revfinal_v3ch02bonding_qecbsdec9.pdf

- Sept 22, 2010 DOE TAP Webinar: Taking Advantage of Qualified Energy Conservation Bonds (QECBs) http://www1.eere.energy.gov/wip/solutioncenter/webcasts/default.html

- DOE QECB/CREB Primer http://www1.eere.energy.gov/wip/pdfs/qecb_creb_primer.pdf

Presenter-Elizabeth Bellis

Elizabeth Bellis directs the QECB program at Energy Programs Consortium (EPC) in conjunction with the National Association of State Energy Officials (NASEO). She also manages EPC' s legal and related program design work to create a secondary market for residential energy efficiency loans (the "WHEEL" program). Prior to joining EPC, Elizabeth was an associate in the tax department at Debevoise & Plimpton LLP in New York. She holds a J.D. from Harvard Law School.

QECB Overview & Issuance Trends

March 28, 2011

Elizabeth Bellis

EPC
ENERGY PROGRAMS CONSORTIUM

What are “QECBs” and why are they worth issuing?

- QECBs are a type of “tax credit bond” that entitles the holder to a nonrefundable tax credit or, since March 2010, if the issuer so elects, a direct cash payment from the US Treasury. See § 54A & § 54D of the Internal Revenue Code; IRS Notice 2010-35.
- The amount of the QECB subsidy is quite significant -- twice that of the BAB subsidy. The QECB subsidy is generally correlated with Treasury yields and has historically ranged from 3.3 - 4.1%. This corresponds to net financing costs for issuers of around 1 - 1.5%. Source: Wells Fargo.
- QECBs are fairly long-term financing options. The maximum amount of time the bonds can be outstanding (“maturity”) is set by the government and has historically ranged from 12.5 to 19 years. Source: Wells Fargo.
- Up-to-date QECB rates and maturities can be found online at https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm. (Note that the subsidy is 70% of the rate listed).

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What type of projects do QECBs fund?

- "Qualified conservation purposes" such as capital expenditures:
  - -to reduce energy consumption in publicly-owned buildings by at least 20%
  - -to implement green community programs (including the use of loans, grants, or other repayment mechanisms to implement such programs)
  - -for rural development (including producing renewable energy)
  - -for certain renewable energy facilities (such as wind, solar and biomass)
- At least 35 projects have been funded with QECBs in 14 states to date, ranging from replacing HVAC systems in government owned buildings to retrofitting public housing, from building a wind turbine at a technical school to building an entire renewable plant in Los Angeles, from improvements to a recreational center to a commercial PACE program.
- The most common project type so far appears to be the municipal building retrofit.
- According to Wells Fargo data (which does not account for private placements), public issuances have slowed in recent months.
- As much as $2.7 billion of funding may remain out of the original $3.2 billion allocation.

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How do I get started?

- Determine the amount of your allocation.
- Check the bond rating of the would-be issuer. Issuers with poor ratings may have difficulty placing their bonds on favorable terms.
- Identify the authorization procedure in your jurisdiction (statute, executive order, etc). Bond counsel can assist in this process.
- Identify the project or projects desired to be financed. This may be done by issuing a request for applications if there is not already a project in mind.
- Once selected, bond counsel should review intended uses for compliance with QECB requirements.
- Select professionals (legal, financial) and contractors (builders, etc) for the project. This may be done by a competitive bid or RFP process.
- If the project selected is to be financed as a green community program, work with bond counsel to meet special requirements for such programs and address legal uncertainties.

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Contact Information

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Presenter-Anne Klein

- Anne Klein is the Director of Energy Sustainability for St. Louis County. In addition to managing the county's $8.4 million Energy Efficiency and Conservation Block Grant (EECBG) awarded by the Department of Energy, Anne serves as liaison with local, regional and state jurisdictions, utilities, agencies and the public at large implementing a broad-reaching sustainability framework plan called "St. Louis County Green and Growing". Anne is a graduate of the University of Vermont and has her Master's Degree in Public Policy from American University.

St. Louis COUNTY
GREEN AND GROWING

QECB Webinar

March 28, 2011

Energy Efficiency & Conservation Block Grant

$8.4 Million

- Increase energy efficiency
- Reduce energy consumption & costs
- Reduce greenhouse gas emissions
- Create jobs

St. Louis COUNTY
GREEN AND GROWING

Original EECBG Funded Activities

- **Neighborhood Stabilization Program**

  Increase the energy efficiency of foreclosed homes acquired and renovated through the Program

- **Residential Energy Audit Incentive**

St. Louis COUNTY
GREEN AND GROWING

Road Blocks…

- Davis Bacon – No NSP
- Residential Energy Audit Incentive – PACE Instead?

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PACE is the Answer!

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DOE Alternative to PACE…

- Loan Loss Reserve (LLR)
- Revolving Loan Fund

St. Louis COUNTY
Green and Growing

County Alternative to PACE…

- $500,000 of EECBG Funds
- Access to $10.3 Million Qualified Energy Conservation Bonds (QECBs)
- AAA Bond Rating

St. Louis COUNTY
GREEN AND GROWING

Qualified Energy Conservation Bonds (QECBs)

- Debt instrument to fund energy conservation projects
- Direct Subsidy bonds – 70% cash rebate from U.S. Treasury to subsidize net interest payments
- Missouri received access to $61,329,000 in QECBs and allocated $10,307,031 to St. Louis County

St. Louis COUNTY
GREEN AND GROWING

QECBs continued…

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

QECB and New CREB Bond Mechanics

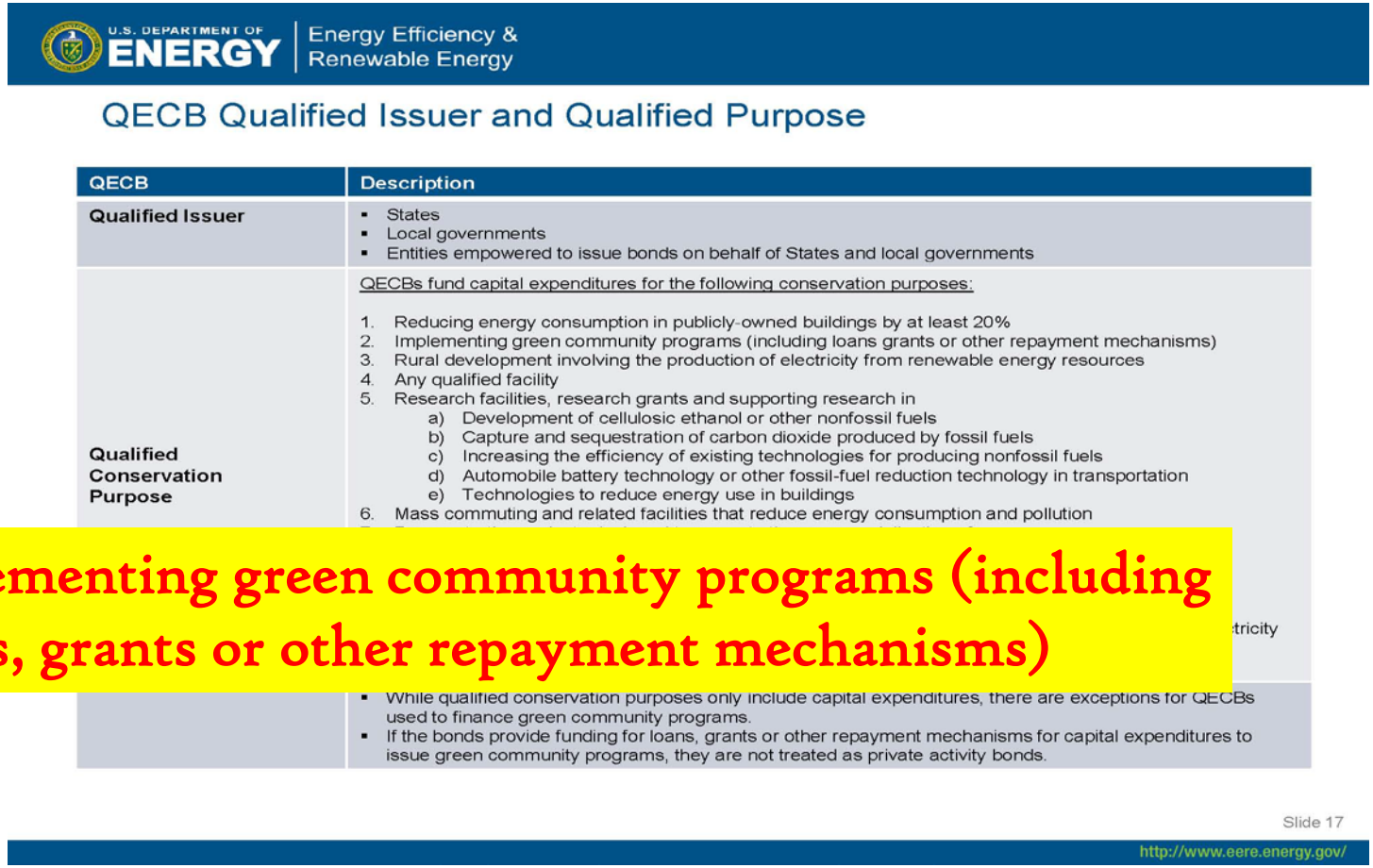
- **IRS NOTICE 2010-35 addresses the new federal refundable tax credit subsidy option under Section 301 of the 2010 HIRE Act**
  - This changes QECBs and New CREBs from tax credit bonds to direct subsidy bonds

Bond Feature	Description (rates as of July 9, 2010)
Term Limit*	▪ Currently 17 years- Set monthly by the U.S. Treasury ▪ Limit is set so that the present value of the principal payments equals 50% of the original principal amount. Discount rate = 110% of the long-term adjusted AFR (Applicable Federal Rate), compounded semi-annually, reset monthly
Structure/Amortization	▪ Bond Structure options: Bullet (all principal due at maturity), serial or terms bond with sinking fund
Coupon Payment/ Tax Credit Rate*	▪ Issuer sells taxable bonds and pays a taxable coupon semi-annually to the investor ▪ Issuer receives from U.S. Treasury the lesser of (i) the taxable rate of the bonds or (ii) 70% of the Tax Credit Rate as of the Bond Sale Date ▪ Tax credit rates are the same for any direct subsidy bond like New CREBs, QECBs, QZABs, QSCBs ▪ 17 year tax credit rate is currently 5.34%
Sinking Funds/ Permitted Yield*	▪ With bullet structures, issuers can make level annual deposits to a sinking fund to smooth debt service payments. ▪ Sinking funds can earn interest subject to arbitrage restrictions. The permitted sinking fund yield is fixed at pricing and limited to 110% of the long-term adjusted AFR, compounded semi-annually, reset monthly. ▪ Permitted yield is currently 4.35%.
Redemption Features	▪ Call features are market driven and subject to negotiations with investor. They are not set by U.S. Treasury ▪ Call options: Make whole (if bonds are a called, the issuer pays the investor a premium so original bond yield is maintained) or 10-year par call (with a higher interest rate on bonds)

St. Louis COUNTY GREEN AND GROWING

* Published daily on https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm

QECBs continued…



2. Implementing green community programs (including loans, grants or other repayment mechanisms)

St. Louis COUNTY
GREEN AND GROWING

Residential Energy Efficiency Loan Program

- LOAN

  Unsecured loans for energy efficiency improvements in homes – max. loan $15,000

- MARKET

  Homeowners with FICOS scores 660 and higher and debt to income ratio of 50% or less

- RATE

  Fixed rate, not to exceed 5%

- TERM

  Up to 10 Years

St. Louis COUNTY
GREEN AND GROWING

Questions from the "Higher Ups"

- Why not get a Home Equity Loan?
- Doesn't it look bad for us to be helping people who already make six figures?
- Is there really a demand for this?
- What is the County's Liability?

St. Louis COUNTY
GREEN AND GROWING

Home Equity Loan

St. Louis COUNTY
GREEN AND GROWING

Financing Options…

Available Residential Energy Upgrade Financing Programs		
Program	**Eligibility Requirements**	**Participant Benefits**
Weatherization Assistance Program (WAP)	Household Income ≤200% of Federal Poverty Guidelines	Free installation of basic energy efficiency improvements
CDBG - Home Improvement Program	Income ≤80% Area Median Income	5-Year forgivable loans to make necessary home improvements
Residential Energy Efficiency Loan Program	FICO ≥660 and Debt-to-Income Ratio ≤50%	<4% financing

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GREEN AND GROWING

Public Demand

- Experience of Other Programs
- Local Support for PACE
- Experience of Energize Missouri Homes Program

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County Liability ???

- Default Rates
  - Default Rates
    - Default Rates

St. Louis COUNTY
GREEN AND GROWING

Moving Forward…

- Anticipated Passage of QECB bill by County Council 3/29/2011
- Currently Negotiating Contract for Program Design, Implementation, Marketing, etc.
- Anticipated Contract Start Date 4/15/2011
- Bond Closing Date – End of April

St. Louis COUNTY
GREEN AND GROWING

Questions?

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St. Louis COUNTY
GREEN AND GROWING

Presenter-Larry Hoyt

Larry Hoyt has served as Boulder County Attorney since 1986. He graduated with honors from the University of Colorado and received his law degree from the University of Denver College of Law. He has lectured extensively on local government law issues, with a particular emphasis on government finance, environmental law, civil rights, and intergovernmental relations. He has published and edited several articles and book chapters on issues related to state and local immigration control and on federalism and the Tenth Amendment. He has written an upcoming book chapters on federal preemption of green (energy efficiency) building code provisions.

Boulder County, Colorado

Green Communities Program

Financing via ARRA QECB/BAB Bonds

Green Community Program

- Adopted resolution establishing and defining Boulder County's Green Community Program for purposes of QECB financing.
  - WHEREAS, Section 301(a) of the Tax Extenders and Alternative Minimum Tax Relief Act of 2008 added Section 54D (as amended by Section 1112 of the American Recovery and Reinvestment Acl of 2009, "Section 54D") to the Internal Revenue Code of 1986, as amended (as amended, the "Code"), to authorize stales and political subdivisions to issue qualified energy conservation bonds ("QECBs") for one or more Qualified Conservation Purposes (as defined in Section 54D); and

GCP Resolution (cont'd)

- WHEREAS, among such Qualified Conservation Purposes are "capital expenditures incurred for purposes of ... implementing green community programs (including the use of loans, grants, or other repayment mechanisms to implement such programs)" (as used herein, "Green Community Programs"); and
- WHEREAS, the County desires to establish a Green Community Program (as further described herein, the "Boulder County Green Community Piogram"), lo be financed in part with the proceeds of QECBs to be issued by the County; and

Green Community Program (cont'd)

- WHEREAS, the aim of the Boulder County Green Community program is the reduction of fossil fuel consumption in the County so as to: (a) reduce the climate effects of greenhouse gas production; (b) reduce energy costs of the County and County residents; (c) increase the
- County's energy independence; and (d) provide an example for others lo follow; and
- WHEREAS, this Resolution is being adopted to provide an initial description of the Boulder County Green Community Program and to set forth certain projects to be included therein.

FINANCINGS

- Two financings of very different kinds have occurred using QECB/BAB volume cap allocation:
  - 1) Issuance of $5.845M to pay for EE/RE upgrades to existing County buildings AND for construction of new County building to meet LEED Gold standard (interest cost: 1.76% net); and
  - 2) Commercial PACE financing program: issuance of $1.575M to pay for retrofit upgrades to private properties in the County (net interest cost (to County): 3.56%; interest cost to borrowers: 5.5% (5-yr.), 6.5% (10-yr.) Interest cost to borrowers includes admin costs of County expressed as interest on loans.

County Bldgs. EE/RE Upgrade Project

- (i) Improvements to building envelopes of County buildings and facilities to reduce heat loss and gain by installing better insulation, replacing inefficient windows and installing reflective roofing.
  - Such improvements will include, without limitation, the replacement of approximately 34,000 square feet of the roof of the County Jail with insulation rated at R24 minimum and certified under the Energy Star rating for reflective roofing.

- (ii) Improvements to County building and facility mechanical systems achieved by replacing air handlers, chillers, boilers and accessory systems with high efficiency designs and equipment.
  - Such improvements will include, without limitation, the replacement of six air handlers at the Boulder County Justice Center with units that contain heat recovery and direct/indirect evaporative cooling.

Commercial PACE EE/RE Retrofit financing

- TOTAL: 29 applications / $1.56M
- Big loans (over $80K): 9 applications / $1.31M
- Small Loans: 20 applications / $.25M
- This total bond principal amount was much smaller than would be feasible to finance on a cost-effective basis in the absence of the QECB tax subsidy. Ordinarily, the County would not consider going to market with less than $5M in bond principal amount, due to fixed issuance costs.

Issues to consider

- Davis-Bacon Wage Act: application to government building projects; application to private projects financed with QECB funds.
- Green community program flexibility: ability to define (reasonably) the energy/greenhouse gas emissions savings objectives that your qualifying local projects can meet (e.g. 20% reduction over useful life of project in utility costs, determined on a per-project basis – very difficult in a low energy costs locale.
- Lender consents for PACE w/ priority lien

Contact Information

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Boulder County Attorney

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Presenter-Keith Reller

Keith Reller oversees the targeting, development, and administration of projects funded through the American Recovery and Reinvestment Act in the Northeast and Mid Atlantic Regions. Keith leads advanced funding efforts for large scale sustainable efficiency projects that can have significant positive results for their communities, environments, and economies. A Johnson Controls team member since 1992, Keith has experience in energy, construction, maintenance, and operations projects thought out the United States and international locations. Mr. Reller earned his Bachelors of Science degree from the University of Southern Indiana.

Winning with Qualified Energy Conservation Bonds

QECB Webinar

March 28, 2011

Johnson Controls

What We'll Cover Today

- Leverage ARRA Impact – Overview
- Why Use QECB's
- Effective Implementation Methodology
  - Energy Conservation Projects
  - Green Community Program
- QECB Challenges
- Genesee County – Voice of the Customer
- Questions & Wrap Up

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Extend the impact of ARRA funds

"To increase the impact of these stimulus funds, DOE encourages plans which achieve a high degree of leveraging, and/or projects that **e x t e n d the impact of the funds**. Examples of programs which provide high leverage are **revolving loan programs and performance contracting**."

– U.S. Department of Energy on State Energy Program Formula Grants, March 12, 2009

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What is Energy Performance Contracting?

- Reduce energy usage
- Reduce water usage
- Reduce operating and maintenance costs
- Reduce emissions
- Reduce waste
- Guaranteed Results

In short, **Performance Contracting** is a procurement tool that allows you to leverage the savings you get from making building improvements in order to pay for the improvements.

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Customer Discussion to Identify Goals:

energy efficiency, emissions reduction,
operational savings, water savings, etc.

Preliminary audit / Site visit

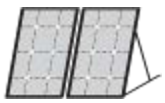
Customer commitment

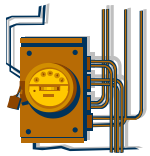
Detailed audit
Sophisticated analysis tools used to gather data and develop customized solution

Energy Performance Contract with Savings Guarantee

Improvements such as:





Lighting, water, HVAC, renewable energy, building upgrades, wireless, meters / controls

- **Lower Water Use**
- **Lower Utility Use**
- **Reduce Waste**
- **Reduce Emissions**
- **Reduce Ops Budget**
- **Reduce Maintenance**

Meet Customer Goals

Why Use QECB

They represent an incredibly cheap form of borrowing. QECBs reduce the issuers borrowing cost for state, local, and tribal governments.

They allow state, local, and travel governments to issue bonds and then to fund qualified energy conservation projects.

QECB issuer pays an investor a taxable coupon to borrow money and then receives a direct cash rebate from the US Treasury.

The Recovery Act expanded the allowable bond volume to 3.2 billion - and then the real game-changer was that HR 2847 in 2010 introduced an option to recoup part of the interest issuers pay on QECBs through a direct cash subsidy.

Like the Build America Bonds, QECB are effectively the same mechanism. This is a game-changer in the sense that it allows QECB government issuers to take advantage of the much larger taxable bond market.

Issued as a revenue bonds, the bond would be supported by specific revenue streams (energy efficiency program). The repayments on that loan program would actually provide security to the bond investor

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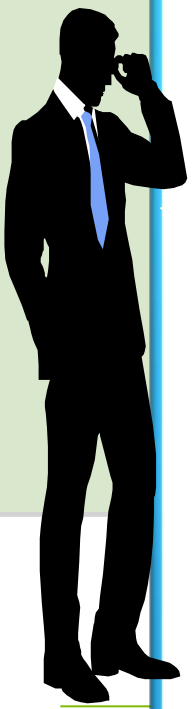
Effective Implementation Methodology

Energy Conservation Projects

Qualified projects are defined broadly: Examples of qualified projects include:

- ✓ Energy efficiency capital expenditures in public buildings – at least 20% energy consumption reduction
- Renewable energy production
- Various energy-related research and development Efficiency/energy reduction measures for mass transit
- Energy efficiency education campaigns
- ✓ Green communities programs



Green Community Projects

Conference Report to the American Recovery and Reinvestment Act of 2009 includes the following statement regarding Congressional intent about the broad intended scope of this term:

> "Also, the provision clarifies that capital expenditures to implement green community programs includes grants, loans, and other repayment mechanisms to implement such programs. For example, this expansion will enable States to issue these tax credit bonds to finance retrofits of existing private buildings through loans and/or grants to individual homeowners or businesses, or through other repayment mechanisms….Retrofits can include heating, cooling, lighting, water-saving, storm water-reducing, or other efficiency measures.—

Example: Unsecured Commercial EE Loan Program Rules

- A maximum of 30% of QECB allocations may be used for private activity purposes
- All bond proceeds must be spent within 3 years or used to redeem bonds at the end of that 3 year period
- Issuers must have a binding commitment with a 3rdparty to spend at least 10% of the bond proceeds within 6 months of the issuance date
- Only 2% of the bond proceeds can be used towards cost of issuance

QECB.pdf

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QECB Challenges

- Low QECB volume allocations
- QECB volume allocations often do not have sufficient size to wet investor appetite
- Issuers might want to consider a pooled issuance
  - Investor unfamiliarity
- Taxable investors are not as familiar with municipal credits
- Build America Bonds have helped familiarize the taxable investor base with municipal credits
  - A bond issuance takes several months to structure, market, price and close
  - QECBs might strain bond issuance limits for some issuers

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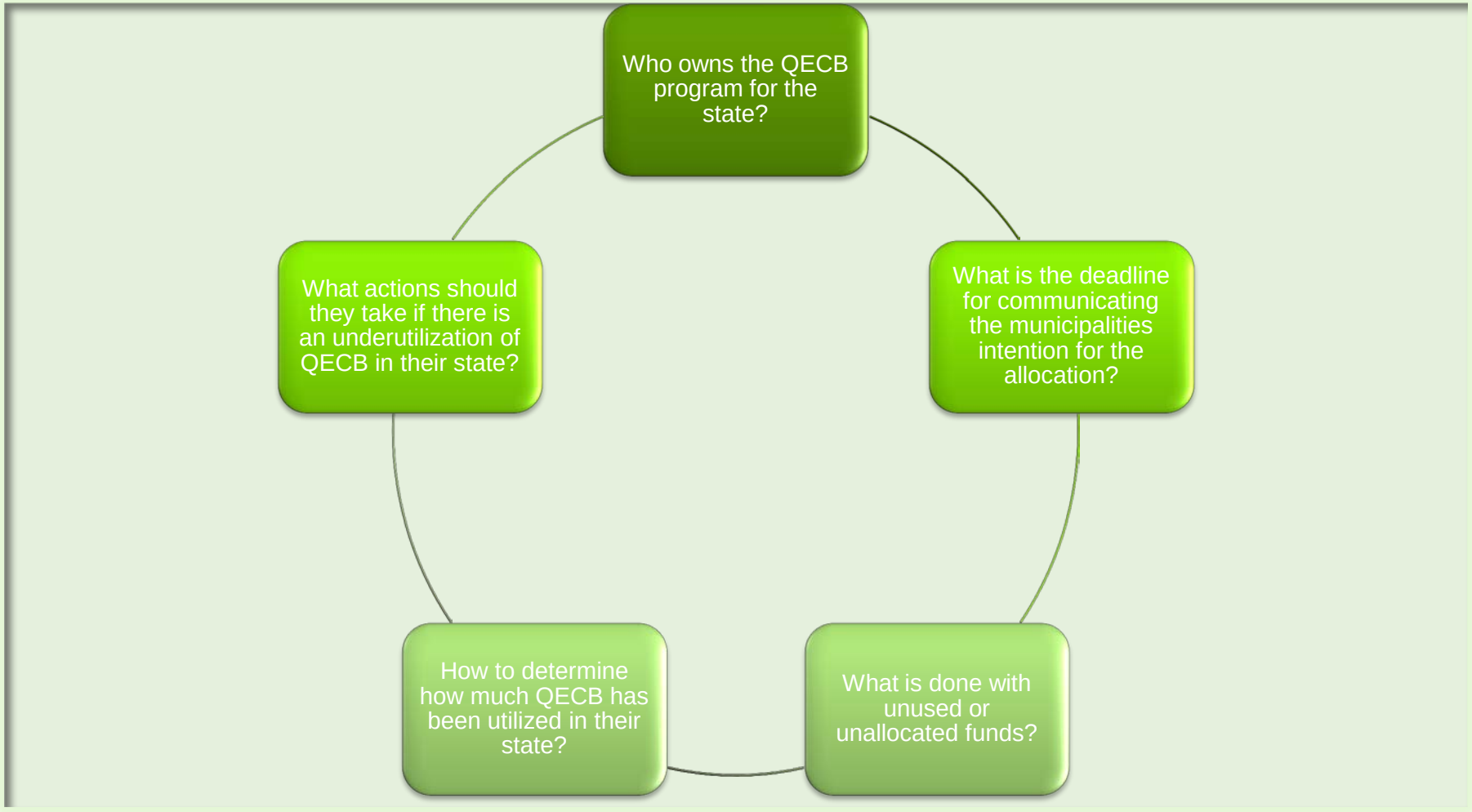
QECB Considerations



Voice of the Customer

Genesee County, Michigan

George Martini
Finance Director

Johnson Controls

Customer Solution

Amount of ARRA funds, interest rate

- **$9.4M** in Self Funded Improvements
  - QECB **$7,815,784** at 5.59% interest rate - 1.91% Net
    - Total amount saved using QECB over Tax Exempt Bonds - $**1.5M**
  - **$1.6M** Energy Efficiency & Conservation Block Grant

Improvements

- Building Automation Controls
- Lighting/Lighting Controls
- New RTU's/Boilers
- Retro-commissioning
- Critical Services (Mechanical, Controls, M&V)
- Solar PV & Thermal
- IT (1200 VOIP Phones & Network Upgrade)
- Windows/Doors Roofs (Repair and New)
- Fire Panel Replacement

Unique qualities of the job

- Added ~ 100 Local Jobs
- Fully funded by ARRA
- Extensive IT Improvements
- Solar w/Kiosk

Johnson Controls


Keith D. Reller
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Questions & Wrap Up

Presenter-Jason Tomlinson

Jason Tomlinson is the Assistant Vice President for Finance at the University of Louisville, a position he has held since 2004. He is responsible for capital financing, UofL Foundation projects, Financial and HCM Systems Administration and Payroll.

UNIVERSITY OF LOUISVILLE®

U.S Dept of Energy's TAP Webinar - Qualified Energy Conservation Bonds (QECBs)

Updates from the Field

Some Background…..

- The Kentucky General Assembly has enacted three bills, HB-639 (1998), HB-264 (1996), and SB-157 (1996), which establish the basis for energy efficiency in state and local government buildings. These bills authorize guaranteed energy savings performance contracting (ESPC).

Some Background…..

- The 1996 legislation (HB-264) provided for the use of ESPCs as a private sector financing mechanism. ESPCs require that qualified providers (Energy Service Companies, ESCOs) guarantee the savings realized will pay for energy improvements.

Some Background…..

- The majority of UofL buildings are state owned
- The Department for Facilities Management issues guidelines/regulations for executing ESPCs
- Statutory requirements for Office of Financial Management (OFM) to review and approve the financial aspect of the project

Timeline

Date	Event
April 2006	HB 380 approved by General Assembly including an ESPC project
Dec. 2007	UofL initiated ESPC project with issuance of an RFP for Phase I
May 2008	Siemens Building Technologies selected as ESCO
Oct. 2009	Master Equipment Lease executed for Phase I
Sept. 2010	Board of Trustees approved Phase II
Nov. 2010	Board of Trustees approved bond financing for Phase II
Nov. 2010	ESPC project approved by OFM
Dec. 2010	BABs and QECB Bonds issued for Phase II

Compare and Contrast

Phase I

- Improvements to 68 buildings
- $6,400 savings per day
- Project Included: lighting retrofits, building energy management control upgrades, water conservation upgrades, mechanical upgrades and ventilation upgrades

Phase I

- Master Equipment Lease
- Financed Amount – $20,439,603
- Financial Rate – 4.79% (Oct. 2009)
- Term 13.5 years
- Total interest – $8,118,554

Phase II

- Improvements within 17 education and general buildings
- $4,930 savings per day, totaling $1.8 million annually
- Project Included: lighting retrofits, HVAC system replacement, building controls, motors, belts, water conservation, commissioning, and training

Phase II

- 2010 Taxable Series A Bonds (BABs) and 2010 Taxable Series B (QECB) Bonds
- Financed Amount – $25,000,000
- Financial Rate – 1.8% (Dec. 2010)
  - BABs – 3.28%
  - QECB – 1.64%
- Term 17 years
- Total interest – $6,667,749

QECB

- Utilized Sinking Fund
- Reduced deposit in 2023
- No further deposit 2024-2027
- Sinking Fund invested at a rate of 3.9989%
- Financial Advisor – Hilliard Lyons
- Bond Counsel – Peck Shaffer & Williams

Date	Total BABs Principal & QECB S.F. Deposits	Gross BABs and QECB Interest Payments	Total BABs and QECB Direct Pay	Total Principal, Net Interest & S.F. Deposits	Fiscal Total	Energy Savings	Excess Savings (Savings minus Debt Service)
12/29/2010	-	-	-	-	-	-	-
3/1/2011	-	227,749.34	(152,675.35)	75,073.99	75,073.99	-	(75,073.99)
9/1/2011	-	661,207.75	(443,251.04)	217,956.71	-	-	-
3/1/2012	-	661,207.75	(443,251.04)	217,956.71	435,913.42	665,796.00	229,882.58
9/1/2012	1,413,000.00	661,207.75	(443,251.04)	1,630,956.71	-	-	-
3/1/2013	-	660,036.25	(442,841.01)	217,195.24	1,848,151.95	2,049,562.00	201,410.05
9/1/2013	1,415,000.00	660,036.25	(442,841.01)	1,632,195.24	-	-	-
3/1/2014	-	658,208.75	(442,201.39)	216,007.36	1,848,202.60	2,049,562.00	201,359.40
9/1/2014	1,418,000.00	658,208.75	(442,201.39)	1,634,007.36	-	-	-
3/1/2015	-	655,810.75	(441,362.09)	214,448.66	1,848,456.02	2,049,562.00	201,105.98
9/1/2015	1,422,000.00	655,810.75	(441,362.09)	1,636,448.66	-	-	-
3/1/2016	-	652,702.75	(440,274.29)	212,428.46	1,848,877.12	2,049,562.00	200,684.88
9/1/2016	1,426,000.00	652,702.75	(440,274.29)	1,638,428.46	-	-	-
3/1/2017	-	649,256.25	(439,068.01)	210,188.24	1,848,616.70	2,049,562.00	200,945.30
9/1/2017	1,431,000.00	649,256.25	(439,068.01)	1,641,188.24	-	-	-
3/1/2018	-	645,098.25	(437,612.71)	207,485.54	1,848,673.78	2,049,562.00	200,888.22
9/1/2018	1,437,000.00	645,098.25	(437,612.71)	1,644,485.54	-	-	-
3/1/2019	-	640,358.25	(435,953.71)	204,404.54	1,848,890.08	2,049,562.00	200,671.92
9/1/2019	1,443,000.00	640,358.25	(435,953.71)	1,647,404.54	-	-	-
3/1/2020	-	635,133.75	(434,125.14)	201,008.61	1,848,413.15	2,049,562.00	201,148.85
9/1/2020	1,450,000.00	635,133.75	(434,125.14)	1,651,008.61	-	-	-
3/1/2021	-	629,508.75	(432,156.39)	197,352.36	1,848,360.97	2,049,562.00	201,201.03
9/1/2021	1,458,000.00	629,508.75	(432,156.39)	1,655,352.36	-	-	-
3/1/2022	-	623,381.25	(430,011.76)	193,369.49	1,848,721.85	2,049,562.00	200,840.15
9/1/2022	1,466,000.00	623,381.25	(430,011.76)	1,659,369.49	-	-	-
3/1/2023	-	616,731.25	(427,684.26)	189,046.99	1,848,416.48	2,049,562.00	201,145.52
9/1/2023	1,280,431.02	616,731.25	(427,684.26)	1,469,478.01	-	-	-
3/1/2024	-	609,581.25	(425,181.76)	184,399.49	1,653,877.50	2,049,562.00	395,684.50
9/1/2024	285,000.00	609,581.25	(425,181.76)	469,399.49	-	-	-
3/1/2025	-	601,957.50	(422,513.45)	179,444.05	648,843.54	2,049,562.00	1,400,718.46
9/1/2025	295,000.00	601,957.50	(422,513.45)	474,444.05	-	-	-
3/1/2026	-	593,845.00	(419,674.08)	174,170.92	648,614.97	2,049,562.00	1,400,947.03
9/1/2026	306,000.00	593,845.00	(419,674.08)	480,170.92	-	-	-
3/1/2027	-	585,047.50	(416,594.95)	168,452.55	648,623.47	2,049,562.00	1,400,938.53
9/1/2027	318,000.00	585,047.50	(416,594.95)	486,452.55	486,452.55	1,024,781.00	538,328.45
Total	**$18,263,431.02**	**$21,124,687.59**	**(14,456,938.47)**	**$24,931,180.14**	**$24,931,180.14**	**$32,434,007.00**	**$7,502,826.86**

Compare and Contrast

- Phase I
  - Borrowed – $20,439,603
  - Payback – $28,558,157
- Phase II
  - Borrowed – $25,000,000
  - Payback – $24,931,180

Questions???

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Questions??

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Additional QECB Resources

- DOE Clean Energy Finance Guide: QECB Overview & FAQs (in Chapter 2) http://www1.eere.energy.gov/wip/solutioncenter/pdfs/revfinal_v3ch02bonding_qecbsdec9.pdf

- Sept 22, 2010 DOE TAP Webinar: Taking Advantage of Qualified Energy Conservation Bonds (QECBs) http://www1.eere.energy.gov/wip/solutioncenter/webcasts/default.html

- DOE QECB/CREB Primer http://www1.eere.energy.gov/wip/pdfs/qecb_creb_primer.pdf

Upcoming Webinars

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Please join us again:

Title: **Developing an Evaluation, Measurement, and Verification Plan: Residential Retrofits**
Host: **Julie Michals, Northeast Energy Efficiency Partnerships**
Date: March 29, 2011
Time: 2:00-3:00 EDT

Title: **Basic Benchmarking: Benchmarking Your Building's Energy Use Using ENERGY STAR's Portfolio Manager**
Host: Peter Flippen, ICF International
Date: March 30, 2011
Time: 12:00-1:30 EDT

For the most up-to-date information and registration links, please visit the Solution Center webcast page at www.wip.energy.gov/solutioncenter/webcasts