

DOE Technical Assistance Program

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



Making it Easier to Complete Clean
Energy Projects with Qualified
Energy Conservation Bonds (QECBs)

July 19, 2012

- **Clean Energy Big Picture & Priorities:** Brandon Belford, White House National Economic Council
- **QECB Fundamentals:** Mark Zimring, Lawrence Berkeley National Laboratory
- **Deep Dive Into Recent Guidance:** John Cross, U.S. Department of the Treasury
- **City of San Diego's "Green Communities" Street Lighting Project:** Tom Blair, City of San Diego
- **City of Philadelphia's Public Buildings Initiative:** Adam Agalloco, City of Philadelphia
- **Resources:** Molly Lunn, U.S. Department of Energy
- **Questions & Answers**

- **Brandon Belford** is a Senior Policy Advisor for the National Economic Council at the White House where he works on a number of domestic and international economic policy issues, including energy and infrastructure investment.

- **Mark Zimring** is a Program Manager in the Electricity Markets and Policy Group at Lawrence Berkeley National Laboratory. Mark conducts research and analysis and provides technical assistance to utility commissions, state and local governments on energy efficiency and renewable energy, including policy, program design and financing. He helps to lead the US Department of Energy's QECB Technical Assistance work.



QECB Fundamentals

Mark Zimring

Lawrence Berkeley National Laboratory

DOE Technical Assistance Program Webcast

July 19, 2012



Presentation Overview



- What are QECCBs?
- How Do QECCBs Work?
- What are QECCBs Typically Used For?
- Can I Use ARRA Funds with QECCBs?
- How Do I Access QECCBs?



The information in this presentation is for informational purposes only—potential issuers should consult the U.S. Department of Treasury’s QECCB guidance and their own bond counsels.

What are QECBs?



Federally subsidized bonds that enable state, tribal, and local government issuers to borrow money to fund a range of energy conservation projects at very attractive borrowing rates over long contract terms.

How do QECBs Work?



- **QECB Interest Rate Subsidy:**

- Current Maximum U.S. Treasury QECB Subsidy: 2.98%**
- Example:

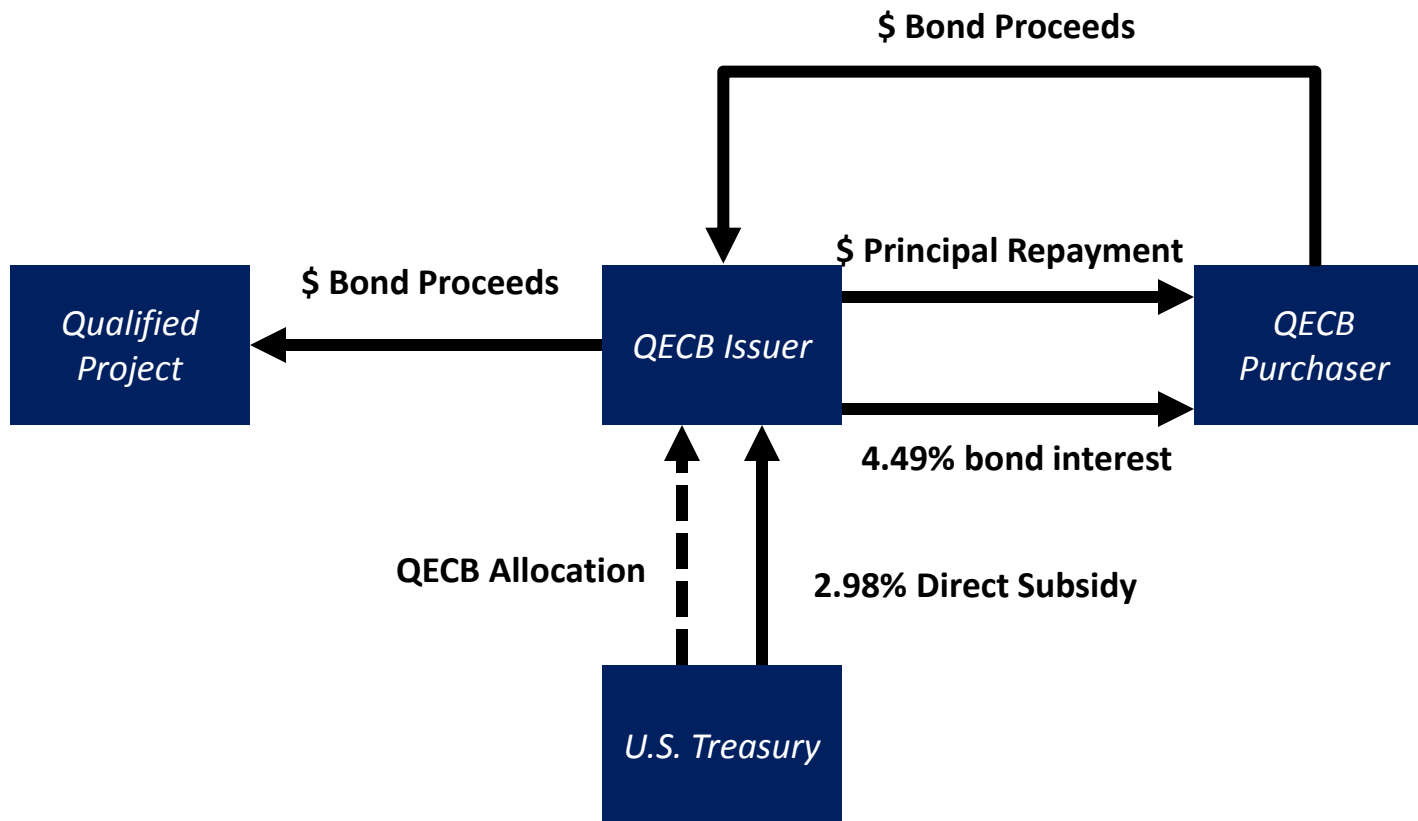
4.49%	Taxable interest rate paid to bond purchaser
- 2.98%	QECB direct subsidy
<hr/>	
1.51%	Net QECB interest rate

- **Maximum QECB Maturity:**

- Up to 22 years**

**The maximum QECB interest rate subsidy and maturity fluctuate. For updated information, visit: <https://www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm>

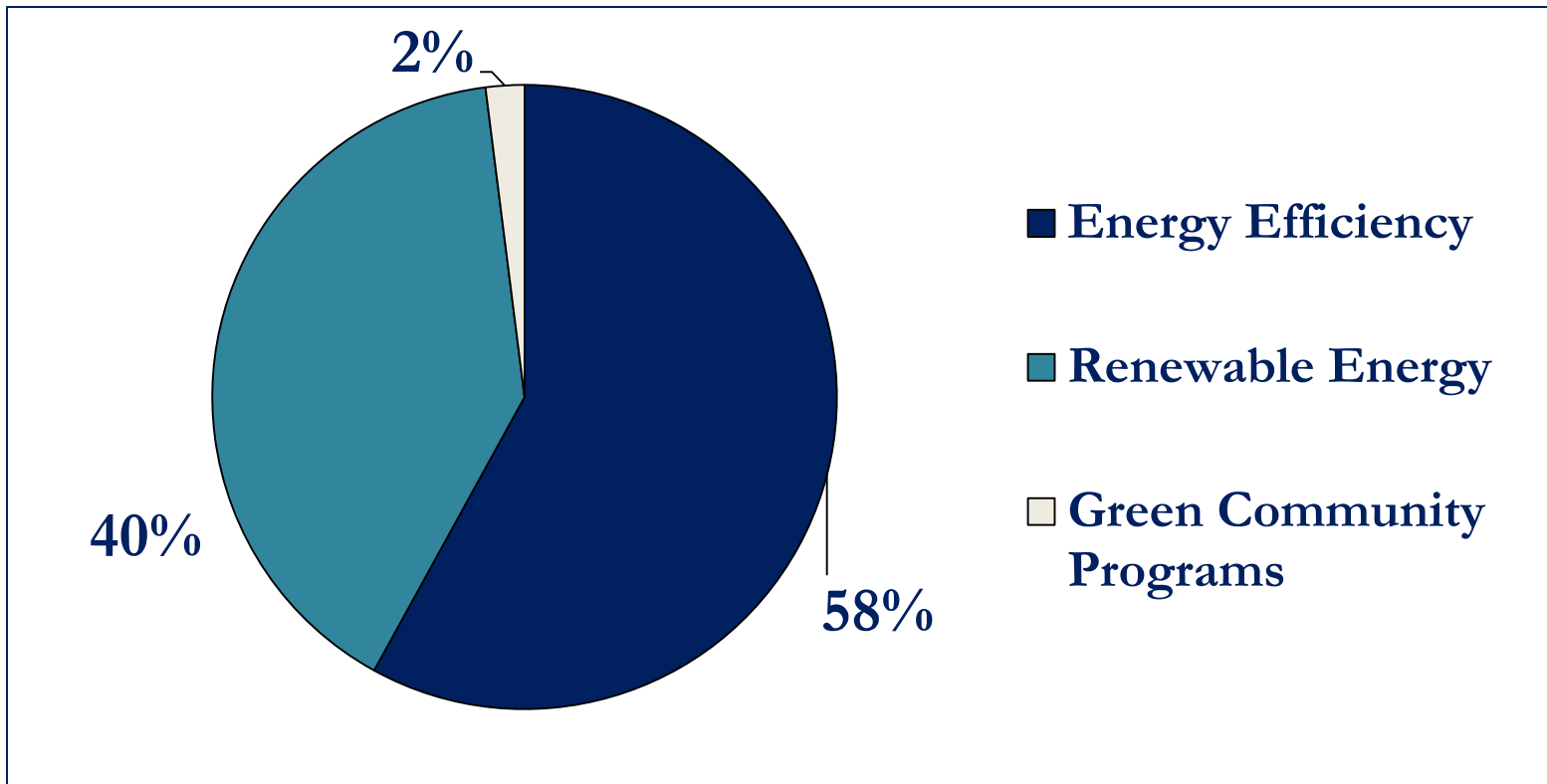
How Do QECCBs Work?



What Are QECCBs Typically Used For?



Use of QECCB Proceeds (through May 2012)*



*Known issuances. Source: Energy Programs Consortium

http://www.energyprograms.org/wp-content/uploads/2012/03/QECCB_Memo_6-8-2.pdf

Can I Use ARRA Funds with QECBs?



- ARRA funds can be used to support QECBs via:
 - Debt service reserve fund
 - Capitalized interest fund
 - Principal sinking fund



Additional guidance available here:

<http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/qecb.html>

How Do I Access QECBs?



- U.S. Treasury allocated \$3.2 billion of QECB issuance capacity to State Treasurers based on population
 - ~20% of issuance capacity has been used
- Parts of state allocations were sub-allocated to large local governments
 - Processes for notifying local governments and sub-allocating (or issuing) remaining state allocations vary
- Contact your State Energy Office for more information on the status of QECBs in your state
 - The U.S. Department of Energy may also be able to assist you. E-mail TechnicalAssistanceProgram@ee.doe.gov with questions

- **John J. Cross III** is an Associate Tax Legislative Counsel in the Office of Tax Policy at the U.S. Treasury Department, where his primary area of expertise and responsibility involves municipal bond programs. Mr. Cross participated in tax legislative efforts for the 2009 Recovery Act, the 2010 HIRE Act, and other recent tax legislation. Mr. Cross led the Treasury Department's implementation of the municipal bond provisions in recent tax legislation, including public guidance on eight targeted municipal bond programs. Mr. Cross participated in the development of the recent public guidance on QECBs under IRS Notice 2012-44 (2012-28 IRB, July 9, 2012).

- IRS Notice 2012-44 (2012-28 IRB, July 9, 2012):
<http://www.irs.gov/pub/irs-drop/n-12-44.pdf>
- LBNL Guidance Overview:
<http://financing.lbl.gov/reports/qecb-guidance.pdf>
- IRS Notice 2010-35:
<http://www.irs.gov/pub/irs-drop/n-10-35.pdf>
- IRS Notice 2009-29:
<http://www.irs.gov/pub/irs-drop/n-09-29.pdf>

- **Tom Blair** is a Deputy Environmental Services Director for the city of San Diego and coordinates the energy efficiency improvements for all city Departments. The normal shortage of funds for projects involving energy efficiency has lead Tom to investigation many types of third party financing for projects. The street light conversion is the City's latest project where the savings more than pay for the debt service of accomplishing the conversion.

Presentation by:



America's Finest City

THE CITY OF SAN DIEGO



Evari GIS Consulting






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THE CITY OF SAN DIEGO

Project Highlights

Street Light Conversion Project

- **Replacing 35,311 HPS cobrahead-style street lights**
 - **Payback Less Than Ten Years**
 - **Type: Induction by General Electric**
 - **60% complete**
 - **99%+ material recycled**
 - **25% DBE Participation**
- 



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Project Development



- Procurement Strategy
- Specification Development
- Funding Sources
- ARRA Funding Requirements???
- Long Term Warranty Considerations
- Payback Analysis





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Project Development

Procurement Strategy



INDUCTION vs. LED???



OR?



This is a ~20-year investment!

Selecting based on Lowest Initial Installed Cost is a strategic mistake!



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Project Development

Procurement Strategy



INDUCTION vs. LED???



OR?



- ✓ Proven technology
- ✓ Energy efficient
- ✓ Step dimmable
- ✓ Affordable
- ✓ Long life

- ✓ Latest technology – digital light
- ✓ Energy efficient
- ✓ Fully dimmable
- ✓ Affordable (slightly more than Induction)
- ✓ Long life



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Project Development

Specification Development



- Pass / Fail Criteria?
- Performance Specifications?
- Can we afford it?

The Street Light Working Group (SLWG) developed working bid specifications to guide the procurement. Comprised of eleven cities in San Diego County.

Freely available to any interested municipality.



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Project Development

ARRA Funding Requirements



- Buy American → **Beware!!!**
- *Prevailing Wages (Davis-Bacon)*
- *Subcontractor Flow-down requirements*
 - *Periodic Reporting*



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Project Development

Long Term Warranty Considerations



➤ Length of Warranty?

- *Does it protect your investment (at least over the payback period)?*

➤ Warranty Labor Included?

- *Have you considered impact on your Maintenance Program?*

➤ Who Is Standing Behind Your Warranty?

- *Not all warranties are created equal!*



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Project Development

Funding Sources



- California Energy Commission 3% Loan
 - 10 Year Simple Payback
- Qualified Energy Conservation Bond
 - 15-17 year term / Project Payback 6 years
- EECSBG Funds (effectively used when combined to buy-down payback)
- On-Bill Financing
- Utility Rebates

OTHER PEOPLES MONEY!!!

- State QECB Allocation \$13.1 Million
 - Augmented \$5 Million (EECBG/CEC) Pilot Project
 - Guidance not clear on “Green Community “
 - Bond Council asked for IRS Determination
 - IRS Response ??????????????????
 - Established Lease format project

- **Adam Agalloco** is the Energy Conservation Coordinator for the Mayor's Office of Sustainability in the City of Philadelphia. The Mayor's Office of Sustainability is responsible for reporting and implementing on the City's comprehensive sustainability plan, *Greenworks Philadelphia*. In his role, Adam is responsible for developing and implementing an aggressive energy conservation program to help the City meet its energy reductions goals in City owned facilities. Adam is the project manager for the City of Philadelphia's first Guaranteed Energy Savings Project at the City's four large downtown buildings.



City of Philadelphia
“Quadplex” Guaranteed Energy
Savings Project

July 19th, 2012

Adam Agalloco

Mayor’s Office of Sustainability

GREENWORKS PHILADELPHIA

ENERGY - PHILADELPHIA REDUCES ITS VULNERABILITY TO RISING ENERGY PRICES

ENVIRONMENT - PHILADELPHIA REDUCES ITS ENVIRONMENTAL FOOTPRINT

EQUITY - PHILADELPHIA DELIVERS MORE EQUITABLE ACCESS TO HEALTHY NEIGHBORHOODS

ECONOMY - PHILADELPHIA CREATES A COMPETITIVE ADVANTAGE FROM SUSTAINABILITY

ENGAGEMENT - PHILADELPHIANS UNITE TO BUILD A SUSTAINABLE FUTURE

5 GOALS, 15 TARGETS, OVER 150 INITIATIVES

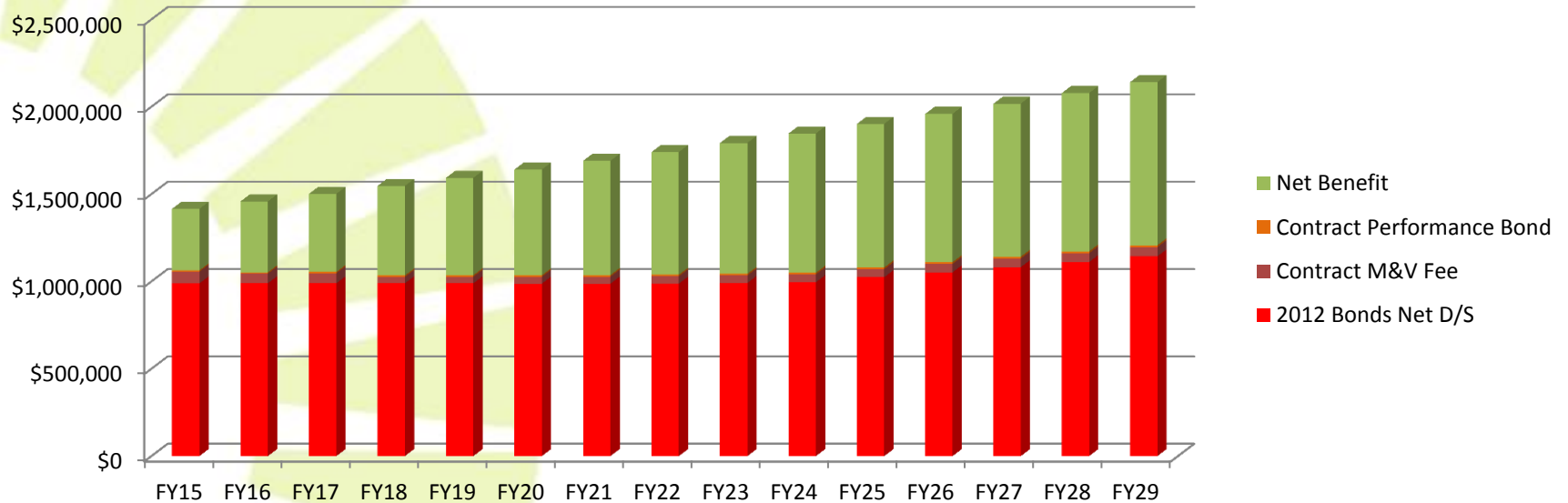


Project Basics

- **Buildings:** City Hall, Municipal Services Building, One Parkway Building and Center for Criminal Justice. Four of the City's top seven energy users.
- **Contract and Partners:** Partnership with Noresco to design and build energy efficient systems bypassing the traditional 4-part bidding and allowing Noresco to guarantee the project savings. Allowable in PA through the Guaranteed Energy Savings Act.
- **Energy Conservation Measures:** Improvements to building control systems, lighting improvements, water conservation, high efficiency air filters, boiler replacement, and building envelope improvements.



Project Snapshot



Total Cost	\$12,285,000
Current Energy Costs in the Four Buildings (Annual, 4-year Average)	\$5,221,000
First Year Energy Cost Savings	\$1,340,000
First Year Payments	(\$988,000)
Net Cash Flow* (First Year)	\$352,000
*Increases with increases in energy prices.	

Basic Timeline

- **December 2008-** City Issued RFQ to all qualified ESCOs, Three were chosen to perform a preliminary audit
- **December 2009-** Noresco selected based on strength of preliminary audit.
- **July 2010-** Investment grade audit agreement signed between City and Noresco.
- **October 2011-** Noresco completes investment grade audit, Legislation introduced by City Council to authorize project.
- **March 2012-** Contracts finalized and executed.
- **June 2012-** Bonds close.
- **July 2012-** Construction begins.
- **Spring/Summer 2014-** Project enters performance period. Project savings guaranteed through contract.

Project Development Concerns

- This is the City's first exposure to a Energy Performance Contract. The project needs to be a success if we plan to use the model in the future and if we want others in City of Philadelphia to use energy performance contracts.
- **Set Core Criteria:**
 - Energy savings project first and foremost
 - Project should have a positive cash flow
 - Facilities should be easier to operate
 - Should have opportunities for M/W/DS Business Enterprises
- **Other Items:**
 - Investment grade audit back out fee (ARRA funded)
 - City set utility escalation rates
 - Technical consulting on project
 - Measurement and verification plan
 - IGA technical review (energy calculations, materials, etc)
 - Project has reserved utility rebates but ECM payback is not dependent on these incentives
 - Involve everyone early!

Financing

- Financing
 - Project is financed through the Philadelphia Municipal Authority
 - Revenue Bonds
 - \$6.355 Million in Tax exempt Bonds
 - Qualified Energy Conservation Bonds
 - Municipal Services Building and One Parkway Building, driven by ordinances.
 - Uses \$6.25 Million of \$15 million City of Philadelphia allotment.
 - Treated separate for payment during implementation. Financing method effects use of project contingency.
- Savings from the project fully pay off debt
 - “Flat” payments
 - Savings escalate as utility rates increase
 - All savings belong to the City



Questions

Adam Agalloco

Mayor's Office of Sustainability

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DOE's Technical Assistance Program (TAP) supports state, local, and tribal officials, by providing them with tools and resources needed to implement successful and sustainable clean energy programs



Visit our recently updated QECBs page

U.S. DEPARTMENT OF **ENERGY** | Energy Efficiency & Renewable Energy
EERE Home | Programs & Offices | Consumer Information

Solution Center

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WEBCASTS
PROJECT MAP
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Financial Products

- Financing Overview
- Key Program Elements
- Types of Financing Programs
 - Energy Efficient Mortgages
 - Energy Savings Performance Contracting
 - FHA PowerSaver Loans
 - On-Bill Repayment Programs
 - Property Assessed Clean
 - Power Purchase Agreements
 - Qualified Energy Conservation Bond (QECB)
 - State & Municipal Revolving Loan Funds
 - Third Party Loans
- Clean Energy Finance Guide
- Buildings
- Electric Power & Renewable Energy
- Energy Education

Qualified Energy Conservation Bond (QECB)

A Qualified Energy Conservation Bond (QECB) is a debt instrument that enables qualified state, tribal and local government issuers to borrow money to fund energy conservation projects (It is important to note that QECBs are not grants). A QECB is among the lowest-cost public financing tools because the U.S. Department of Treasury subsidizes the issuer's borrowing costs. Like [Build America Bonds](#), QECBs are taxable bonds — this means that investors must pay federal taxes on QECB interest they receive. Issuers may choose between structuring QECBs as tax credit bonds (bond investors receive federal tax credits in lieu of interest payments) or as direct subsidy bonds (bond issuers receive cash rebates from U.S. Treasury to subsidize their net interest payments). Both tax credit and direct payment bonds subsidize borrowing costs—most QECBs are expected to be issued as direct subsidy bonds due to the current lack of investor appetite for tax credit bonds.

QECB proceeds can be used to fund capital expenditures on a variety of projects including:

- Reducing energy consumption in publicly owned buildings
- Implementing green community programs (including loans, grants, or other repayment mechanisms)
- Developing rural capacity, specifically involving the production of electricity from renewable energy resources
- Supporting energy-related research facilities, research grants and research
- Implementing mass commuting and related facilities that reduce energy consumption and pollution
- Designing/running demonstration projects to promote the commercialization of energy-related technologies and processes
- Launching public education campaigns to promote energy efficiency

The U.S. Congress authorized \$3.2 billion of QECB issuance capacity, which has been allocated to states, local governments and tribal governments based on population. Processes for notifying state authorities of intention to issue QECBs (and deadlines for doing so) vary.

Transaction Points

A QECB issuance takes several months to structure, market, price and close. Qualified issuers should select eligible projects and consult their bond counsel for more information on the QECB opportunity.

Advantages	Disadvantages
<ul style="list-style-type: none"> + Provides substantial amount of cheap capital that can be infused into existing or new programs + Allows qualified state, local and tribal governments to issue debt at extremely low rates + Engages private investors 	<ul style="list-style-type: none"> — Issuance process requires an investment of time on the part of the issuer — A limited number of QECBs have been issued to date — A few programmatic questions remain as to applicability of certain federal requirements

<http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/qecb.html>

- On this page you'll find. . .
 - Webcasts
 - IRS and DOE guidance
 - LBNL case studies, including San Diego and Philadelphia
 - Memo from Energy Programs Consortium
 - DOE Clean Energy Finance Guide: Bonding Options & FAQ
 - Additional websites: NASEO and LBNL QECCB portals
- Office hours in August
- To request direct technical assistance, email:
TechnicalAssistanceProgram@ee.doe.gov

Thank for joining us!

We encourage you to:

- ✓ Visit the DOE QECBs page:
<http://www1.eere.energy.gov/wip/solutioncenter/financialproducts/qecb.html>
- ✓ Join us for office hours in August
- ✓ Request technical assistance:
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