QUALIFIED ENERGY CONSERVATION BONDS (QECBS)

EPC
ENERGY PROGRAMS CONSORTIUM

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Nothing contained in this issue paper should be construed or relied upon as legal advice. Instead, this issue paper is intended as a general introduction to the subject of the use of qualified energy conservation bonds to finance energy and mass transit projects, from which better informed requests for advice can be formulated.

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About Energy Programs Consortium (EPC)

The purpose of the Energy Programs Consortium (EPC) is to foster coordination and cooperation among state and federal agencies in the areas of energy policy and program development. EPC is a joint venture of the National Association of State Community Services Programs (NASCSP), representing the state weatherization and community service programs directors; the National Association of State Energy Officials (NASEO), representing the state energy policy directors; the National Association of State Regulatory Utility Commissioners (NARUC), representing the state public service commissioners; and the National Energy Assistance Directors' Association (NEADA), representing the state directors of the Low Income Home Energy Assistance Program.

EPC provides technical assistance to states to develop energy efficiency, water conservation, resilience and renewable finance programs. We examine options for states to issue tax credit bonds to support the financing of energy projects. We also coordinate efforts with the National Association of State Energy Officials (NASEO), the U.S. Department of Energy (DOE), the National Renewable Energy Laboratory (NREL) and Lawrence Berkeley National Laboratory (LBNL) to provide model documents and other QECB resources.[1]

If you are a state or local official exploring your options for energy program financing, EPC and NASEO can offer assistance by sharing state and local government officials' experiences, putting you in touch with issuers who may have dealt with similar issues, and providing comments and feedback. Conversely, if you have any experiences to share, we would very much like to hear from you so that other state and local governments may benefit from your work.

If you would like more information or if you have information on your state to feature, please contact Elizabeth Bellis at ebellis@energyprograms.org.

Acknowledgments

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[1] The NASEO QECB resource page (http://www.naseo.org/financing-resources-qecb) contains helpful documents, including examples of authorizing orders and legislation and bond documentation.

I. INTRODUCTION

Qualified Energy Conservation Bonds (QECBs) were authorized by Congress in the 2008 Energy Improvement and Extension Act. The original legislation authorized just $800 million of QECBs nationwide.

In the American Recovery and Reinvestment Act of 2009 (“ARRA”), Congress increased to $3.2 billion the funding for states, territories, large local governments, and tribal governments to issue QECBs to finance renewable energy and energy efficiency projects. The total allocation was divided among the state and territorial issuers according to population, as shown in Table 1A.

At least 187 projects, totaling just over $1 billion, have been funded to date. Projects have been financed with QECBs in at least 36 states. Some states, such as Kansas and Colorado have exhausted or nearly exhausted their allocations (with Kentucky, Nebraska, Montana, California and Alabama close behind)[2], while up to 15[3] states have yet to use any portion of their allocation. Approximately 34% of the $3.2 billion in allocations provided by ARRA are now known to have been issued.

QECBs are among many federal programs that have experienced sequestration cuts. See Section VI. Under current federal law, however, the authority to issue these bonds does not sunset.

II. QUALIFIED ENERGY CONSERVATION BOND PROCESS AND MECHANICS

As described above, the U.S. Congress allocated QECB volume to the states and territories[4] and indicated that the states “shall” suballocate a portion of these allocations to large local governments and municipalities (those with a population of 100,000 or more).[5] These counties, municipalities or tribes may issue bonds up to the amount of their respective suballocations or waive their suballocations and return them to the states. See Appendix I for a list of known suballocations.

A. Qualified Projects

QECBs may only be issued for qualified conservation purposes as defined in section 54D of the U.S. Internal Revenue Code. “Qualified conservation purposes” include capital expenditures:

1. To reduce energy consumption in publicly owned buildings by at least 20%
2. To implement green community programs (including the use of grants, loans, or other repayment mechanisms to implement such programs)[6]
3. For rural development (including the production of renewable energy)

[2] As of December 2014, percentages in these states are: Kansas, 99.98%; Colorado, 96.38%; Kentucky, 93.24%; Nebraska, 88.23%; Montana, 83.03%; California, 82.31%; and South Dakota, 78.81%.
[3] States not yet known to have issued are: Alaska, Delaware, District of Columbia, Florida, Hawaii, Idaho, Iowa, Mississippi, New Jersey, New Mexico, Oklahoma, Rhode Island, Vermont, West Virginia, and Wyoming. The five U.S. territories that received allocations (American Samoa, Guam, Northern Marianas, Puerto Rico and US Virgin Islands) have also yet to issue.
[4] As per IRS Notice 2009-29, the term state includes the District of Columbia and any possession of the United States.
[5] See IRS Notice 2009-29 (state-by-state allocations). The suballocation process has not been completed in some states. See Appendices for examples of state authorizing orders (Appendix C: State Executive Orders) and legislation (Appendix B: State QECB Legislation). Local governments often authorize issuances through a resolution or ordinance. See Appendix G: Local Resolutions. With respect to tribes, Notice 2009-29 provides: “Under § 54D(h), an Indian tribal government shall be treated as a large local government, except that (1) an Indian tribal government shall be treated as located within a State to the extent of so much of the population of such government as resides within the State, and (2) any bond issued by an Indian tribal government shall be treated as a qualified energy conservation bond only if issued as part of an issue the available project proceeds of which are used for purposes for which such Indian tribal government could issue bonds to which § 103(a) applies.”
[6] Note: If QECBs are used to provide funding for loans, grants, or other repayment mechanisms related to green community programs, they are not treated as private activity bonds. See 26 USC 54D(e)(4). To operate a green community program as an energy efficiency loan program, the issuing government might partner with a lender that in turn makes loans to homeowners. See Department of Energy Technical Assistance Program, “Taking Advantage of Qualified Energy Conservation Bonds” (September 22, 2010). Alternatively, the issuing government might use QECB proceeds to make loans directly to homeowners. See, for example, St. Louis County Saves, www.stlouiscountysaves.com.

4. For certain renewable energy facilities (such as wind, solar, and biomass)[7]
5. For certain mass commuting projects

To ensure that bonds are being used appropriately, QECB issuers should consider requesting an opinion of qualified and experienced bond counsel that the bonds will qualify as QECBs.

In assessing QECB questions, issuers should keep in mind that the IRS/Treasury, and not the Department of Energy, will audit bond issuances for compliance with section 54D. IRS/Treasury is not bound by Department of Energy interpretation of IRS and Treasury rules and regulations. **<u>A working relationship with experienced bond counsel is critical for potential issuers</u>.** For a list of counsel known to have advised on QECB issuances, see Appendix A.

B. Waivers: Returning Large Local Government Sub-Allocations to the State

States have used different approaches to the process by which large local governments return their sub-allocations to the states, including the following:

(1) Affirmative Waiver: A large local government must affirmatively waive its suballocations (generally by an act such as a resolution or motion of the county or city council) or the state does not recognize the waiver.

(2) Constructive Waiver: The state requests each large local government to notify the state by a certain date of its intent to utilize its suballocation, with failure to notify being treated as waiver.

See Appendix E for examples of waiver documentation jurisdictions have used.

Some outside bond counsel have questioned the validity of the latter approach and the issuances stemming from constructive waivers. In addition, some state counsel have questioned the authority of the state to require local government waivers. As such, affirmative waivers appear to be the more conservative approach. However, affirmative waivers are often more burdensome for states due to the difficulty of obtaining affirmative and proactive action by each large local government as a body. In addition, in some cases, local governments may be averse to "giving money back" even if there is no readily apparent use for the money at the present.

In our research we discovered a number of different approaches to putting waiver processes into place, including (1) simultaneous allocation and waiver authorization through Executive Order; (2) simultaneous allocation and waiver authorization through legislation; and (3) absence of any officially authorized waiver process.

At least thirteen states utilized Executive Orders to implement and authorize the allocation of QECBs.[8] Of the thirteen, two states, Idaho and Virginia, used an Executive Order to simultaneously authorize allocations and a constructive waiver process. Virginia issued two Executive Orders because the first expired before all of the state's allocations were utilized. We are not aware of any state that has used an Executive Order solely for the purpose of clawing QECB funds back to the state.

A plurality of states has an affirmative waiver process. 18 states either have no waiver process (or we have not been able to identify the waiver process) or do not provide information on QECBs at all.[9] There are still a few states that have not authorized the QECB funds and therefore have no QECB program in existence.[10]

Some states (including Nebraska, Tennessee, Texas and Washington) utilized a "Letter of Intent" (LOI) approach that might be properly characterized as either an affirmative or a constructive waiver depending in part on state law (See Appendix E for LOI examples from Texas and Washington.) In these states, the authorized party or agency sent a "Letter of Intent" to each large local government (LLG) asking whether the LLG was going to use its QECB allocation. If the LLG checked "no" on the Letter of Intent the QECB funds were allocated back to the state.

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[7] Other qualified purposes include geothermal, small irrigation power facilities, landfill gas facilities, trash to energy facilities, hydropower facilities, marine & hydrokinetic renewable energy facilities, and research activities, demonstration projects, and public education campaigns. See 26 USC 54D for exact language.
[8] Confirmed via State Agencies website or employees. See Appendix H for relevant agencies.
[9] Confirmed via State Agencies website or employees. See Appendix H for relevant agencies.
[10] See page 13 for discussion of state utilization and authorization.

Waiver Process - Number of States

Affirmative[11]	23
Constructive[12]	6
Letter of Intent[13]	4
No Waiver Process/Unknown[14]	18

C. Subsidy and Interest Rates

QECBs are similar to Build America Bonds (BABs) in that the interest on QECBs is taxable but the federal government offers a direct cash subsidy to the bond issuer to subsidize the interest costs. The subsidy on QECBs is (unless reduced by sequestration or similar federal action) twice as large as the standard BAB subsidy, making QECBs an extremely low-cost financing option for many issuers.

The QECB subsidy (70% of the Qualified Tax Credit Bond Rate) is generally correlated with Treasury yields and has historically ranged from 2.86% to 3.9%.[15] This corresponds to net financing costs for issuers of around 0.338% to 1.5%[16]. Actual market interest rates have ranged from a low of 0.28%% to a high of 5.375%, however, meaning that actual interest payments may, in some cases, be higher than the amount on which the subsidy is based.[17] Up-to-date Qualified Tax Credit Bond Rates (with respect to which QECB subsidies are set) can be found online at Treasury Direct's website, sponsored by the U.S. Treasury Bureau of the Public Debt (www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm). According to the Department of Energy Clean Energy Finance Guide, the rate is set so that the present value of principal payments equals 50% of the original principal amount.[18]

Issuers can choose to issue taxable bonds with a corresponding tax credit to the holders of the bonds or (as is more commonly done) elect to receive a direct cash payment from Treasury in lieu of the allowance of the tax credit to the holders.[19] Tax credit bonds, unlike direct pay bonds, do not appear to be subject to sequestration cuts but no written guidance confirming this is available as of December, 2014.

In the more popular direct-pay QECB, the issuer pays a taxable coupon to the investor and repays principal at the end of the term.[20] Treasury pays the issuer the lesser of the taxable coupon rate or 70% of the tax credit rate.[21]

[11] Alabama, Arizona, Arkansas, Connecticut, Georgia, Illinois, Iowa, Kentucky, Louisiana, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nevada, New Hampshire, New Jersey, New York, North Carolina, , Oregon, Pennsylvania, Utah, Wisconsin

[12] California, Colorado, Kansas, Idaho, South Carolina, Virginia

[13] Nebraska, Tennessee, Texas, Washington

[14] Alaska, Delaware, District of Columbia, Florida, Hawaii, Indiana, Maryland, Mississippi, Montana, New Mexico, North Dakota, Ohio, Oklahoma, Rhode Island, South Dakota, Vermont, West Virginia, Wyoming

[15] Wells Fargo Monthly QECB Activity Updates (June 2011–January 2013), www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm

[16] Wells Fargo Monthly QECB Activity Updates (June 2011–January 2013), www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm

[17] Bloomberg NYPL QECB search, October 2013.

[18] 13 See Chapter 2 in U.S. Department of Energy Clean Energy Finance Guide (December 2010), p. 11, www4.eere.energy.gov/wip/solutioncenter/finance_guide/content/chapter_documents?print=1. =

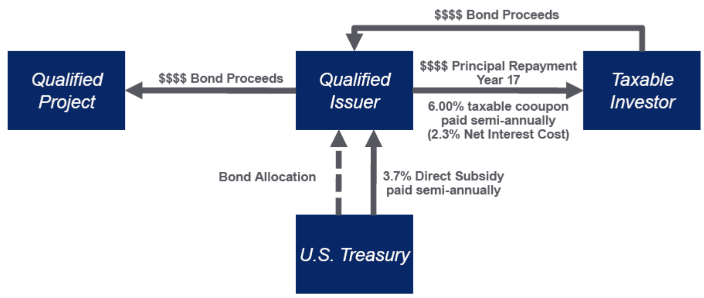
[19] H.R. 2847 Section 301.

[20] In conjunction, the issuer may make level annual payments into a fund known as a "sinking fund," for payment of principal. Sinking funds are invested at the permitted sinking fund yield established at pricing (not shown in the Department of Energy QECB Primer illustration below). See: U.S. Department of Energy QECB Primer, p. 12, http://www1.eere.energy.gov/wip/pdfs/qecb_creb_primer.pdf.

[21] See IRS Notice 2010-35, p. 5

NET INTEREST COST EXAMPLE FROM THE DEPARTMENT OF ENERGY QECB PRIMER

6.00%----Taxable rate
3.70%----Minus Direct Subsidy (5.29% tax credit rate x 70% subsidy)
2.30%----Equals Net Interest Cost (Taxable Rate-Direct Subsidy)



D. Maturity and Repayment Structures

QECBs are fairly long-term financing options. The maximum amount of time the bonds can be outstanding ("maturity") is set by the government periodically and has historically ranged from 12.5 to 26 years. [22]

Up-to-date maturities can be found online at Treasury Direct's website, sponsored by the U.S. Treasury Bureau of the Public Debt (www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm).

Issuers can choose to issue bonds of any maturity ***up to*** the maximum maturity.

E. Call Provisions

QECBs may be issued with one or more "call provisions." Call provisions give the bond issuer the right to purchase (or "call") part or all of a bond issue at specified times. Sometimes the bonds must be recalled if certain events occur ("mandatory redemption"); other provisions allow the issuer to decide whether to repurchase the bonds ("optional redemption"). If the issuer may recall the bonds if certain unusual or "extraordinary" events occur, the provision is known as an "extraordinary optional redemption." In some cases, investors may demand a premium to be paid if the issuer calls the bonds early or before a specified date. The Municipal Securities Rulemaking Board (MSRB) provides a number of examples of redemption provisions that may be of interest to potential issuers.[23]

In 2014, EPC reviewed the subset of known QECB issuances for which we were able to obtain Official Statements and has identified two call provisions common to this type of bonds: (1) repurchase due to failure to expend proceeds and (2) repurchase due to failure to receive Treasury subsidy payments.

Unexpended Proceeds Provision: These provisions give the issuer the right to redeem the bonds if bond proceeds remain unexpended by a specific date (in this case, generally the date by which they must be used for the bonds to retain eligibility for subsidy payments). Some examples of this type of provision are Allegheny County, Pennsylvania, Itasca County, Minnesota, and Yakima County, Washington.[24] That is, the issuer will repurchase the bonds if proceeds are not

[22] Wells Fargo Monthly QECB Activity Updates (June 2011-January 2013); www.treasurydirect.gov/GA-SL/SLGS/selectQTCDate.htm.

[23] "Optional redemptions often can be exercised only on or after a specified date, typically beginning approximately ten years after the issue date. Some types of mandatory redemptions occur either on a scheduled basis (made in specified amounts or in amounts then on deposit in the sinking fund) or whenever a specified amount of money is available in the sinking fund ("sinking fund redemptions"). An extraordinary redemption may be triggered by, among other things, bond proceeds remaining unexpended by a specified date (an "unexpended proceeds redemption"), a determination that interest on the bonds is taxable (a "tax call"), a change in use of a project financed with bond proceeds that would cause interest on the bonds to become taxable (a "change in use call"), a failure of the issuer to appropriate funds needed to pay debt service on lease rental bonds or certificates of participation that are subject to appropriation (an "appropriation or non-appropriation call") or the destruction of the facilities from which the bonds are payable (a "calamity or catastrophe call")." Source: http://www.msrb.org/Glossary/Definition/REDEMPTION-PROVISIONS.aspx.

[24] See Appendix G: Call Provisions

spent on qualifying projects within the time required by the Internal Revenue Service (IRS), usually three years under current law. Note that once issued and repurchased, an allocation can not be re-issued for another use and is effectively "lost". As such, issuers may wish to consider whether their project will be able to expend proceeds within the required time frames.

Revocation of Subsidy Provision. These provisions generally allow for repurchase due to events such as a change in law that results in subsidy revocation and exclude cases in which the revocation is due to the issuer's action or failure to act. Examples include Alma Center, Wisconsin, Yakima County, Washington, and Itasca County, Minnesota.[25]

In addition to these more common call provisions, some QECB issuers obtain the right to repurchase the bonds for any reason after a certain number of years. For example, Yakima, Washington, which issued $2.5 million in QECBs in September 2010, can repurchase its bonds at "par[26] plus accrued interest" after 10 years.[27]

F. Securing QECBs

When a municipality issues QECBs, it promises to make the principal and interest payments on the bond to bondholders. Sometimes an issuer secures its promise with a specific and limited revenue stream ("revenue bonds") and at other times it secures its promise more broadly as a general obligation backed by the full faith and credit of the issuer ("general obligation bonds"). In some cases, the issuer may offer specific equipment or property as collateral to secure its promise to pay the bondholders. Issuers may also provide for a debt service reserve fund to secure the bonds.

In 2014, EPC was able to identify the apparent bond security for 81 issuances for which Official Statements were publicly available (out of 187 known issuances). Of the 81 issuances for which the type of security were known, 47 (or 58%) appeared to be general obligation issuances.[28]

G. Nuts and Bolts

- QECB issuances often take several months to structure, market, price, and close.
- Once QECBs are issued, proceeds must be spent (or used to redeem bonds) within three years of issuance. U.S. Treasury can in theory extend the spending period if it finds reasonable cause to do so.[29] EPC is not aware of the IRS having done so for any issuance to date.
- Issuers must also have a binding commitment with a third party to spend at least 10% of the proceeds within six months of issuance.[30]
- Issuers can use up to 2% of the bond proceeds to finance costs of issuance.[31]
- Generally, QECBs are subject to rules that apply to tax-exempt bonds.[32]
- State Energy Program (SEP) and Energy Efficiency and Conservation Block Grant (EECBG) funds can be used to support QECB issuances within the limitations set by the Department of Energy. Department of Energy Guidance on the use of QECBs in conjunction with SEP and EECBG funds was provided in July 2010.[33] Additional tax rules may further restrict the use of outside funds in conjunction with QECBs and may result in the need for

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[25] See Appendix G: Call Provisions
[26] Par value is the value of a security expressed as a specific dollar amount marked on the face of the security, or the amount of money due at maturity. This is different from face value, which is the value (i.e., principal or maturity value) of a security appearing on the face of the instrument. Face value is also known as principal value. Source:
[27] The 2010B Bonds are subject to redemption, at the option of the County as a whole or in part, on any date on or after December 1, 2020 at a price of par plus accrued interest to the date of redemption. Yakima County, Washington Official Statement Dated September 22, 2010 for Series 2010 B QECBs Due June 1, 2027, p. 10.
[28] General obligation issuances include: Champaign County (2), Waterbury City, King County, Yakima County, Washington County Housing and Redevelopment Authority, Deerfield, Louisville-Jefferson County, Grant County, Itasca County, Fayette County, York County, Mount Horeb School District, Osseo Fairchild School District, Hartford No. 1 School District, Western Wisconsin Technical College (3), Jefferson School District, Alma-Hunter-Merrillan School District, Wyandotte County, State of Maryland, Belchertown, Lowell, ELY School District, Rochester City, Mandan School District, Allegheny County, Davison County, Menasha School District, Pleasant Prairie Village, Billings School District, Billings School District High School, Nashville and Davidson County, Thurston County, Rapid City, Spotsylvania County, and Goodhue County.
[29] See 26 USC 54A(d)(2)(a); see also IRS Notice 2010-35, available at www.irs.gov/pub/irs-drop/n-10-35.pdf.
[30] See 26 USC 54A(d)(2)(a); see also IRS Notice 2010-35, available at www.irs.gov/pub/irs-drop/n-10-35.pdf.
[31] See 26 USC 54A(e)(4).
[32] See IRS Notice 2010-35, available at www.irs.gov/pub/irs-drop/n-10-35.pdf.
[33] For EECBG and QECB guidance, please see "Guidance for Energy Efficiency and Conservation Block Grant Grantees on Qualified Energy Conservation Bonds and New Clean Renewable Energy Bonds," available at www1.eere.energy.gov/wip/pdfs/final_eecbg_guidance_qecbs_crebs.pdf, for SEP and QECB guidance, please see " Guidance for State Energy Program Grantees on Qualified Energy Conservation Bonds and New Clean Renewable Energy Bonds, available at http://www1.eere.energy.gov/wip/pdfs/final_sep_guidance_qecbs_crebs.pdf.

careful structuring. Jurisdictions interested in leveraging funds should consult with their bond counsel. In addition, provisions such as HIPA, NEPA, Davis Bacon, and Buy American may apply differently to issuances utilizing EECBG and SEP funds than those that do not.

- The governing body may need to make a formal, irrevocable election to designate the bonds as QECBs. The authorizing document for the issuance should have a section that generally describes provisions of the QECB, including the discussion of the direct subsidy payment (if applicable).[34]
- At least 30 days prior to the first interest payment date, the issuing authority must file Form 8038-TC with the US Treasury, along with the QECB debt service schedule.[35]
- At least 45 days prior to each corresponding interest payment date after the first payment date, Form 8038-CP must be filed. These forms are necessary to receive the subsidy.[36]
- QECBs are subject to sequestration. See Section IV B.

III. CASE STUDIES

Mass Commuting -- Spotsylvania, Virginia

Spotsylvania County issued $1.2 million in QECBs on July 19, 2012. Spotsylvania County is using the proceeds (along with $19.2m from a variety of sources including federal and state funds and other general obligation bonds) to construct and equip a passenger train station and 1,000 space parking area in the County along the Virginia Railway Express (VRE) rail line.

This project coincides with a VRE rail project through which commuter rail service is being extended from the neighboring city of Fredericksburg into Spotsylvania County. This will be Spotsylvania's first commuter rail station. About 900 Spotsylvania citizens are estimated to be VRE riders, but these riders had previously needed to drive a significant distance to reach the nearest VRE station in Fredericksburg.

Spotsylvania County estimates that up to 50 percent of the 900 drivers travelling the route from the existing VRE terminus by car will extend their VRE trip rather than drive this route when the station and the parking area are completed. The project experienced some delays and is now expected to be completed in June 2015.

The County, which was already familiar with the structure of QECBs because of its experience with BABs, chose to issue QECBs as part of the bond package for the deal because the debt service costs were significantly lower with QECBs than with tax exempt general obligation bonds. The County estimates the savings over the life of the bonds to be around $180,000.

Municipal Energy Efficiency -- Waterbury, Connecticut

The City of Waterbury, Connecticut, issued $4.7 million of general obligation QECBs[37] on August 12, 2010 to make heating and air-conditioning improvements and replace windows in the Waterbury city hall and library.[38] These bonds were issued as part of a larger issuance: Waterbury also issued tax exempt bonds, Recovery Zone Economic Development (RZED) bonds,[39] and Build America Bonds (BABs), for a total issuance of $45 million. The bonds mature in 2027 and may be redeemed by the city (at its option) on or after September 1, 2010.

Multifamily Energy Efficiency -- Boulder, Colorado

One of the first QECB issuances in the United States was the Boulder Housing Partners (BHP) August 25, 2010, issuance of $1.44 million for energy efficiency improvements to public housing projects. BHP used the bond proceeds for an Energy Performance Contract to do weatherization and other energy-reduction improvements on BHP's eight public

[34] See Department of Energy Technical Assistance Program "Taking Advantage of Qualified Energy Conservation Bonds" (September 22, 2010).
[35] See: www.irs.gov/pub/irs-pdf/i8038tc.pdf.
[36] See: www.irs.gov/pub/irs-pdf/i8038cp.pdf.
[37] This QECB issuance is a Tax Credit issuance.
[38] See www.ctcda.com/Financing/Bond_Financing/QUALIFIED_ENERGY_CONSERVATION_BONDS/.
[39] The BABs and RZEDs expired as of December 31, 2010. See www.irs.gov/pub/irs-drop/n-09-26.pdf and 26 USC 54AA.

housing sites, work that is expected to reduce carbon emissions in BHP's housing by 6,915 metric tons over the life of the project.[40] These QECBs were issued jointly with $120,000 of BABs, which were needed to finance planned water-conservation improvements after the IRS refused to rule that such improvements would count as energy reducing under the 20% test.[41]

The timeline for BHP's QECB issuance was as follows: BHP applied for the QECB allocation on November 16, 2009, and received its allocation from the state on February 11, 2010. In May 2010, it issued a Request for Proposals for bond counsel. In August 2010, BHP issued $1.45 million of 16-year QECBs to finance the improvements as well as issuance and bond counsel costs associated with the offering. BHP experienced some difficulty placing the bonds due to the small size of the offering. However, BHP's QECBs were successfully sold in a private placement to Bank of America. Construction commenced in September 2010 and is now complete. The energy savings realized, combined with the U.S. Department of Housing and Urban Development subsidy, cover the interest and principal payments on the bonds. BHP estimated that traditional financing would have cost 2 percentage points more than was achieved with this offering.[42]

Renewables -- Los Angeles, California

The Department of Water and Power of the City of Los Angeles (LADWP) used its QECB allocation for three renewable energy facilities: the Pine Tree Wind Turbine Expansion, the Pine Tree Solar Project, and the Adelanto Solar Project.

LADWP issued $131 million of revenue bond QECBs and $8 million of Clean Renewable Energy Bonds (CREBs) on August 17, 2010. These bonds mature in 2027 and are subject to redemption at the Department's option prior to maturity. The proceeds were used to (1) expand an existing facility, the Pine Tree Wind Turbine facility, with the addition of ten 1.5 MW wind turbines; (2) build a new photovoltaic generator targeted at 10 MW with an output of 34.5 kv (the Pine Tree Solar Project); and (3) build another 10 MW photovoltaic generator with an output of 4.16 kv and generating 20 Gwh per year (the Adelanto Solar Project).[43] LADWP installed, owns, and operates the Adelanto system.[44]

The Adelanto system features several innovative design elements, including interconnection with a critical bulk-grid substation as well as a more efficient, 1,000-volt solar power system.[45] The system also incorporates ground-mounted systems--solar panels held in place by racks or frames that are attached to ground-based mounting supports--to reduce site-preparation costs.[46] According to Northwest Community Energy, ground-mounted systems are best suited for utility-scale power or for an application where roof space is not available, and they can be oriented to capture more sunlight than rooftop solar panels. [47]

Renewables -- Washington State

In Washington, the owners of Swauk Creek Ranch, a privately owned land reserve in Kittitas County, partnered with Seattle-based energy and facility services firm McKinstry to develop and construct five wind turbines, which were completed in early 2013. The wind turbines, five Gamesa 850 kW, G58 model wind turbines are projected to deliver 4.25 megawatts of electricity for consumption in Kittitas County. This is enough to power more than 1,000 homes annually.[48] The turbines will connect to the existing power grid, thereby not requiring new, expensive transmission lines. The project

[40] See http://stateenergyreport.com/2011/05/05/using-qecbs-for-multifamily-housing-upgrades-a-case-study/
-a-case-study/.
[41] See www.boulderhousing.org/sites/default/files/Final%202010%20Audit%20report%20BHP.pdf and http://stateenergyreport.com/2011/05/05/using-qecbs-for-multifamily-housing-upgrades-a-case-study/

[42] See www.boulderhousing.org/sites/default/files/Final%202010%20Audit%20report%20BHP.pdf and http://stateenergyreport.com/2011/05/05/using-qecbs-for-multifamily-housing-upgrades-a-case-study/
[43] Seehttps://www.ladwp.com/ladwp/faces/ladwp/aboutus/a-power/a-p-projects/aboutus-projects-adelanto?_adf.ctrl-state=yd6e86crz_4&_afrLoop=379084052200628&_afrWindowMode=0&_afrWindowId=qXKWgDe4#%40%3F_afrWindowId%3DqXKWgDe4%26_afrLoop%3D379084052200628%26_afrWindowMode%3D0%26_adf.ctrl-state%3Dc7x7wmzkm_17. Also see the official statement.
[44] See http://www.solarworld-usa.com/news-and-resources/news/ladwp-solar-project.aspx.
[45] See www.ladwpnews.com/go/doc/1475/986259/LADWP-and-SolarWorld-Partner-to-Develop-11-6-Megawatt-Solar-Power-System-for-Los-Angeles.
[46] See www.ladwpnews.com/go/doc/1475/986259/LADWP-and-SolarWorld-Partner-to-Develop-11-6-Megawatt-Solar-Power-System-for-Los-Angeles.
[47] See http://nwcommunityenergy.org/solar/siting-and-system-design/pv-system-design and http://www.getsolar.com/residential_Solar-Roof-vs-Ground-Installation.php.
[48] http://www.nawindpower.com/e107_plugins/content/content.php?content.11302

was financed in part through a $9 million allocation of QECBs that were issued by the Washington State Housing Finance Commission[49] – marking a first in the United States for a wind project of its kind.

University Improvements -- Louisville, KY

In 2006, the Kentucky general assembly passed HB 380, which authorized energy performance contracts in the state. In 2007, the University of Louisville completed its first project, under a master equipment lease structure with Siemens. In 2010, Phase II of the project was approved: improvements to the health science campus. Phase II will make improvements to 17 educational and general buildings. The estimated savings are $4,930 per day, totaling $1.8 million annually.[50] On December 15, 2010, the University of Louisville issued $20,942,000 in QECBs. It combined this funding with BABs to finance $25 million for these improvements. The improvements consisted of lighting retrofits, HVAC system replacement, building controls, motors, belts, water conservation, commissioning, and training.[51]

The University of Louisville issued BABs with an interest cost of 3.28% and QECBs with an interest cost of 1.64%. The term of the bonds was 17 years, and a QECB sinking fund is being utilized.[52]

Green Community Programs -- Commercial PACE -- Boulder, Colorado

In November 2010, Boulder County issued $1.515 million in QECBs for a Property Assessed Clean Energy (PACE) commercial program. PACE financing is an approach by which a municipality can fund commercial and/or residential energy improvements; those improvements are repaid through a yearly property assessment (rather than by traditional unsecured loan).[53]

Boulder County negotiated a private placement of the bonds with UMB Bank. The bonds have one maturity date and one interest rate.[54] These bonds were issued in three parts: $115,000 for 5-year loan terms, $1.4 million for 10-year loan terms, and $30,000 in non-QECBs.[55] Interest rates to consumers are below 3% for both the 5-year and 10-year term options.[56]

Commercial entities interested in the PACE commercial program had to submit project applications by August 2010.[57] Eligible entities included non-profits, apartment buildings, small manufacturing facilities, and multifamily, low-income, and/or elderly housing complexes. The county then pre-qualified and approved all of the improvements that would be funded before the QECBs were issued.[58] By requiring that applications be submitted prior to bond issuance, Boulder County could determine exactly how large a bond issuance it needed; the process also gave the county more confidence about bond repayment.[59]

Twenty-nine projects had been approved as of March 23, 2011 and the program is now fully subscribed. The average project size is $51,000. Fifty-five percent of the measures known funded through the Boulder PACE QECB proceeds are energy efficiency improvements: HVAC units (30%), cool roofs (11%), insulation of doors and/or windows (8%), and other insulation (6%). Sixteen percent are renewable energy improvements: solar (11%) and solar hot water (5%).

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[49] http://www.wshfc.org/admin/releases/2013.03.27SwaukWind.pdf
[50] U.S. Department of Energy, "QECB Updates from the Field" Webinar, http://www1.eere.energy.gov/wip/solutioncenter/media/Qualified%20Energy%20Conservation%20Bonds-QECBs-Updates%20From%20the%20Field%20Slides.pptx .
[51] See U.S. Department of Energy Technical Assistance Program, "Taking Advantage of Qualified Energy Conservation Bonds" (September 22, 2010).
[52] U.S. Department of Energy, "QECB Updates from the Field" Webinar, http://www1.eere.energy.gov/wip/solutioncenter/media/Qualified%20Energy%20Conservation%20Bonds-QECBs-Updates%20From%20the%20Field%20Slides.pptx.
[53] The U.S. Department of Energy has indicated that it considers PACE programs green community programs. However, issuers should note that the IRS has not provided any guidance or confirmation to this effect, and it is the IRS/Treasury that will perform audits and determine eligibility for the QECB subsidy payments.
[54] See University of North Carolina at Chapel Hill Environmental Finance Center "Qualified Energy Conservation Bonds: Potential for Energy Loan Programs Case Analysis" Case Analysis (January 2011), p. 3, http://www.efc.unc.edu/projects/EnergyFinance/QECBMemo_BoulderCounty.pdf.
[55] The $30,000 issuance helped cover issuance costs.
[56] See Renewable Funding, Clinton Climate Initiative, and Lawrence Berkeley National Laboratory, "PACE Financing: Update on Commercial Programs" Policy Brief (March 2011), p. 6, http://emp.lbl.gov/sites/all/files/POLICY%20BRIEF%20pace%20financing.pdf .
[57] See University of North Carolina at Chapel Hill Environmental Finance Center, "Qualified Energy Conservation Bonds: Potential for Energy Loan Programs" Case Analysis (January 2011), p. 3.
[58] See Glenn Barnes, "Using Qualified Energy Conservation Bonds to Promote Energy Efficiency in the Community" Blog Post (September 27, 2011), http://sogweb.sog.unc.edu/blogs/ced/?p=3404.
[59] See University of North Carolina at Chapel Hill Environmental Finance Center, "Qualified Energy Conservation Bonds: Potential for Energy Loan Programs" Case Analysis (January 2011), p. 3.

Twenty-nine percent of the projects are other measures, such as lighting, retro commissioning,[60] and energy managements systems.[61]

Green Community Programs--Residential Energy Efficiency Loans -- St. Louis, Missouri

In April 2011, St. Louis County issued $10.3 million in QECBs, in addition to EECBG funds, for a residential energy efficiency loan program. The program provides loans in amounts ranging from $2,500 to $15,000 with terms up to 10 year at a rate of 3.5%. Only owner-occupied, single-family homes are eligible, and homeowners must have credit scores of 660+ with a maximum debt-to-income ratio (DTI) of 45%.[62] In January 2013, the program was expanded to include commercial loans. These loans can be used to upgrade lighting, HVAC, and weatherization. The interest rates are fixed at 3.5% and loans ranging from $50,000-$250,000.

The county had originally planned to create a PACE residential program, but had to choose a different approach after the Federal Housing Finance Agency announced its decision on PACE in the summer of 2010. On May 5, 2010, Fannie Mae and Freddie Mac alerted their seller-servicers that programs with first liens run contrary to the Fannie Mae-Freddie Mac Uniform Security Instrument. Those lender letters remain in effect.[63]

The St. Louis program is anticipated to fund 1,400 home energy retrofits, which is 5 times more than could have been retrofitted if the county had used its EECBG funds for a rebate program. As of December, 2014 262 retrofits have been completed under St. Louis SAVES. The EECBG funds helped cover issuance and program administrative costs. [64] The QECBs are secured by the county's annual appropriation pledge,[65] with the designation of loan proceeds as the source of repayment.[66] The issuance was for serial bonds[67] with a final maturity of 15 years, with some bonds starting to mature annually in 2013.[68]

Green Community Programs -- Streetlight Programs --San Diego, CA and Richmond, CA

In 2011, San Diego used their $13.1M allocation to replace the cities HPS and LPs streetlight with induction lighting – which have an expected lifetime of 20 years and typical energy savings of 40% per-light. San Diego determined that the Broad Spectrum Street Light Conversion Program (BSSLCP) qualified for QECB use under the Green Community Program designation since it benefited the whole community of San Diego. The use of QECB funds allowed the program to replace a total of 39,000 streetlights (approximately 60% of the city's lights).[69]

In 2010, the City of Richmond, CA issued their $1.05M QECB allocation to fund energy efficiency project on city facilities and street lighting. Over $500,000 in QECBs was used for street lighting upgrades – they replaced incandescent

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[60] Retro commissioning is a systematic process for identifying less-than-optimal performance in a facility's existing equipment and control systems and making necessary repairs or enhancements to save energy and cost Source: www.pge.com/mybusiness/energysavingsrebates/rebatesincentives/retrocommissioning/.

[61] An energy-management system can be refer to a computer system which is designed specifically for the automated control and monitoring of the heating, ventilation and lighting needs of a building or group of buildings such as university campuses, office buildings or factories.
Source: www.nationalgridus.com/niagaramohawk/non_html/ee_conference/EnergyMgt.pdf.

[62] See Lawrence Berkeley National Laboratory, "Using Qualified Energy Conservation Bonds (QECBs) to Fund a Residential Energy Efficiency Loan Program: Case Study on Saint Louis County, MO" Clean Energy Financing Policy Brief (June 2011), p. 3, http://emp.lbl.gov/sites/all/files/POLICY%20BRIEF%20QECB%27s%20MO.pdf .

[63] See: www.fhfa.gov/webfiles/15884/PACESTMT7610.pdf.

[64] See Lawrence Berkeley National Laboratory, "Using Qualified Energy Conservation Bonds (QECBs) to Fund a Residential Energy Efficiency Loan Program: Case Study on Saint Louis County, MO" Clean Energy Financing Policy Brief, (June 2011), pp. 3–4.

[65] According to the MSRB, an annual appropriation pledge is typically found in the bond resolution and/or trust indenture for lease revenue bonds or securing a certificate of participation financing. It commits the issuer to make lease payments or periodic debt service payments to the extent that monies are budgeted and appropriated on an annual basis by the issuer's or obligor's governing body. The governing body is not legally obligated to make such appropriation in any year. An annual appropriation pledge is generally used only with projects that are considered to be essential to the issuer's operations so the governing body is likely to appropriate the money needed to pay debt service. An annual appropriations pledge can allow an issuer to undertake a long-term certificate of participation or other lease revenue obligation financing without technically incurring debt. Such obligations are not considered debt in most states and thus are not subject to debt limitations and/or referendum requirements. A certificate of participation is an instrument evidencing a pro rata share in a specific pledged revenue stream, usually lease payments by the issuer that are subject to annual appropriation. The certificate entitles the holder to receive a share, or participation, in the lease payments from a particular project. Source: http://www.msrb.org/glossary/definition/certificate-of-participation-_cop_.aspx and http://www.msrb.org/Glossary/Definition/ANNUAL-APPROPRIATION-PLEDGE.aspx

[66] St. Louis County, Missouri Official Statement Dated May 18, 2011 for Series 2011 A QECBs Due December 1, 2025, p. 14.

[67] Serial bonds mature in consecutive years. See: http://www.msrb.org/glossary/definition/serial-bonds.aspx.

[68] St. Louis County, Missouri Official Statement Dated May 18, 2011 for Series 2011 A QECBs Due December 1, 2025, p. 2.

[69] http://financing.lbl.gov/reports/street-lighting-qecb.pdf

street lighting with more efficient LED fixtures. These replacements are estimated to have an average energy savings of 45%, these energy savings combined with reduced maintenance costs should lead to significant savings.[70]

Green Community Programs -- North Carolina Agriculture Authority

In 2012 the North Carolina Agricultural Finance Authority ("the Authority") established a green community program to promote the development of renewable energy resources on agricultural land in North Carolina. Under the program, developers with a project that meets the necessary criteria apply for loans funded by QECBs issued by the Authority.

A wide variety of projects are eligible for the program including wind energy facilities, solar facilities, distributed generation initiatives, research facilities to support research into fossil fuel alternatives and demonstration projects that are designed to promote the commercialization of clean energy sources (such as the conversion of agricultural waste for use in the production of fuel.) In addition to meeting one of these criteria, the project much also have a significant nexus to agriculture.[71] Such a nexus can be demonstrated by locating the project on land that is leased from an owner who is also using the land for agricultural purposes, or the pursuit of some form of agriculture on the same land, or use of agricultural products or by-products as part of green energy production.

The program is open to any person who meets these qualifications. The Authority issues QECBs from the State of North Carolina's allocation on behalf of the project borrower, the Authority acts as a conduit issuer and loans the QECB issuance proceeds to the project borrower. Under this system, the project borrower is the one responsible for the repayment of the funds and these funds are not considered a debt of the state. The Authority charges each participant a fee equal to 1% of the aggregate amount of the loan closed and the fee may be paid from loan proceeds. The participant must also pay the Authority's fees and out-of-pocket expenses relating to the bonds and the project.

As of December 2014, 4 projects, all for solar installations on agricultural land, have been financed under this program.[72] The total value of QECBs issued under the program to date is $7,492,702. The bonds were all sold in private placements.

Green Community Programs -- NYSERDA -- Green Jobs Green New York

In August 2013,The New York State Energy Research and Development Authority (NYSERDA) issued $24.3 million of QECBs for the Green Jobs – Green New York (GJGNY) residential energy efficiency loan program. The bond proceeds were used to replenish the $42.5 million GJGNY revolving loan fund that began with the GJGNY Act of 2009, a statewide initiative to promote energy efficiency and the installation of clean technologies to reduce energy costs and greenhouse gas emissions, support sustainable community development and create opportunities for green jobs.

With no history as a bond issuer, NYSERDA struggled to achieve a rating that would enable the QECBs to be sold at an interest rate that made the transaction worthwhile. To achieve a more favorable rating, NYSERDA was able to obtain a guarantee from the New York State Environmental Facilities Corporation (EFC) through its State Revolving Fund (SRF) program. This guarantee enabled the bonds to be rated AAA/Aaa by Standard & Poor's and Moody's.

EFC manages the largest SRF in the nation, with nearly $13 billion in assets, and provides AAA-rated financial assistance to local governments and public entities to finance clean water and drinking water projects. Following discussions between NYSERDA and EFC, EFC submitted a letter to the U.S. Environmental Protection Agency (EPA) to ask for concurrence that energy efficiency financing is an eligible program purpose under the Clean Water SRF program. The EPA agreed that the bonds did qualify for financial assistance under the Clean Water SRF because residential energy efficiency improvements lead to reductions in fossil fuel combustion and related reductions in air pollutants being emitted and deposited into New York State's water bodies. This transaction was the first in the nation to utilize the SRF to support initiatives that address atmospheric depositions that impact public health and pollute critically-important water bodies.

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[70] http://financing.lbl.gov/reports/street-lighting-qecb.pdf

[71] Defined for this purpose as "the commercial production, storage, processing, marketing, distribution or export of any agronomic, floricultural, horticultural, viticultural, silvicultural or aquacultural crop including, but not limited to, farm products, livestock and livestock products, poultry and poultry products, milk and dairy products, fruit and other horticultural products, and seafood and aquacultural products

[72] The projects are: Avery Solar, 3/20/12, $1,977,702; Mayberry Solar, 5/15/12, $2,215,000; Sandy Cross Solar, 8/29/12, $1,200,000; and Progress Solar 1, 2/6/13, $2,100,000

The QECBs were sold with an average term of approximately 6.8 years and an average interest rate of approximately 3.21%. The net interest cost after QECB interest subsidies is anticipated at approximately 0.48 percent. This low cost of financing allowed NYSERDA to offer GJGNY loans to consumers at low interest rates (2.49%-3.99%) and allowed longer loan terms of up to 15 years. The bonds were secured with loan repayments from loans with an aggregate principal of $29.2 million, of which about 35% were On-Bill Recovery loans. The pledged loans resulted in a projected debt service coverage of 126%. About 35% of the bonds were sold to funds with social responsibility mandates and the deal went on to be named *The Bond Buyer* 2013 Small Issuer Deal of the Year.

IV. UTILIZATION TRENDS

Note: Although the IRS collects information on QECB issuances on Form 8038-TC, it has declined requests to disclose this information publicly. As such, it is not possible to ascertain definitively the exact number and quantity of QECB issuances to date. The information in this section has been gathered from various sources, including IRS Notice 2009-29, Bloomberg, the Municipal Securities Rulemaking Board, the U.S. Department of Energy, Lawrence Berkeley National Laboratory, Wells Fargo, state and local issuer websites, and state and local energy, development, finance, and commerce officials who have graciously spoken to or corresponded with EPC and/or NASEO regarding their issuance statuses. EPC's inventory and knowledge of QECB issuances is likely incomplete. ***We welcome and are grateful for your feedback regarding any issuances we have missed or errors contained in this paper.***

Eligible issuers of QECBs include states,[73] state agencies[74] and finance authorities,[75] territories, municipalities,[76] municipal utilities,[77] municipal agencies,[78] counties[79], tribes, school districts,[80] and higher education institutions.[81] See Tables 1C and 1D.

The most common use of QECBs to date, as of December 2014, has been capital improvements to reduce energy consumption in publicly owned buildings by at least 20%. (See Table 1B at the end of this paper). For example, such issuances make up almost all known issuances in the Northwest and Southeast regions[82] and around 70% of total known QECB issuances nationwide. A large number of bonds issued for this purpose are being used for school and university projects. (See Graph 6 at the end of this paper).

Although energy efficiency improvements are the most popular use of QECBs overall, investments in renewables are particularly popular in the Southwest. Of the QECBs issued in the Southwest**,** 67% have been used for renewable energy facilities, such as installing solar panels at public schools.

At least 16 issuances nationwide to date are known to have been used for, or issued under, green community programs: St. Louis, MO; Boulder, CO; San Diego, CA; Richmond, CA; Las Vegas, NV; GreenFinanceSF, CA; South Carolina SAVES, SC; Missouri Clean Energy District, MO; NYSERDA,NY; North Carolina Agricultural Finance Authority, NC (4 issuances), Kitsap County, WA and Roaring Fork Transportation Authority, CO (2 issuances). Green Community Programs typically issue QECBs in one of two ways. Some are structured so that the program is established and QECBs issued to fund it. The program then administers the funds for the stated purpose (e.g. San Diego streetlight improvements, St. Louis Saves residential energy efficiency loan program). The second option is that a Green Community Program is set up in conjunction with a state agency that is authorized to issue private activity bonds. QECBs are then issued on a per project basis with each separate project applying to the GCP for financing. For qualifying projects, the GCP works in conjunction with the relevant state agency and the agency acts as a conduit issuer, issuing QECBs and lending the

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[73] For example, in July 2011 the state of Maryland issued $6.5 million of QECBs for improvements to public schools (direct issuance by state).
[74] The Commonwealth of Pennsylvania issued $15.8 million for retrofit projects for corrections facilities.
[75] For example, the Kansas Development Finance Authority issued $17.8 million for university projects.
[76] The city of Waterbury, Connecticut issued $4.7 million for city facilities retrofit projects (direct issuance by city).
[77] The Los Angeles Department of Water and Power issued $131 million for solar and wind projects.
[78] In Minnesota, the Washington County Housing and Redevelopment Authority issued $2.375 million for energy efficiency improvements.
[79] Sonoma County issued $1,977,500 for renewable generation
[80] The Menasha School District in Wisconsin issued $1.69 million for school improvements.
[81] The University of Colorado issued $4.375 million for university projects.
[82] States in each region (as per EPC): Central: Colorado, Kansas, Montana, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, Wyoming. Midwest: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin. Northeast: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Northwest: Alaska, Hawaii, Idaho, Oregon, Washington. Southeast: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia. Southwest: Arizona, California, Nevada, New Mexico, Utah.

proceeds to the project.[83] Examples of this type of structure include North Carolina Agricultural Authority GCP and Kitsap County, WA (with Washington State Housing Finance Authority acting as conduit issuer).

Known public education campaign issuances are rare, but one example is Western Wisconsin Technical College's July 2010 issuance. Similarly, the Spotsylvania, VA rail station and parking lot issuance in July 2012 is the only known mass commuting issuance to date. As of December 2014, EPC is not aware of any QECB issuances used for rural development or research or demonstration projects.

Private Activity Bond Issuances

At least eight QECB issuances to date have been private activity bond issuances, including three in Massachusetts,[84] one in Georgia, one in Lawrence, Kansas,[85] one in Washington state and two in Colorado.

Although Official Statements are not available to confirm, we have learned through interviews with Massachusetts that a state agency, MassDevelopment, issued the bonds on behalf of each private entity.[86] The Fairhaven Wind project issued approximately $3 million in QECBs in November 2011 and used the proceeds to build two 1.5 MW wind turbines. The Scituate Wind project issued approximately $1.5 million in August 2011 and used the proceeds to build one 1.5 MW wind turbine. The Westford Solar project issued $5.8 million in August 2011 and used the proceeds to help fund a 4.5 MW ground-mounted solar project. In Washington, a $9M wind turbine project was completed in early 2013. It is projected to produce 4.25 megawatts of electricity annually.

In Colorado, the Colorado Housing Finance Authority (CHFA) completed two QECB issuances on behalf of private entities. In April 2012, they issued $6.7 million in QECBs to a private developer with the proceeds used to finance the installation of solar panels on Denver Housing Authority properties. In August 2013, the CHFA issued $4.9 million in QECBS to various private entities to finance solar facilities for Denver International Airport, The City of Greeley and the State of Colorado Department of Corrections.

Energy Performance Contract Issuances

At least eighteen QECB issuances (as of December, 2014) are known to have utilized energy performance contracts.[87] One example is the University of Louisville, which issued $20.9 million in QECBs for such a project.

Utilization of QECB Allocations State-by-State

Across the United States, state utilization rates range from complete lack of known utilization to complete exhaustion of allocation (100% issued in Kansas); see Table 1A. In addition to Kansas, known state leaders include Colorado (96%), Kentucky (93%), Nebraska (88%), Montana (83%), California (82%), Alabama (81%) South Dakota (79%), and Louisiana (66%). Fifteen[88] states are not known to have issued any QECBs. One state has confirmed that QECBs have not yet been authorized: West Virginia. In addition, EPC has been unable to locate authorizing documentation for Hawaii, Mississippi, and Wyoming. QECB Authorization efforts in Hawaii appear to have stalled in 2012.[89] Florida was the most recent state to authorize QECBs with legislation passing in June 2014 to authorize the state's $190 million allocation.[90]

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[83] With a conduit issuance, a state agency issues the bonds but the bonds are not backed by the state and the borrower/project is solely responsible for their repayment
[84] Fairhaven Wind, Scituate Wind and Westford Solar
[85] Interview with Diane Stoddard, Assistant City Manager for the City of Lawrence.
[86] Interview with Elise Avers, Massachusetts Department of Energy Resources.
[87] These issuances are the Colorado School of Mines; Commonwealth of Pennsylvania, Fayette County; Kansas Development Finance Authority, Louisville-Jefferson County Metro Government; University of Kentucky; University of Louisville; Department of Corrections, Louisiana, Washington County Housing and Redevelopment Authority; and the Town of Marshfield, Massachusetts.
[88] In addition, 5 US territories have not issued QECBs; status of authorization is unknown as of December 2014
[89] HI HB1033, 2012. http://legiscan.com/HI/text/HB1033/id/623943
[90] FL CS/HB 7147m 2014 (page 18) http://www.flsenate.gov/Session/Bill/2014/7147/BillText/er/PDF

Regional Utilization of QECB Allocations

Regionally[91], known utilization rates range from about 20% in the Northeast to 66% in the Southwest (see Graph 5). The Southeast, Midwest, Northwest, and Central regions have utilization rates ranging from about 22% to 41%. See Graphs 3 and 4 at the end of this paper.

Local Utilization and Issuance Sizes

At the municipal level, known issuances have ranged from as little as $120,000 for Rantoul Township High School District 193 in Champaign County, Illinois, to as much as $131 million for the Los Angeles Department of Water and Power in California (see Table 1B). Large metropolitan areas that have issued QECBs include Albany, NY, Chicago, Philadelphia, Nashville and Davidson Counties (TN), Las Vegas, Los Angeles, San Diego, Houston and St. Louis. Many large metropolitan areas are not yet known to have utilized their allocations, however, and might benefit from coordination with state and territorial energy officials.

V. BARRIERS TO THE USE OF QECBS

In December 2011, EPC and NASEO reached out to state governments to confirm issuance data and ask questions about state experiences with barriers to issuing QECBs. Twelve states[92] provided information about barriers to issuances in their state. The most commonly cited barriers were (1) small allocations (four states, or 33% of those that provided information), (2) debt aversion at state and local levels (three states, or 25%), and (3) lack of awareness, familiarity, and/or understanding of QECBs or bonds generally at the state and local levels (two states, or 17%). More recently, in 2012 and 2013, a number of large local governments[93] have pointed to sequestration concerns.

Throughout 2013, EPC reached out to large local governments in 11 states[94] to discuss QECBs and inquire about reasons for nonuse. A total of 230 counties were contacted, with a response rate of 37%. Of the 86 counties who responded 33 provided reasons for nonuse; the most commonly cited barriers were: (1) unaware of QECB allocation (13 LLGs, 39% of respondents), (2) No current project (9 LLGs, 27% of respondents), (3) Debt Capacity (5 LLGs, 15% of respondents), and (4) Sequestration (4 LLGs, 12% of respondents).

Small Allocations and Issuance Costs

If a state has many local governments with populations greater than 100,000, this necessitates dividing up the total resource into many pieces and also can increase administrative burdens and implementation delays. Small allocation sizes make it challenging to pay issuance costs because small allocations often mean high transaction costs per dollar of bonds issued. This is particularly difficult as only 2% of QECB issuance proceeds may be used for issuance costs.[95] Transaction costs in many cases are relatively fixed regardless of the size of an issuance.[96]

In 2012, EPC reviewed 66 available official statements to learn more about issuance costs. Of the 66 available, 52 official statements contained information on issuance costs. Based on those statements,[97] EPC found that issuance costs ranged

[91] States in each region (as per EPC): Central: Colorado, Kansas, Montana, Nebraska, North Dakota, Oklahoma, South Dakota, Texas, Wyoming. Midwest: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Ohio, Wisconsin. Northeast: Connecticut, Delaware, District of Columbia, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, West Virginia. Northwest: Alaska, Hawaii, Idaho, Oregon, Washington. Southeast: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia. Southwest: Arizona, California, Nevada, New Mexico, Utah.
[92] Those 12 states are Arizona, Arkansas, District of Columbia, Illinois, Maine, Maryland, New Mexico, North Dakota, Tennessee, Texas, Virginia, and Wyoming. The city of Las Vegas also provided information.
[93] Examples include Schenectady County, NY and Gresham, Oregon.
[94] Illinois, Michigan, New York, North Carolina, Pennsylvania, Virginia, Minnesota, Missouri, Iowa, Alabama, Wisconsin.
[95] See 26 USC 54A(e)(4).
[96] "NASEO and EPC Summary of Barriers for Increasing QECB Activity at the State and Local Levels" (February 2012); "NASEO State Briefing on Qualified Energy Conservation Bonds" (March 2012).
[97] Official statements with breakdown of issuance costs: Allegheny County, PA; Belchertown, MA; Bellingham, WA; Boulder County, CO; Boulder PACE, CO; Chicago, IL; Commonwealth of Pennsylvania; Deerfield, IL; Ely ISD, MN; Fayette County, PA; Foothills, CO; Fort Collins, CO; Grant County, MN; Greene County, MO; Itasca County, MN; Kansas Development Finance Authority; King County, WA; Kitsap, WA; Lake County, SD; Los Angeles Department of Water and Power, CA; Louisville, KY; Mandan School District, ND; State of Maryland; McHenry School District, IL; Menasha School District, WI; Mitchell School District, SD; Pleasant Prairie, WI; Rancho Water District Financing Authority, CA; Champaign County School District 193, IL; Champaign County School District 116, IL; Rapid City, SD; Somerton, AZ; St. Louis County, MO; Tempe, AZ; Thurston County, WA; University of Colorado; University of Kentucky; Washington County Housing and

from a low of $2,400 (Champaign County Township High School District 193, Illinois) up to $399,000 (Tempe, Arizona)[98] for issuing QECBs. The median issuance cost was approximately $53,325 and the median as a percent of total proceeds was 2%. 42% of issuances for which we were able to find information noted issuance costs of 1% or less of total proceeds.

Small issuances may also be difficult to sell.

Techniques for Addressing Small Allocation Issues

Bundling. One approach to dealing with small allocation sizes is to bundle QECBs with other bonds. Of the 79 issuances[99] for which information about bundling was available at the time of our 2012 inquiry into this issue, 60 were issued as part of a bundled issuance with at least one other bond issuance. QECBs have been issued simultaneously with other taxable bonds, tax exempt general obligation bonds, revenue bonds, Air Quality Development Bonds,[100] Build America Bonds,[101] Clean Renewable Energy Bonds,[102] Qualified Zone Academy Bonds,[103] Recovery Zone Economic Development Bonds,[104] and Recovery Zone Facility Bonds.[105]

Energy Efficiency and Conservation Block Grants. Other jurisdictions have used their EECBGs to help cover issuance and administrative costs. The City of Los Angeles used EECBG funding to help cover interest costs for the first two years of the bond term. St. Louis County used EECBG funding to buy down customer interest rates and to cover the county's program administration costs.[106]

Pooling. Jurisdictions may be able to pool their allocations in order to reduce the transaction cost per dollar financed. This may be done simply by waiving sub-allocations back to the state, but in cases in which this is not possible or desirable, local jurisdictions may in some cases be able to pool their sub-allocations without state involvement. For example, jurisdictions have pooled other tax credit bonds. The Wisconsin Public Finance Authority has facilitated pooled issuances of variable rate revenue bonds,[107] multifamily housing revenue bonds,[108] disaster revenue bonds,[109] and various other types of revenue bond issuances. Similar to Wisconsin's PFA, the California Statewide Communities Development Authority (CSCDA) provides local governments with a tool for financing public agency, private activity, and energy finance programs. They have helped finance low-income multifamily and senior housing projects, energy and conservation measures, street lighting, and energy efficiency retrofits. New York has pursued MBBA pooled Financing of QECBS, meaning that local counties could join their QECB allocations together and issue as one entity. Unfortunately there has not been as much interest as expected. An effort to authorize similar pooling in Hawaii stalled earlier in 2012 after legislators

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Redevelopment Authority, MN; Waterbury, CT; Western State College, CO; Wyandotte, KS; Yakima County, WA; York, PA; Yuba Community College, CA; Billings School District, MT; Billings School District High School, MT; Spotsylvania County, VA; Nashville and Davidson Counties, TN; Knox County IN; Philadelphia Municipal Authority, PA; Goodhue County, MN.

[98] The University of Colorado had an issuance cost of $1.2 million but this was for the entire issuance, which included other bonds in addition to QECBs. The cost for the QECB issuance alone was not broken out in the official statement.

[99] EPC was able to locate publicly-available official statements for sixty-six issuances. The additional 13 issuances included in this figure are Ohio issuances for which bundling information was obtained from review of the Ohio Air Development Authority website, press releases, and interviews with staff.

[100] Twelve of the fourteen issuances in Ohio have involved bundling QECBs with Air Quality Development Bonds: South Euclid, Findlay, Licking County, Pickaway County, Owens State Community College, Ravenna, Hamilton County, three Kent State University issuances, City of Trotwood, Jefferson County, and Ohio University. The Pickaway County issuance involved bundling with Recovery Zone Economic Development Bonds.

[101] Twelve issuances were bundled with BABs: June 2010 Tucson issuance, University of Kentucky, University of Louisville, Commonwealth of Pennsylvania, Thurston County, City of Chicago, University of Colorado, Champaign County School District 193, Champaign County School District 116, Waterbury City, King County, Kitsap County. Only the University of Kentucky and University of Louisville were issuances of QECBs and BABs alone. The other issuances were bundled with other types of bonds as well.

[102] Only the Los Angeles Department of Water and Power bundled their QECBs with CREBs.

[103] Four QECB issuances are known to have been bundled with Qualified Zone Academy Bonds: Alma Center School District, Billings School District High School, Champaign County School District 116, and the state of Maryland. The Alma Center and Billings School District High School issuances were a combination of QECBs and QZABs. The other issuances were bundled with other types of bonds as well.

[104] Seven issuances are known to have been bundled with RZEDs: Wyandotte County, Champaign County School District 193, Champaign County School District 116, King County, Kitsap County, Pickaway County and Waterbury City. Only Wyandotte and Pickaway Counties bundled QECBs and RZEDs without any other bonds included.

[105] Lawrence, Kansas bundled its QECBs with Recovery Zone Facility Bonds.

[106] See Lawrence Berkeley National Laboratory, "Using Qualified Energy Conservation Bonds (QECBs) to Fund a Residential Energy Efficiency Loan Program: Case Study on Saint Louis County, MO" (June 2011), p. 3.

[107] February 15, 2012 issuance. See Official Statement at http://emma.msrb.org/ER577249-ER448110-ER850651.pdf.

[108] September 27, 2011 issuance. See Official Statement at http://emma.msrb.org/EP571658-EP448706-EP848602.pdf.

[109] September 22, 2011 issuance. See Official Statement at http://emma.msrb.org/EP572032-EP449005-EP848916.pdf.

and advocates were unable to obtain guidance from IRS, and an effort led by MBBA in 2013 has not yet resulted in any issuances.[110]

Debt Aversion and Debt Caps

Some state and local governments are unwilling to take on additional debt . Other jurisdictions have statutory debt volume caps, which may decrease their motivation to "spend" their volume cap on QECBs versus other types of bonds. In these instances, QECBs and energy efficiency projects may not rank high enough on the state or local government's overall set of priorities for bond issuances.[111]

In some cases, a state may be averse to debt whereas some of its municipalities lack financing options. In these instances, a state might consider an application and award process such as the ones Colorado and Tennessee utilized.[112] In this process, the state requests applications for allocation awards and cedes portions of its allocation to local applicants who can utilize the funding. Because the allocations are issued by local issuers, they need not increase state-level debt.

Alternatively, debt averse issuers may prefer to cede up to 30% of their allocations (or sub-allocations, as applicable) to private developers for private activity bond issuances.

Davis Bacon Act and "Buy American" Requirements

All funds made available under ARRA are subject to the requirements of the Davis Bacon Fair Wage Act[113] and, if applicable, the Buy American Provision found in § 1605 of ARRA.[114] These requirements place a greater burden on the issuer and, especially in cases where other low cost capital is available, make QECBs a less attractive source of financing. Davis Bacon requirements in particular are often cited as a reason for non-use of QECBs, both from a cost perspective and from an administrative standpoint with states/large local governments indicating that their systems are unable to handle the necessary Davis Bacon compliance.

Familiarity and Coordination

In some states a designated agency must be utilized whenever bonds are to be issued; in others a number of different agencies were possible candidates for implementing the QECB program and one was chosen and designated in an executive order or state legislation authorizing the QECB program and suballocations. At least 22 State Energy Offices (SEOs) have been charged with implementing QECBs. See Appendix H for an unofficial list of apparent administering agencies. In other states, bonding authorities, development authorities, or other agencies have been authorized to run the QECB programs. In some instances, the bonding authority may be unclear about eligibility of projects or methodologies for measuring 20% savings. In instances in which the SEO is the designated agency, the SEO may not have bonding experience or may not have a working relationship with bond professionals. In short, increased coordination across state agencies would facilitate implementation in some states.[115]

Similarly, technical assistance and support from the state or the federal government is helpful and, in some cases, necessary for local governments to use QECBs.[116]

Some state agencies administering the QECBs did extensive outreach to local governments to make them aware of this funding opportunity. For example, Maryland Energy Administration (MEA) wrote and distributed QECB information

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[110]Interview with Colin Bishopp.
[111] "NASEO and EPC Summary of Barriers for Increasing QECB Activity at the State and Local Levels" (February 2012).
[112] See Appendix D: State Applications for examples of state application process documentation
[113] 40 U.S.C. §§ 276a-276a-7, which provides that locally prevailing wages and fringe benefits must be paid to laborers and mechanics employed on federally funded contracts exceeding $2,000 that may involve construction, alteration, maintenance or repair
[114] The Buy American provision in the American Recovery and Reinvestment Act of 2009 (section 1605 of Title XVI), provides that, unless one of three listed exceptions applies (nonavailability, unreasonable cost, and inconsistent with the public interest), and a waiver is granted, none of the funds appropriated or otherwise made available by the Act may be used for a project for the construction, alteration, maintenance, or repair of a public building or public work unless all the iron, steel, and manufactured goods used are produced in the United States. For further discussion of the applicability of these provisions see http://www1.eere.energy.gov/recovery/buy_american_faq.html#q1
[115] "NASEO and EPC Summary of Barriers for Increasing QECB Activity at the State and Local Levels" (February 2012).
[116] "NASEO and EPC Summary of Barriers fInterview with Dan Bresette of the Maryland Energy Administration.or Increasing QECB Activity at the State and Local Levels" (February 2012).

papers and worked with the state Treasurer and the Governor's office. In Fall 2009, the Governor's office sent letters to executives and council presidents of each "large local government", as applicable, with copies to finance directors. The letters included a table of suballocations, MEA/Treasurer contact information, and were followed by a series of phone calls with local government finance staff soliciting feedback on the QECB program and helping establish the groundwork for issuances in Maryland. MEA, the Treasurer, and the Community Development Administration (CDA) continue to consult with suballocees re QECBs.

Uncertainty

Regulatory and legal concerns also presented a barrier to QECB issuances, particularly in the first years of the program before Notice 2012-44 was issued in June 2012; those concerns and the notice are discussed below. Similarly, after September 2012 but prior to sequester becoming a reality, the threat of cuts to subsidy payments on QECBs was cited by at least one state and one local government as a barrier to issuance. See Section VI for an update on sequestration.

VI. UNCERTAINTY, NOTICE 2012-44, AND SEQUESTRATION BACKGROUND

A. Introduction

During the early years of the QECB program, a number of legal and regulatory issues delayed or postponed issuances. On June 25, 2012, the IRS issued Notice 2012-44 and resolved many of these issues. Some questions remain. These issues are discussed further below.

Only months after Notice 2012-44 seemed to resolve the most commonly raised concerns regarding QECBs, budget talks surrounding the "fiscal cliff" resulted in a different but equally problematic uncertainty: it was no longer clear how much, if any, subsidy payment QECB issuers would receive, even if they had issued bonds prior to the date on which sequestration cuts were to occur.

B. Sequestration

The White House Office of Management and Budget (OMB) released a report on September 14, 2012 noting potential spending cuts that could come into effect on January 2, 2013, if Congress did not act to modify the Budget Control Act of 2011. With the passage of The American Taxpayer Relief Act of 2012 (H.R. 8), March 1st, 2013 replaced January 2nd, 2013, as the date when cuts will occur should Congress fail to reach an agreement on budget cuts. Since Congress did not provide otherwise, a "sequestration" process occurred that reduced funding for a wide range of government programs, including QECBs.

The OMB report indicated that among the potential cuts under sequestration are an estimated $2 million reduction to the Qualified Energy Conservation Bond (QECB) program which would likely affect the issuers of existing bonds. At the time, Reuters and the Bond Buyer reported that similar cuts to the Build America Bond program could take away subsidy payments on existing bonds. Although the FY 2013, FY 2014 and FY 2015 sequester amount for QECBs are not very large in the context of the overall program, the difference could be significant for issuers on tight margins.

To access OMB's reports on sequestration, please visit:http://www.whitehouse.gov/omb/legislative_reports/sequestration

Sequester Effects on QECBs

In October 2014, the IRS issued the fiscal year 2015 update regarding the effect of sequestration on QECB issuers.[117] The sequester reduction is applied to section 6431 amounts claimed by an issuer on any Form 8038-CP filed with the Service which results in a payment to such issuer on or after October 1, 2014. The sequestration reduction rate will be applied unless and until an intervening Congressional action, at which time the sequestration rate is subject to change, effectively making these cuts permanent. As determined by OMB, payments to issuers from the budget accounts associated to these qualified bonds are subject to a reduction of 7.3% of the amount budgeted for such payments.

[117] http://www.irs.gov/Tax-Exempt-Bonds/Update-Effect-of-Sequestration-on-State-&-Local-Government-Filers-of-Form-8038CP-FY2015

The prior sequester notice, issued in September 2013, had a reduction of 7.2% and was effective through September 30, 2013. In the most recent sequester notice; the rate of reduction has been increased by 0.1% to 7.3%. The new rate is effective unless and until Congress takes action, with no specified end date.

The sequester's effect on QECBs issued as tax credit bonds (with tax credits for the holders rather than cash subsidies for the issuer) remains unclear, as it is not specifically mentioned in any IRS guidance. It appears that tax credit QECBs may not be subject to the cuts.

Six counties have cited sequestration as a reason for not actively pursuing QECBs. Two of these counties have expressed reluctance to issue tax credit bonds in general, due to the effect of sequester on BABs, and their experience with those bonds.

C. Notice 2012-44

Intended Scope

The Notice confirms that Congress intended to give state and local governments "wide" and "broad" discretion issuing QECBs. This confirmation should guide IRS auditors when reviewing issuances and provide some additional comfort to issuers and their counsel.

Capital Expenditure Requirement

The QECB legislation requires for some uses that QECB proceeds be spent on capital expenditures. Notice 2012-44 provides guidance on determining whether an expenditure is a "capital expenditure" for purposes of the QECB rules, helpful clarification for issuers of any type of QECB.

20% Savings

As noted earlier, a common use of QECBs is to reduce energy consumption in publicly owned buildings by at least 20% through capital improvements. Prior to the publication of Notice 2012-44, however, there was a great deal of uncertainty about how exactly issuers were required to estimate or measure the required energy savings.

Notice 2012-44 provides pages of information on how issuers can properly estimate projected reductions in energy consumption due to improvements financed by QECBs. It explicitly distinguishes the rules applicable in the context of Internal Revenue Code section 179D, another provision that provides tax benefits for reductions in energy consumption in government buildings.

Instead, the Notice provides specific guidelines for QECB issuers. Energy savings can be measured building by building or across all the buildings improved with the QECB proceeds. They can also be measured by a component or multiple components of the energy system of the building or buildings in question (e.g., HVAC, hot water, lighting, building envelope, or "plug load" due to items plugged into outlets such as refrigerators).

The issuer must "reasonably expect" that the capital expenditures to be financed with the bond proceeds will result in a 20 percent or greater reduction in energy consumption for the selected building, buildings or building system component using a "common energy unit" such as a MMBtu (one million British thermal Units).

In order to determine whether the issuer's expectation was reasonable, Treasury will look to whether the issuer or its engineer used such tools as an ASHRAE level 3 audit, building energy use simulation techniques and estimating software (including the DOE (Department of Energy) 2 based Quick Energy Simulation Tool (eQUEST)) or other qualified computer software for calculating commercial building energy and power cost savings that meet federal tax incentive requirements as listed by Department of Energy's Building Technology Program at: http://apps1.eere.energy.gov/buildings/tools_directory/.

The issuer must use a "reasonable and consistently applied" method to measure (actual or projected) energy savings over a "reasonable and consistent time period" of at least one year (e.g. energy use in the year before the improvements were made and in the year following the improvements). The issuer need not subsequently demonstrate energy savings. An issuer may rely on an engineer's certification (an example is provided in the notice) if the actual capital improvements financed by the QECB proceeds are substantially similar to those contemplated as the basis for the certification.

Green Community Programs

Despite great interest, there have been relatively few green community program issuances. The term "green community programs" was not defined in the statute or IRS guidance until June 2012; Notice 2012-44 addresses this issue. To qualify as a "green community program" for QECB purposes, the Notice provides that a program must both promote "energy conservation, energy efficiency or environmental conservation initiatives related to energy consumption, broadly construed" and either involve property that is available for "general public use" (such as replacing streetlights on public roads with LED bulbs) or loans/grants that have "broad public availability" (including residential housing or private building energy efficiency initiatives that provide grants or loans that are broadly available for homeowners or businesses).

The Notice incorporates the frequently-cited conference report that indicates that a green community program can finance retrofits of existing private buildings through loans and/or grants to individual homeowners or businesses, or through other repayment mechanisms.[118] Retrofits can include heating, cooling, lighting, water[119], conservation, storm-water reduction, or other efficiency measures.[120]

Issuance Trends since IRS Notice 2012-44 & The Sequester

In July of 2012, IRS issued notice 2012-44, which provided clarification on eligible QECB projects and Green Community Programs. The issuance of the notice was followed by a $24 million (40%) increase in issuances over two quarters ($84.33 million in Q3 and Q4 as compared to $60.35 million in Q1 and Q2 of that year). Early in 2013 the increasing threat of sequester (among other factors) began to loom which may have attributed to the fact that there were only 3 known issuances totaling $13.21 million in Q1 of 2013. However the rest of 2013 proved to be a strong year with total issuances of $91.77 million (a 32% increase over 2012). 2014 saw a downturn in the number of QECBs issued, with only 14 issuances totaling $59.19 (a decrease of 69% from 2013) but it is not known whether the sequester or other factors contributed to this low volume. See Graph 2: Amount of QECBs Known to be issued by Quarter.

Notice 2012-44 indicates that the contact at the IRS is Zoran Stojanovic. The phone number listed in the notice has been updated to: (202) 317-4564.

[118] The conference report provides: "...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. Other repayment mechanisms can include periodic fees assessed on a government bill or utility bill that approximate the energy savings of energy efficiency or conservation retrofits. Retrofits can include heating, cooling, lighting,water-savings, stormwater-reducing, or other efficiency measures." See H.R. Report 111-16 Conference Report to Accompany H.R. 1: Making Supplemental Appropriations for Job Preservation and Creation, Infrastructure Investment, Energy Efficiency and Science, Assistance to the Unemployed, and State and Local Fiscal Stabilization, for the Fiscal Year Ending September 30, 2009 and for other purposes. February 12, 2009 p. 627

[119] One issuer reported that the IRS declined to rule favorably on whether water-conserving improvements were valid uses of QECBs issued under the 20% reduction in energy consumption prong of the eligible conservation purposes definition.

[120] See: www1.eere.energy.gov/wip/solutioncenter/pdfs/taking_advantage_of_qualified_energy_conservation_bonds_qecbs_presentation.pdf.

VII. UPDATES SINCE EPC QECB MEMO DATED June 2014

The increase in known projects from 173 to 187 consists of 7 new QECB issuances since our June report and 8 previously unknown issuances. Newly reported issuances include**:**

- Montgomery County Commission, Alabama, $4.4 million, June 30, 2014, energy efficiency improvements to youth detention facility
- Monroe County, Michigan, $10.5 million, June 6, 2014, sewer improvements
- State of Oregon, $2,080,000, June 26, 2014, various energy improvement, conservation and renewable energy projects within the state
- City of Houston, Texas, $9,000,000, July 2014, energy efficiency retrofit for libraries and city facilities
- Hamshire-Fannet ISD, Texas, $2,608,093, July 2014, infrastructure service contract for schools
- Village of Bensenville, Ill, $ 6,815,000, November 18, 2014, energy efficiency upgrades to police station
- Missouri Clean Energy District/Wornall Plaza Condominiums, $571,430, November 6, 2014, green community program – PACE loan for multifamily residential energy efficiency improvements

See Table 1B for a complete list of known issuances. In addition, we have removed one previously reported issuance which has since been determined not to have closed: Clarksville, Tennessee.

Taking into account all of these issuances, total known QECB issuances have now reached $1.08 billion. See Graph 1 at the end of this paper. This figure represents an increase of $70 million (7 percent) since the publication of the June 2014 version of this paper.

Due to the addition of new and previously unknown issuances, known state utilization rates increased in 7 states: Alabama, Colorado, Georgia, Illinois, Michigan, Missouri, North Carolina, Oregon and Texas.

Known utilization rates have increased in four of six regions. See Graph 5 at the end of this paper. The Southeast showed the biggest change, increasing from 17.7% to 22.3% as a result of a one new and one previously unknown issuance in Alabama, four previously unknown issuances is North Carolina and one previously unknown issuance in Georgia. The Central region increased to 29.7% as a result of two new issuances in Texas and one previously unknown issuance in Colorado. The Midwest showed an increase to 41.4% due to one new issuance in Illinois, one new and one previously unknown issuance in Michigan and one new issuance in Missouri. The Northwest increased to 37.1% due to one new issuance in Oregon. The Northeast and the Southwest showed no change, remaining at 19.8% and 65.7% respectively.

Graph 2 shows the rate of QECB issuances on a quarterly basis beginning in the first quarter of 2010. $59.19 million of QECBs were issued in 2014, a 60% decrease over the total of $191.77 million issued in 2013. 2014 showed a relatively consistent pattern of issuances across all quarters with each quarter significantly lower than the same quarter in 2013. Much of the difference in volume is related to the lack of larger issuances that were seen in 2013 such as LA Water and Power ($27 million, Q2 2013) and NYSERDA ($24 million, Q3 2013). The lack of large issuances helps explain the significant differences seen in Q2 and Q3 of 2014 compared with 2013 with a 55% decrease in volume for Q2 and an 88% decrease in volume for Q3.

VIII. Tables and Charts

Table 1A: State and Local Issuances of QECBs (as of December 31, 2014)				
State	**Amount**	**Known Issued**	**Percent Issued**	**Remaining**
Alabama	$48,364,000	$39,325,325	81.31	$9,038,674
Alaska	$7,120,000	0	0.00	$7,120,000
American Samoa	$673,000	0	0.00	$673,000
Arizona	$67,436,000	$16,023,804	23.76	$51,412,196
Arkansas	$29,623,000	$9,125,000	30.80	$20,498,000
California	$381,329,000	$313,853,250	82.31	$67,475,750
Colorado	$51,244,000	$49,390321	96.38	$1,853,679
Connecticut	$36,323,000	$10,700,000	29.46	$25,623,000
Delaware	$9,058,000	0	0.00	$9,058,000
District of Columbia	$6,140,000	0	0.00	$6,140,000
Florida	$190,146,000	0	0.00	$190,146,000
Georgia	$100,484,000	$22,306,000	22.20	$78,178,000
Guam	$1,826,000	0	0.00	$1,826,000
Hawaii	$13,364,000	0	0.00	$13,364,000
Idaho	$15,809,000	0	0.00	$15,809,000
Illinois	$133,846,000	$82,795,000	61.86	$51,051,000
Indiana	$66,155,000	$19,500,000	29.48	$46,655,000
Iowa	$31,150,000	0	0.00	$31,150,000
Kansas	$29,070,000	$29,065,000	99.98	$5,000
Kentucky	$44,291,000	$41,297,000	93.24	$2,994,000
Louisiana	$45,759,000	$30,318,244	66.26	$15,440,756
Maine	$13,657,000	$4,097,100	30.00	$9,559,900
Maryland	$58,445,000	$10,665,000	18.25	$47,780,000
Massachusetts	$67,413,000	$33,133,237	49.15	$34,279,763
Michigan	$103,780,000	$25,675,544	24.74	$78,104,456
Minnesota	$54,159,000	$16,025,000	29.59	$38,134,000
Mississippi	$30,486,000	0	0.00	$30,486,000
Missouri	$61,329,000	$12,006,430	19.58	$49,322,570
Montana	$10,037,000	$8,334,000	83.03	$1,703,000
Nebraska	$18,502,000	$16,325,000	88.23	$2,177,000
Nevada	$26,975,000	$8,135,950	30.16	$18,839,050
New Hampshire	$13,651,000	$1,129,348	8.27	$12,521,652
New Jersey	$90,078,000	0	0.00	$90,078,000
New Mexico	$20,587,000	0	0.00	$20,587,000
New York	$202,200,000	$29,469,870	14.57	$172,730,130
North Carolina	$95,677,000	$7,492,702	7.83	$88,184,298
North Dakota	$6,655,000	$3,780,000	56.80	$2,875,000
Northern Marianas	$899,000	0	0.00	$899,000
Ohio	$119,160,000	$77,806,888	65.30	$41,353,112

Oklahoma	$37,787,000	0	0.00	$37,787,000
Oregon	$39,320,000	$9,680,000	24.62	$29,640,000
Pennsylvania	$129,144,000	$41,835,000	32.39	$87,309,000
Puerto Rico	$41,021,000	0	0.00	$41,021,000
Rhode Island	$10,901,000	0	0.00	$10,901,000
South Carolina	$46,475,000	$2,000,000	4.30	$44,475,000
South Dakota	$8,343,000	$6,575,000	78.81	$1,768,000
Tennessee	$64,476,000	$6,440,000	9.99	$58,036,000
Texas	$252,378,000	$11,608,093	4.60	$240,769,907
US Virgin Islands	$1,140,000	0	0.00	$1,140,000
Utah	$28,389,000	$6,918,774	24.37	$21,470,226
Vermont	$6,445,000	0	0.00	$6,445,000
Virginia	$80,600,000	$3,710,000	4.60	$76,890,000
Washington	$67,944,000	$43,550,000	64.10	$24,394,000
West Virginia	$18,824,000	0	0.00	$18,824,000
Wisconsin	$58,387,000	$26,322,883	45.08	$32,064,117
Wyoming	$5,526,000	0	0.00	$5,526,000
Total	**$3,200,000,000**	**$1,076,414,763**	**33.64**	**$2,123,585,237**
1. The information attached hereto has been gathered from various sources, including IRS Notice 2009-29, Municipal Securities Rulemaking Board, Department of Energy (DOE), Wells Fargo, state and local issuer websites, state and local government contacts. The amount issued figure may be rounded.				
2. Chart compiled by Elizabeth Bellis, Director, QECB Program, Gabriel Weil, EPC, and Susan Rosenthal, EPC, and funded by the Energy Foundation, Ford Foundation, and others. Chart includes all known QECB issuances through December 31, 2014 but may not include all QECB issuances.				
For more information, please contact Elizabeth Bellis at ebellis@energyprograms.org, or 202.999.996, Susan Rosenthal at srosenthal@energyprograms.org.				

Table 1B: Qualified Energy Conservation Bonds Known Issued by State (as of December 31, 2014)				
Issuer	**State**	**Issue Date**	**Amount Issued**	**Use of Proceeds**
Montgomery County Commission	Alabama	6/30/14	$4,350,986	EE- improvements to youth detention facility
City of Trussville	Alabama	4/20/14	$2,485,000	EE - lighting - sports complex
Montgomery County Commission	Alabama	3/9/12	$4,416,936	EE - government buildings
Scottsboro- City	Alabama	11/29/12	$5,750,000	EE - retrofit - schools
City of Foley	Alabama	1/30/13	$2,900,000	EE - retrofits - citywide
City of Vestavia Hills	Alabama	5/15/13	$4,245,000	EE - lighting - sports fields
Madison County Board of Education	Alabama	11/18/13	$5,647,153	EE- schools
Madison County Board of Education	Alabama	7/3/13	$9,530,250	EE- schools
Tempe	Arizona	7/1/11	$7,300,000	EE/Water
Tucson City	Arizona	6/9/11	$1,430,000	EE
Tucson City	Arizona	6/23/10	$5,590,000	EE / Renewable generation
Navajo County/City of Show Lo	Arizona	1/3/12	$723,804	ESPC
Somerton	Arizona	11/22/11	$980,000	Renewable generation
Arkansas Development Finance Authority	Arkansas	5/23/13	$4,630,000	ESPC
Osceola County School District	Arkansas	11/1/13	$4,495,000	EE - schools
GreenFinanceSF (City and County of San Francisco)	California	Oct-12	$1,400,000	GCP - EE / renewable energy upgrades - multi-tenant commercial buildings - C-PACE
Yuba College Central Plant Efficiency Project	California	6/3/11	$6,324,000	EE - university
Yuba Community College	California	6/21/11	$15,040,000	Renewable generation
Richmond	California	12/1/10	$1,070,000	GCP - lighting - streetlights and municipal capital improvements
San Diego	California	4/15/11	$13,141,596	GCP - lighting conversion program
Santa Clara County Photovoltaic Project	California	2/10/11	$20,368,000	Renewable generation
Sonoma County	California	8/6/10	$1,977,500	Renewable generation
Kern County	California	4/12/11	$4,337,131	Renewable generation - solar project
Yolo County	California	3/16/11	$2,019,214	Renewable generation - solar project - 1MW
Santa Barbara County	California	5/25/11	$4,170,000	Renewable generation - solar project at Calle Real campus
Los Angeles County	California	8/31/11	$14,000,000	Renewable generation - solar projects
City of Los Angeles	California	10/25/11	$11,920,000	EE - retrofit - city facilities
San Francisco County	California	10/1/11	$8,291,079	EE - retrofit - public facilities

Irvine Unified School District	California	7/29/10	$4,840,000	EE - schools
Lodi Unified School District Project	California	11/18/10	$9,915,000	Renewable generation - solar improvements in schools
Oxnard Union High School District Project	California	9/29/10	$19,067,730	Renewable generation - solar improvements in schools
Los Angeles Dep't of Water & Power	California	6/4/13	$27,855,000	EE - university
Los Angeles Dep't of Water & Power	California	8/17/10	$131,020,000	Renewable generation - solar & wind
Fallbrook Public Utility District Project	California	11/18/10	$7,227,000	Renewable generation - solar improvements
Rancho Water District Financing Authority	California	11/7/11	$9,870,000	Water / wastewater capital improvement
Regents of the University of Colorado	Colorado	10/20/10	$4,375,000	EE - university - cooling systems
Western State College	Colorado	8/19/10	$1,635,000	EE - university
Colorado School of Mines	Colorado	4/12/11	$2,800,000	ESPC - university
Boulder Housing Partners	Colorado	8/25/10	$1,443,881	ESPC - public housing
Roaring Fork Transportation Authority	Colorado	8/21/12	$6,650,000	GCP -Clean Energy Buses
Roaring Fork Transportation Authority	Colorado	11/21/13	$1,300,000	GCP - Clean Energy Buses
Boulder County PACE	Colorado	11/5/10	$1,515,000	GCP C-PACE
Boulder County	Colorado	2/2/10	$5,800,000	EE - county buildings
City of Boulder	Colorado	9/27/10	$1,500,000	ESPC - municipal buildings
City of Englewood	Colorado	9/15/10	$1,286,440	Capital improvements - municipal
Foothills Park & Rec Dt	Colorado	8/13/10	$1,000,000	ESPC - parks and recreation
Fort Collins City	Colorado	6/28/10	$6,410,000	Smart Grid
Colorado Housing Finance Authority (private issuance)	Colorado	4/20/12	$6,775,000	Renewable generation - solar - 2.5 MW PV project for Denver Housing Authority
Colorado Housing Finance Authority (private issuance)	Colorado	8/30/13	$4,900,000	Renewable generation - solar - Denver Airport, City of Greeley, CO Dept of Corrections
Mesa County School District #51	Colorado	10/29/10	$2,000,000	EE - schools - lighting/HVAC
East Hartford	Connecticut	4/10/10	$6,000,000	ESPC - municipal buildings
Waterbury City	Connecticut	8/11/10	$4,700,000	EE - municipal
Development Authority of Fulton County/MAS ASB Cogen, LLC Project	Georgia	5/11/12	$16,934,000	CHP generating facility
Fulton County	Georgia	8/23/11	$5,372,000	Capital improvements - schools
Southern Illinois Univ Bd of Trustees	Illinois	12/6/12	$5,365,000	EE
Illinois Central College / Tazewell County	Illinois	3/13/14	$1,300,000	Sustainability Center
Cook County	Illinois	7/23/13	$24,945,000	Capital improvements - county facilities
City of Chicago	Illinois	11/4/10	$29,665,000	Water - wastewater reclamation facility reconstruction

Deerfield	Illinois	9/26/11	$12,500,000	Water - wastewater capital improvement
Champaign Cty (Rantoul) Township High School District 193	Illinois	12/20/10	$120,000	Capital improvements - schools
McHenry CCSD	Illinois	8/31/11	$1,500,000	EE - schools
Champaign Cty School District 116 (Urbana)	Illinois	12/14/10	$585,000	EE /Water - upgrades to water system
Village of Bensenville	Illinois	11/18/14	$6,815,000	EE - Police station
Ivy Technical Community College	Indiana	10/1/10	$3,300,000	EE - retrofits - hospital
Knox County	Indiana	4/12/12	$16,200,000	EE - retrofits - hospital
Kansas Development Finance Authority	Kansas	12/21/10	$17,815,000	ESPC - university (KSU)
Wyandotte County/Kansas Unified Govt.	Kansas	11/18/10	$2,530,000	EE improvements - municipal
Lawrence City	Kansas	3/10/11	$8,720,000	Renewable generation
University of Kentucky	Kentucky	11/19/10	$12,955,000	ESPC - university
University of Louisville	Kentucky	12/20/10	$20,942,000	ESPC - university
Louisville-Jefferson County Metro Govt.	Kentucky	9/14/10	$7,400,000	EE improvements - government
Department of Corrections	Louisiana	12/15/11	$30,318,244	EE
Portland Housing Authority, Portland	Maine	6/7/13	$4,097,100	EE improvements
Montgomery County	Maryland	10/3/13	$4,165,000	Equipment lease purchase
State of Maryland - St. Mary's County Public schools - Leonardtown Middle School	Maryland	7/27/11	$6,500,000	Capital improvements - schools
Belchertown	Massachusetts	9/20/11	$3,140,000	EE
Georgetown	Massachusetts	10/18/12	$2,199,000	EE
Lowell City	Massachusetts	12/2/11	$2,648,000	EE
South Hadley	Massachusetts	12/18/13	$1,901,000	ESPC - municipal buildings
City of Northampton	Massachusetts	12/22/10	$1,698,790	EE improvements - public buildings
Town of Gill	Massachusetts	8/25/11	$127,500	ESPC - schools
Town of Marshfield	Massachusetts	7/2/12	$5,000,000	ESPC - schools and public buildings
Lancaster Town	Massachusetts	9/18/12	$1,484,000	Renewable Generation
Cathartes Private Investments/ Westford Solar	Massachusetts	8/22/11	$5,800,000	Renewable generation
Fairhaven Wind	Massachusetts	11/7/11	$3,035,957	Renewable generation
Scituate Wind/Town of Scituate	Massachusetts	8/10/11	$1,531,480	Renewable generation
Pentucket Regional School District	Massachusetts	10/21/11	$4,567,510	EE - schools
Genesee County	Michigan		$7,815,784	ESPC

Osceola County	Michigan		$650,000	EE - county annex building
Saginaw	Michigan	12/20/10	$2,088,779	EE improvements - county facilities
City of Greenville	Michigan		$800,000	
Ottawa County	Michigan		$2,825,981	
Grant Schools	Michigan		$995,000	EE- Schools
Monroe County	Michigan	6/6/14	$10,500,000	Water - sewer improvements
New Hope Economic Development Authority	Minnesota	11/18/11	$3,505,000	EE
Washington County Housing and Redevelopment Authority	Minnesota	2/22/12	$2,375,000	ESPC
Grant County	Minnesota	2/1/11	$2,000,000	EE - upgrades - courthouse
Gilbert City	Minnesota	6/24/12	$350,000	EE
Goodhue County	Minnesota	8/16/12	$1,295,000	EE
Itasca County	Minnesota	2/8/11	$3,690,000	EE
ELY ISD #696	Minnesota	5/19/11	$2,810,000	EE - schools
Greene County	Missouri	3/3/11	$1,130,000	EE
St. Louis County	Missouri	4/29/11	$10,305,000	GCP - Green community loan program
Missouri Clean Energy Program/Wornall Plaza Condominiums	Missouri	11/6/14	$571,430	GCP - PACE program, Wornall Plaza Condominiums, Kansas City
Billings High SD #2	Montana	7/12/12	$3,780,000	EE - schools - HVAC, windows, and roof upgrades
Billings SD #2	Montana	7/12/12	$4,554,000	EE - schools - HVAC, windows, and roof upgrades
University of Nebraska	Nebraska	4/1/14	$4,325,000	EE - university - energy monitoring system
Nebraska Utilities Corp	Nebraska	2/6/14	$5,500,000	Renewable generation - renewable energy system for university
Nebraska Utilities Corp	Nebraska	2/1/14	$6,500,000	Renewable generation - renewable energy system for university
City of Reno	Nevada	6/1/10	$2,261,650	EE retrofit - municipal - Reno City Hall
Las Vegas	Nevada	3/16/11	$5,874,300	GCP (streetlights) / EE - municipal buildings
Manchester	New Hampshire	11/1/10	$1,129,348	EE - schools
Albany Co - New York	New York	12/27/12	$1,600,000	EE
Rochester City	New York	6/16/10	$2,166,400	EE - HVAC replacement
Chautauqua County	New York	1/19/11	$1,403,470	Renewable generation
NYSERDA	New York	8/13/13	$24,300,000	GCP - NYSERDA's Green Jobs - Green NY program- Residential EE loans
Morton County (Mandan S.D.)	North Dakota	2/9/2011; 5/4/2011	$3,780,000	EE - schools
Avery Solar	North Carolina	3/20/12	$1,977,702	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP

Mayberry Solar	North Carolina	5/15/12	$2,215,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP
Sandy Cross Solar	North Carolina	8/29/12	$1,200,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP
Progress Solar I	North Carolina	2/6/13	$2,100,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP
Ohio University	Ohio	8/1/12	$8,500,000	EE - university
University of Akron	Ohio	9/30/13	$15,000,000	EE / renewable generation - lighting, HVAC, & solar
Kent State University (Main Campus)	Ohio	5/31/11	$7,000,000	EE and conservation improvements
Kent State University (Regional Campus)	Ohio	3/30/11	$2,693,612	EE and conservation improvements
Kent State University (Stark Campus)	Ohio	6/11/10	$672,130	EE and conservation improvements
Owens State Community College	Ohio	3/18/10	$3,125,000	EE and conservation improvements
Kent State University	Ohio	10/25/12	$7,500,000	EE retrofit
Ohio State University	Ohio	12/20/12	$2,340,000	EE retrofit
Wright State University	Ohio	2/28/13	$8,312,700	EE retrofit
Central State University	Ohio	5/16/13	$7,000,000	EE retrofit
City of South Euclid	Ohio	8/31/11	$386,145	EE
City of Trotwood	Ohio	4/12/12	$883,361	EE
Jefferson County	Ohio	5/12/12	$658,040	EE
City of Akron	Ohio	8/15/13	$2,355,914	EE - municipal facilities
Franklin County	Ohio	5/23/13	$3,806,167	EE retrofit
Licking County	Ohio	11/20/12	$796,252	EE retrofit
Findlay	Ohio	6/30/11	$518,010	EE retrofit
Hamilton County	Ohio	10/22/11	$2,063,750	EE retrofit
Licking County	Ohio	9/29/11	$2,121,000	EE retrofit
Pickaway County	Ohio	12/15/10	$1,479,807	EE retrofit
Williams Co (Edgerton) LSD	Ohio	2/23/12	$595,000	EE- School improvements
Gresham County	Oregon	7/30/13	$7,600,000	Renewable generation - wind
State of Oregon	Oregon	6/26/14	$2,080,000	EE-public service facilities
Philadelphia Municipal Authority	Pennsylvania	5/11/12	$6,250,000	ESPC - retrofit - city facilities
Allegheny County	Pennsylvania	11/22/10	$9,385,000	EE retrofit - municipal facilities
Fayette County	Pennsylvania	9/28/11	$1,490,000	ESPC - retrofit - municipal facilities

York County	Pennsylvania	12/28/11	$2,200,000	EE retrofit - municipal facilities
Commonwealth of PA Department of Corrections	Pennsylvania	9/30/10	$15,810,000	ESPC - equipment purchase - prison system
Tri-Valley School District	Pennsylvania	12/30/13	$1,500,000	EE – schools
SC Saves/Randolph Trucking	South Carolina	5/24/14	$2,000,000	GCP - gas compressed vehicles for truck company
Lancaster County	Pennsylvania	8/7/13	$5,200,000	EE
Rapid City	South Dakota	11/1/11	$4,000,000	EE/ Renewable generation - schools
Lake County	South Dakota	6/1/11	$850,000	Renewable generation
Davison County (Mitchell) #17-2	South Dakota	11/10/10	$1,725,000	Renewable generation - wind 1.5 MW turbine
Nashville and Davidson County	Tennessee	8/15/12	$6,440,000	EE
City of Houston	Texas	7/2014	$9,000,000	EE retrofit - libraries and city facilities
Hamshire-Fannet ISD	Texas	7/2013	$2,608,093	EE schools
Utah County	Utah	10/22/10	$5,000,970	EE
Salt Lake County	Utah	7/12/11	$1,917,804	Renewable generation
Norfolk	Virginia	11/7/13	$2,470,000	EE - municipal
Spotsylvania County	Virginia	7/19/12	$1,240,000	Mass Commuting - commuter train station
Washington State Housing Finance Commission/Town and Country Market	Washington	3/6/14	$1,150,000	GCP - Kitsap County - Town & Country Market retrofit
Kitsap County	Washington	12/16/10	$1,110,000	Water - sewers
Bellingham City	Washington	4/13/11	$6,480,000	EE
King Co- Washington	Washington	12/10/12	$6,020,000	EE
Yakima County	Washington	9/8/10	$2,430,000	EE - courthouse
King County	Washington	11/15/10	$5,825,000	EE - HVAC project
Renton	Washington	7/1/13	$3,200,000	EE - lighting - LED Streetlights
Mason County	Washington	12/10/13	$1,620,000	EE - correctional facility
Okanogan County	Washington	9/5/13	$1,115,000	EE
Thurston County	Washington	10/26/10	$2,040,000	EE - retrofit - municipal
Longview	Washington	4/18/13	$3,560,000	EE - retrofit - municipal facilities and vehicles
Swauk Creek Ranch (WSHFC)	Washington	12/27/12	$9,000,000	Renewable generation - wind
Western Wisconsin Tech College Dt	Wisconsin	1/27/11	$1,500,000	EE - HVAC - university
Western Wisconsin Tech College Dt	Wisconsin	7/27/11	$1,200,000	EE - HVAC - university
Western Wisconsin Tech College Dt	Wisconsin	7/21/10	$1,500,000	Public Education Campaign

Pleasant Prairie Village	Wisconsin	8/16/10	$1,890,000	EE- retrofit - municipal
Jefferson School District	Wisconsin	3/18/11	$2,345,000	EE
Racine Unified School District	Wisconsin	6/10/13	$2,020,000	EE - district buildings
Alma Center-Humbird-Merillan School District	Wisconsin	8/18/11	$4,600,000	EE - schools
Osh Kosh School District	Wisconsin	1/26/11	$1,817,883	EE - schools
Osseo Fairchild School District	Wisconsin	11/1/11	$750,000	EE - schools
Rock Co (Beloit) SD	Wisconsin	8/28/12	$2,215,000	EE - schools
Menasha School Dist (Winnebago County)	Wisconsin	6/28/11	$1,690,000	EE - schools - lighting, boiler system, HVAC, and vending machine upgrades
Dane Co (Mount Horeb) ASD	Wisconsin	4/18/11	$2,500,000	Renewable generation
School Dist Hartford No. 1 (Dodge and Washington Counties)	Wisconsin	4/11/11	$2,295,000	Renewable generation
Total			**$1,076,414,763**	
Note: Abbreviation "EE" is energy efficiency; "HVAC" is Heating, Ventilation, and Air Conditioning.; “GCP” is Green Community Program; and “ESPC” is Energy Saving Performance Contract				

Table 1C: Total Number of Qualified Energy Conservation Bonds Known Issued by Issuer Type (as of December 31, 2014)	
Issuer	**Number of Issuances to Date**
County	53
Higher Education	24
Municipal Agency	9
Municipal Government	48
Private Activity Issuance[121]	8
State/State Agency	15
School District	29
Utility Authority	6
Total	**192**[122]

[121] These issuances are conduit issuances, the actual issuer is a state agency that issues on behalf of the private entity; we have treated them separately from state agencies here for purposes of indicating how many private activity issuances have taken place

[122] Five issuances have issuers that fall into 2 categories or feature co-issuuers. These issuers are counted twice for the purpose of categorizing issuer type and this is therefore reflected in this total which is higher than that indicated on page 2.

Table 1D: Qualified Energy Conservation Bonds Known Issued by Issuer Type (as of December 31, 2014)

Issuer Type Abbreviations:
Co = County
HE = Higher Education
MA = Municipal Authority
MG = Municipal Government
PA = Private Activity Issuance
SA = State/State Agency
SD = School District
UA = Utilities Authority
Note: Where (GCP) follows issuer type, this indicates that the issuer was a state/municipal authority acting as conduit issuer for a project receiving financing via a Green Community Program.

Issuer	**State**	**Issue Date**	**Amount Issued**	**Use of Proceeds**	***Type of Issuer***
Montgomery County Commission	Alabama	6/30/14	$4,350,986	EE- improvements to youth detention facility	*Co*
Montgomery County Commission	Alabama	3/9/12	$4,416,936	EE - government buildings	*Co*
Sonoma County	California	8/6/10	$1,977,500	Renewable generation	*Co*
Kern County	California	4/12/11	$4,337,131	Renewable generation - solar project	*Co*
Yolo County	California	3/16/11	$2,019,214	Renewable generation - solar project - 1MW	*Co*
Santa Barbara County	California	5/25/11	$4,170,000	Renewable generation - solar project at Calle Real campus	*Co*
Santa Clara County Photovoltaic Project	California	2/10/11	$20,368,000	Renewable generation	*Co*
Los Angeles County	California	8/31/11	$14,000,000	Renewable generation - solar projects	*Co*
San Francisco County	California	10/1/11	$8,291,079	EE - retrofit - public facilities	*Co*
Boulder County PACE	Colorado	11/5/10	$1,515,000	GCP C-PACE	*Co*
Boulder County	Colorado	2/2/10	$5,800,000	EE - county buildings	*Co*
Knox County	Indiana	4/12/12	$16,200,000	EE - retrofits - hospital	*Co*
Montgomery County	Maryland	10/3/13	$4,165,000	Equipment Lease Purchase	*Co*
Genesee County	Michigan		$7,815,784	ESPC	*Co*
Osceola County	Michigan		$650,000	EE - county annex building	*Co*
Ottawa County	Michigan		$2,825,981		*Co*
Monroe County	Michigan	6/6/14	$10,500,000	Water - sewer improvements	*Co*
Grant County	Minnesota	2/1/11	$2,000,000	EE - upgrades - courthouse	*Co*
Goodhue County	Minnesota	8/16/12	$1,295,000	EE	*Co*
Itasca County	Minnesota	2/8/11	$3,690,000	EE	*Co*
Greene County	Missouri	3/3/11	$1,130,000	EE	*Co*
St. Louis County	Missouri	4/29/11	$10,305,000	GCP - Green community loan program	*Co*
Albany Co - New York	New York	12/27/12	$1,600,000	EE	*Co*

Chautauqua County	New York	1/19/11	$1,403,470	Renewable generation	*Co*
Jefferson County	Ohio	5/12/12	$658,040	EE	*Co*
Franklin County	Ohio	5/23/13	$3,806,167	EE retrofit	*Co*
Licking County	Ohio	11/20/12	$796,252	EE retrofit	*Co*
Hamilton County	Ohio	10/22/11	$2,063,750	EE retrofit	*Co*
Licking County	Ohio	9/29/11	$2,121,000	EE retrofit	*Co*
Pickaway County	Ohio	12/15/10	$1,479,807	EE retrofit	*Co*
Gresham County	Oregon	7/30/13	$7,600,000	Renewable generation - wind	*Co*
Allegheny County	Pennsylvania	11/22/10	$9,385,000	EE retrofit - municipal facilities	*Co*
Fayette County	Pennsylvania	9/28/11	$1,490,000	ESPC - retrofit - municipal facilities	*Co*
York County	Pennsylvania	12/28/11	$2,200,000	EE retrofit - municipal facilities	*Co*
Lancaster County	Pennsylvania	8/7/13	$5,200,000	EE	*Co*
Lake County	South Dakota	6/1/11	$850,000	Renewable generation	*Co*
Davison County (Mitchell) #17-2	South Dakota	11/10/10	$1,725,000	Renewable generation - wind 1.5 MW turbine	*Co*
Utah County	Utah	10/22/10	$5,000,970	EE	*Co*
Salt Lake County	Utah	7/12/11	$1,917,804	Renewable generation	*Co*
Spotsylvania County	Virginia	7/19/12	$1,240,000	Mass Commuting - commuter train station	*Co*
King Co- Washington	Washington	12/10/12	$6,020,000	EE	*Co*
Yakima County	Washington	9/8/10	$2,430,000	EE - courthouse	*Co*
King County	Washington	11/15/10	$5,825,000	EE - HVAC project	*Co*
Kitsap County	Washington	12/16/10	$1,110,000	Water - sewers	*Co*
Okanogan County	Washington	9/5/13	$1,115,000	EE	*Co*
Thurston County	Washington	10/26/10	$2,040,000	EE - retrofit - municipal	*Co*
Mason County	Washington	12/10/13	$1,620,000	EE - correctional facility	*Co*
Fulton County	Georgia	8/23/11	$5,372,000	Capital improvements - schools	*Co*
Cook County	Illinois	7/23/13	$24,945,000	Capital improvements - county facilities	*Co*
Navajo County/City of Show Lo	Arizona	1/3/12	$723,804	ESPC	*Co/MG*
Wyandotte County/Kansas Unified Govt.	Kansas	11/18/10	$2,530,000	EE - improvements - municipal	*Co/SA*
Ohio University	Ohio	8/1/12	$8,500,000	EE - university	*HE*
University of Akron	Ohio	9/30/13	$15,000,000	EE / renewable generation - lighting, HVAC, & solar	*HE*

Kent State University (Main Campus)	Ohio	5/31/11	$7,000,000	EE and conservation improvements	*HE*
Kent State University (Regional Campus)	Ohio	3/30/11	$2,693,612	EE and conservation improvements	*HE*
Kent State University (Stark Campus)	Ohio	6/11/10	$672,130	EE and conservation improvements	*HE*
Owens State Community College	Ohio	3/18/10	$3,125,000	EE and conservation improvements	*HE*
Kent State University	Ohio	10/25/12	$7,500,000	EE retrofit	*HE*
Ohio State University	Ohio	12/20/12	$2,340,000	EE retrofit	*HE*
Wright State University	Ohio	2/28/13	$8,312,700	EE retrofit	*HE*
Central State University	Ohio	5/16/13	$7,000,000	EE retrofit	*HE*
Yuba College Central Plant Efficiency Project	California	6/3/11	$6,324,000	EE - university	*HE*
Yuba Community College	California	6/21/11	$15,040,000	Renewable generation	*HE*
Regents of the University of Colorado	Colorado	10/20/10	$4,375,000	EE - university - cooling systems	*HE*
Western State College	Colorado	8/19/10	$1,635,000	EE - university	*HE*
Colorado School of Mines	Colorado	4/12/11	$2,800,000	ESPC - university	*HE*
Southern Illinois Univ. Bd of Trustees	Illinois	12/6/12	$5,365,000	EE	*HE*
Illinois Central College / Tazewell County	Illinois	3/13/14	$1,300,000	Sustainability Center	*HE*
Ivy Technical Community College	Indiana	10/1/10	$3,300,000	EE - retrofits - hospital	*HE*
University of Kentucky	Kentucky	11/19/10	$12,955,000	ESPC - university	*HE*
University of Louisville	Kentucky	12/20/10	$20,942,000	ESPC - university	*HE*
University of Nebraska	Nebraska	4/1/14	$4,325,000	EE - university - energy monitoring system	*HE*
Western Wisconsin Tech College Dt	Wisconsin	1/27/11	$1,500,000	EE - HVAC - university	*HE*
Western Wisconsin Tech College Dt	Wisconsin	7/27/11	$1,200,000	EE - HVAC - university	*HE*
Western Wisconsin Tech College Dt	Wisconsin	7/21/10	$1,500,000	Public Education Campaign	*HE*
Boulder Housing Partners	Colorado	8/25/10	$1,443,881	ESPC - public housing	*MA*
Roaring Fork Transportation Authority	Colorado	8/21/12	$6,650,000	GCP -Clean Energy Buses	*MA*
Roaring Fork Transportation Authority	Colorado	11/21/13	$1,300,000	GCP - Clean Energy Buses	*MA*
Foothills Park & Rec Dt	Colorado	8/13/10	$1,000,000	ESPC - parks and recreation	*MA*
Portland Housing Authority, Portland	Maine	6/7/13	$4,097,100	EE improvements	*MA*
New Hope Economic Development Authority	Minnesota	11/18/11	$3,505,000	EE	*MA*

Washington County Housing and Redevelopment Authority	Minnesota	2/22/12	$2,375,000	ESPC	*MA*
Philadelphia Municipal Authority	Pennsylvania	5/11/12	$6,250,000	Retrofit - city facilities -ESPC	*MA*
GreenFinanceSF (City and County of San Francisco)	California	Oct-12	$1,400,000	GCP - EE / renewable energy upgrades - multi-tenant commercial buildings - C-PACE	*MA (GCP)*
City of Trussville	Alabama	4/20/14	$2,485,000	EE - lighting - sports complex	*MG*
Scottsboro- City	Alabama	11/29/12	$5,750,000	EE - retrofit - schools	*MG*
City of Foley	Alabama	1/30/13	$2,900,000	EE - retrofits - citywide	*MG*
City of Vestavia Hills	Alabama	5/15/13	$4,245,000	EE - lighting - sports fields	*MG*
Tempe	Arizona	7/1/11	$7,300,000	EE/Water	*MG*
Tucson City	Arizona	6/9/11	$1,430,000	EE	*MG*
Tucson City	Arizona	6/23/10	$5,590,000	EE / Renewable generation	*MG*
Somerton	Arizona	11/22/11	$980,000	Renewable generation	*MG*
Richmond	California	12/1/10	$1,070,000	GCP - lighting - streetlights and municipal capital improvements	*MG*
San Diego	California	4/15/11	$13,141,596	GCP - lighting conversion program	*MG*
City of Los Angeles	California	10/25/11	$11,920,000	EE - retrofit - city facilities	*MG*
City of Boulder	Colorado	9/27/10	$1,500,000	ESPC - municipal buildings	*MG*
City of Englewood	Colorado	9/15/10	$1,286,440	Capital improvements - municipal	*MG*
Fort Collins City	Colorado	6/28/10	$6,410,000	Smart Grid	*MG*
East Hartford	Connecticut	4/10/10	$6,000,000	ESPC - municipal buildings	*MG*
Waterbury City	Connecticut	8/11/10	$4,700,000	EE - municipal	*MG*
City of Chicago	Illinois	11/4/10	$29,665,000	Water - wastewater reclamation facility reconstruction	*MG*
Deerfield	Illinois	9/26/11	$12,500,000	Water - wastewater capital improvement	*MG*
Village of Bensenville	Illinois	11/18/14	$6,815,000	EE - Police station	*MG*
Louisville-Jefferson County Metro Govt.	Kentucky	9/14/10	$7,400,000	EE improvements - government	*MG*
City of Houston	Texas	7/2014	$9,000,000	EE retrofit - libraries and city facilities	*MG*
Belchertown	Massachusetts	9/20/11	$3,140,000	EE	*MG*
Georgetown	Massachusetts	10/18/12	$2,199,000	EE	*MG*
Lowell City	Massachusetts	12/2/11	$2,648,000	EE	*MG*
South Hadley	Massachusetts	12/18/13	$1,901,000	ESPC - municipal buildings	*MG*
City of Northampton	Massachusetts	12/22/10	$1,698,790	EE improvements - public buildings	*MG*

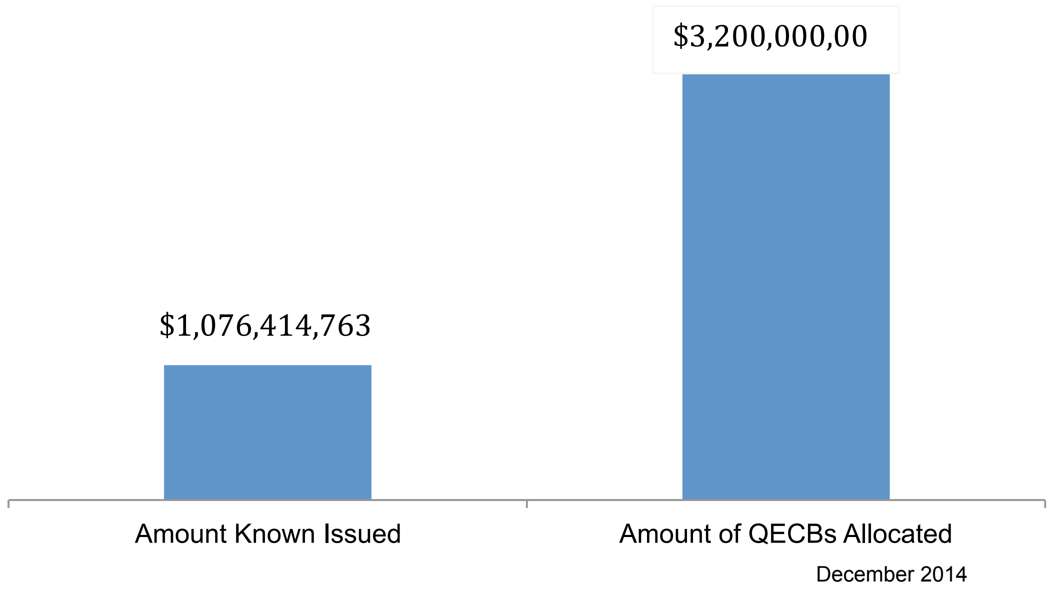
Town of Gill	Massachusetts	8/25/11	$127,500	ESPC - schools	*MG*
Town of Marshfield	Massachusetts	7/2/12	$5,000,000	ESPC - schools and public buildings	*MG*
Lancaster Town	Massachusetts	9/18/12	$1,484,000	Renewable Generation	*MG*
Saginaw	Michigan	12/20/10	$2,088,779	EE improvements - county facilities	*MG*
City of Greenville	Michigan		$800,000		*MG*
Gilbert City	Minnesota	6/24/12	$350,000	EE	*MG*
City of Reno	Nevada	6/1/10	$2,261,650	EE retrofit - municipal - Reno City Hall	*MG*
Las Vegas	Nevada	3/16/11	$5,874,300	GCP (streetlights) / EE - municipal buildings	*MG*
Manchester	New Hampshire	11/1/10	$1,129,348	EE - schools	*MG*
Rochester City	New York	6/16/10	$2,166,400	EE - HVAC replacement	*MG*
City of South Euclid	Ohio	8/31/11	$386,145	EE	*MG*
City of Trotwood	Ohio	4/12/12	$883,361	EE	*MG*
City of Akron	Ohio	8/15/13	$2,355,914	EE - municipal facilities	*MG*
Findlay	Ohio	6/30/11	$518,010	EE retrofit	*MG*
Rapid City	South Dakota	11/1/11	$4,000,000	EE/ Renewable generation - schools	*MG*
Norfolk	Virginia	11/7/13	$2,470,000	EE - municipal	*MG*
Bellingham City	Washington	4/13/11	$6,480,000	EE	*MG*
Renton	Washington	7/1/13	$3,200,000	EE - lighting - LED Streetlights	*MG*
Longview	Washington	4/18/13	$3,560,000	EE - retrofit - municipal facilities and vehicles	*MG*
Pleasant Prairie Village	Wisconsin	8/16/10	$1,890,000	EE- retrofit - municipal	*MG*
Nashville and Davidson County	Tennessee	8/15/12	$6,440,000	EE	*MG/Co*
Colorado Housing Finance Authority (private issuance)	Colorado	4/20/12	$6,775,000	Renewable generation - solar - 2.5 MW PV project for Denver Housing Authority	*PA*
Colorado Housing Finance Authority (private issuance)	Colorado	8/30/13	$4,900,000	Renewable generation - solar - Denver Airport, City of Greeley, CO Dept of Corrections	*PA*
Development Authority of Fulton County/MAS ASB Cogen, LLC Project	Georgia	5/11/12	$16,934,000	CHP generating facility	*PA*
Lawrence City	Kansas	3/10/11	$8,720,000	Renewable generation	*PA*
Cathartes Private Investments/ Westford Solar	Massachusetts	8/22/11	$5,800,000	Renewable generation	*PA*
Fairhaven Wind	Massachusetts	11/7/11	$3,035,957	Renewable generation	*PA*

Scituate Wind/Town of Scituate	Massachusetts	8/10/11	$1,531,480	Renewable generation	*PA*
Swauk Creek Ranch (WSHFC)	Washington	12/27/12	$9,000,000	Renewable generation - wind	*PA*
Arkansas Development Finance Authority	Arkansas	5/23/13	$4,630,000	ESPC	*SA*
Kansas Development Finance Authority	Kansas	12/21/10	$17,815,000	ESPC - university (KSU)	*SA*
Department of Corrections	Louisiana	12/15/11	$30,318,244	EE	*SA*
NYSERDA	New York	8/13/13	$24,300,000	GCP - NYSERDA's Green Jobs - Green NY program- Residential EE loans	*SA*
State of Oregon	Oregon	6/26/14	$2,080,000	EE-public service facilities	*SA*
Commonwealth of PA Department of Corrections	Pennsylvania	9/30/10	$15,810,000	ESPC - equipment purchase - prison system	*SA*
Missouri Clean Energy Program/Wornall Plaza Condominiums	Missouri	11/6/14	$571,430	GCP - PACE program, Wornall Plaza Condominiums, Kansas City	*SA (GCP)*
Avery Solar	North Carolina	3/20/12	$1,977,702	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP	*SA (GCP)*
Mayberry Solar	North Carolina	5/15/12	$2,215,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP	*SA (GCP)*
Sandy Cross Solar	North Carolina	8/29/12	$1,200,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP	*SA (GCP)*
Progress Solar I	North Carolina	2/6/13	$2,100,000	GCP - Solar installation on agricultural land -North Carolina Agricultural Finance Authority GCP	*SA (GCP)*
SC Saves/Randolph Trucking	South Carolina	5/24/14	$2,000,000	GCP - gas compressed vehicles for truck company	*SA (GCP)*
Washington State Housing Finance Commission/Town and Country Market	Washington	3/6/14	$1,150,000	GCP - Kitsap County - Town & Country Market retrofit	*SA (GCP)*
State of Maryland - St. Mary's County Public schools - Leonardtown Middle School	Maryland	7/27/11	$6,500,000	Capital improvements - schools	*SA/SD*
Madison County Board of Education	Alabama	11/18/13	$5,647,153	EE- schools	*SD*
Madison County Board of Education	Alabama	7/3/13	$9,530,250	EE- schools	*SD*
Osceola County School District	Arkansas	11/1/13	$4,495,000	EE - schools	*SD*
Irvine Unified School District	California	7/29/10	$4,840,000	EE - schools	*SD*
Lodi Unified School District Project	California	11/18/10	$9,915,000	Renewable generation - solar improvements in schools	*SD*
Oxnard Union High School District Project	California	9/29/10	$19,067,730	Renewable generation - solar improvements in schools	*SD*

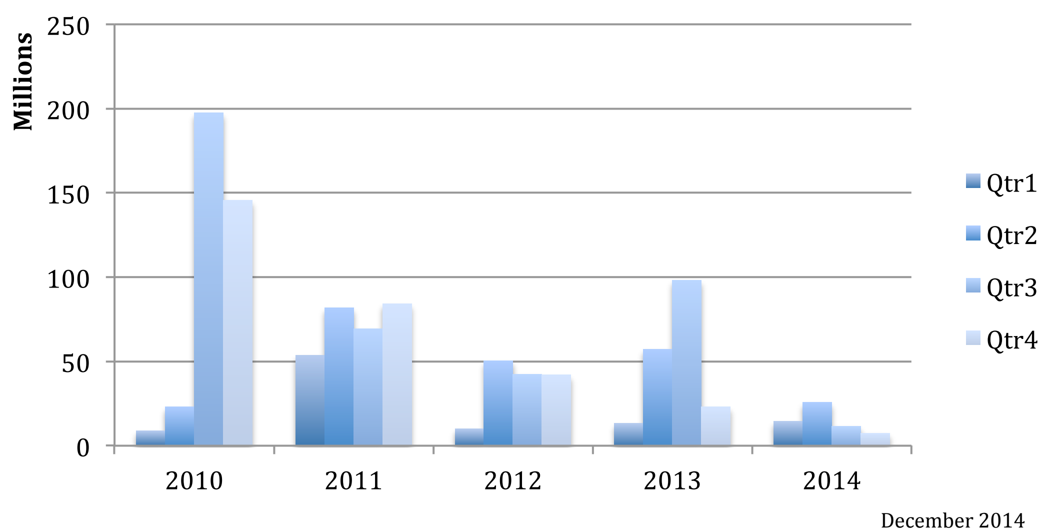
Mesa County School District #51	Colorado	10/29/10	$2,000,000	EE - schools - lighting/HVAC	*SD*
Champaign Cty (Rantoul) Township High School District 193	Illinois	12/20/10	$120,000	Capital improvements - schools	*SD*
McHenry CCSD	Illinois	8/31/11	$1,500,000	EE - schools	*SD*
Champaign Cty School District 116 (Urbana)	Illinois	12/14/10	$585,000	EE/Water - upgrades to water system	*SD*
Grant Schools	Michigan		$995,000	EE- Schools	*SD*
Hamshire-Fannet ISD	Texas	7/2014	$2,608,093	EE schools	*SD*
Pentucket Regional School District	Massachusetts	10/21/11	$4,567,510	EE - schools	*SD*
ELY ISD #696	Minnesota	5/19/11	$2,810,000	EE - schools	*SD*
Billings High SD #2	Montana	7/12/12	$3,780,000	EE - schools - HVAC, windows, and roof upgrades	*SD*
Billings SD #2	Montana	7/12/12	$4,554,000	EE - schools - HVAC, windows, and roof upgrades	*SD*
Williams Co (Edgerton) LSD	Ohio	2/23/12	$595,000	EE- School improvements	*SD*
Tri-Valley School District	Pennsylvania	12/30/13	$1,500,000	EE - schools	*SD*
Jefferson School District	Wisconsin	3/18/11	$2,345,000	EE	*SD*
Racine Unified School District	Wisconsin	6/10/13	$2,020,000	EE - district buildings	*SD*
Alma Center-Humbird-Merillan School District	Wisconsin	8/18/11	$4,600,000	EE - schools	*SD*
Osh Kosh School District	Wisconsin	1/26/11	$1,817,883	EE - schools	*SD*
Osseo Fairchild School District	Wisconsin	11/1/11	$750,000	EE - schools	*SD*
Rock Co (Beloit) SD	Wisconsin	8/28/12	$2,215,000	EE - schools	*SD*
Menasha School Dist. (Winnebago County)	Wisconsin	6/28/11	$1,690,000	EE - schools - lighting, boiler system, HVAC, and vending machine upgrades	*SD*
Dane Co (Mount Horeb) ASD	Wisconsin	4/18/11	$2,500,000	Renewable generation	*SD*
School Dist Hartford No. 1 (Dodge and Washington Counties)	Wisconsin	4/11/11	$2,295,000	Renewable generation	*SD*
Morton County (Mandan S.D.)	North Dakota	2/9/2011; 5/4/2011	$3,780,000	EE - schools	*SD/Co*
Los Angeles Dep't of Water & Power	California	6/4/13	$27,855,000	EE - university	*UA*
Los Angeles Dep't of Water & Power	California	8/17/10	$131,020,000	Renewable generation - solar & wind	*UA*
Fallbrook Public Utility District Project	California	11/18/10	$7,227,000	Renewable generation - solar improvements	*UA*
Rancho Water District Financing Authority	California	11/7/11	$9,870,000	Water / wastewater capital improvement	*UA*
Nebraska Utilities Corp	Nebraska	2/6/14	$5,500,000	Renewable generation - renewable energy system for university	*UA*

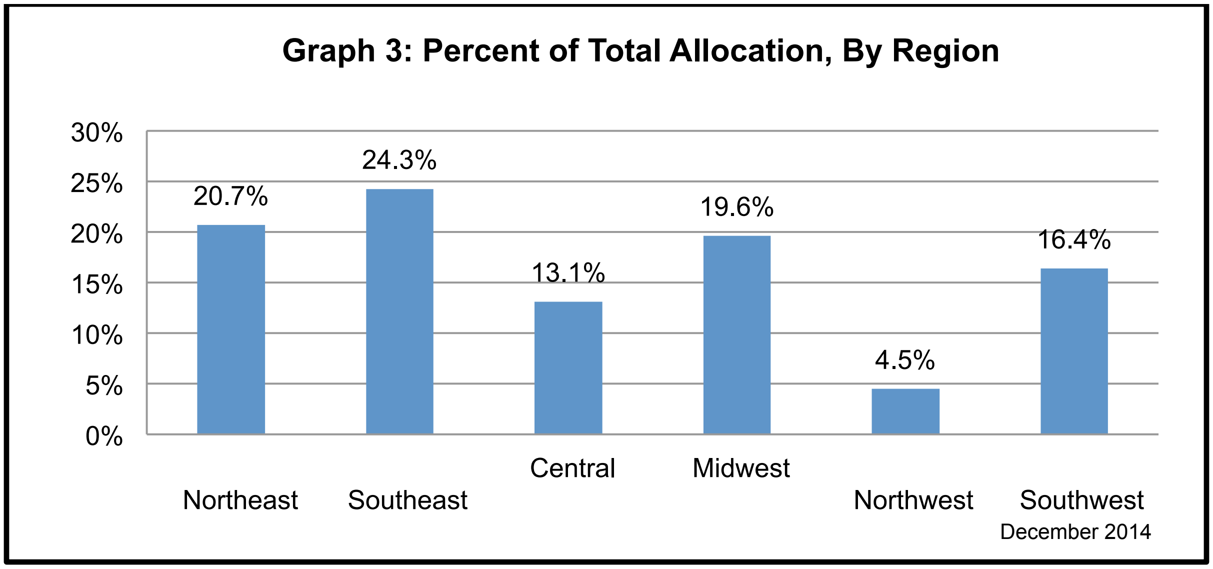
Nebraska Utilities Corp	Nebraska	2/1/14	$6,500,000	Renewable generation - renewable energy system for university	*UA*
Total			**$1,076,414,763**		

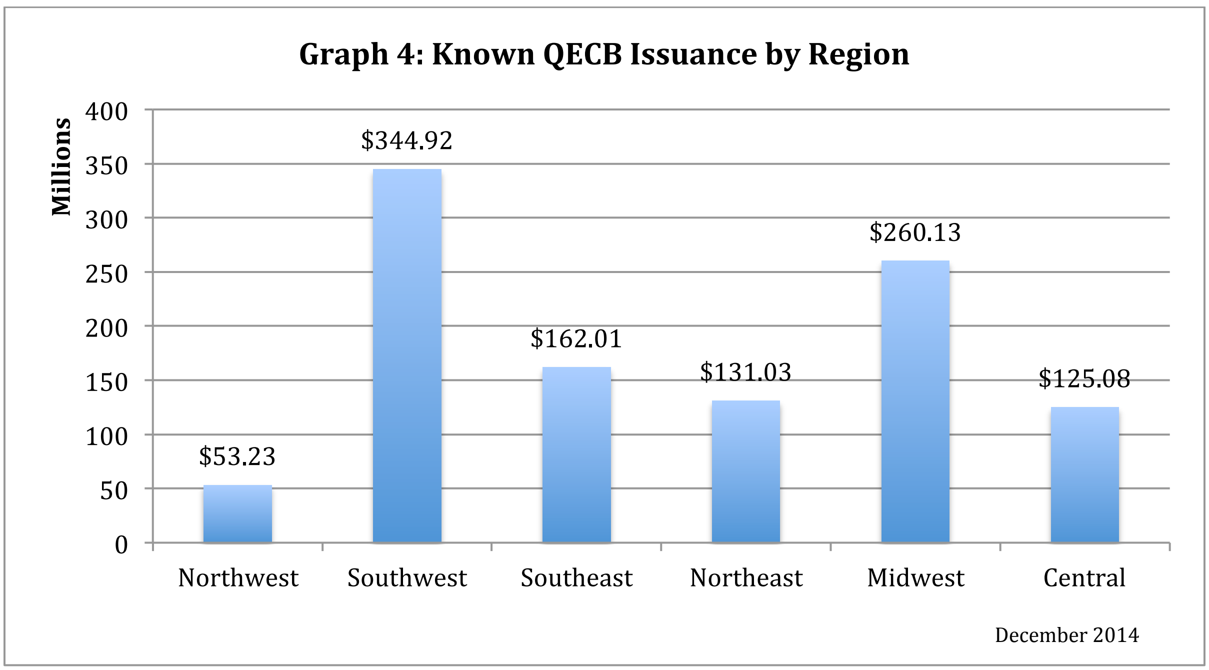
Graph 1: QECBs Known to be Issued v. Allocated

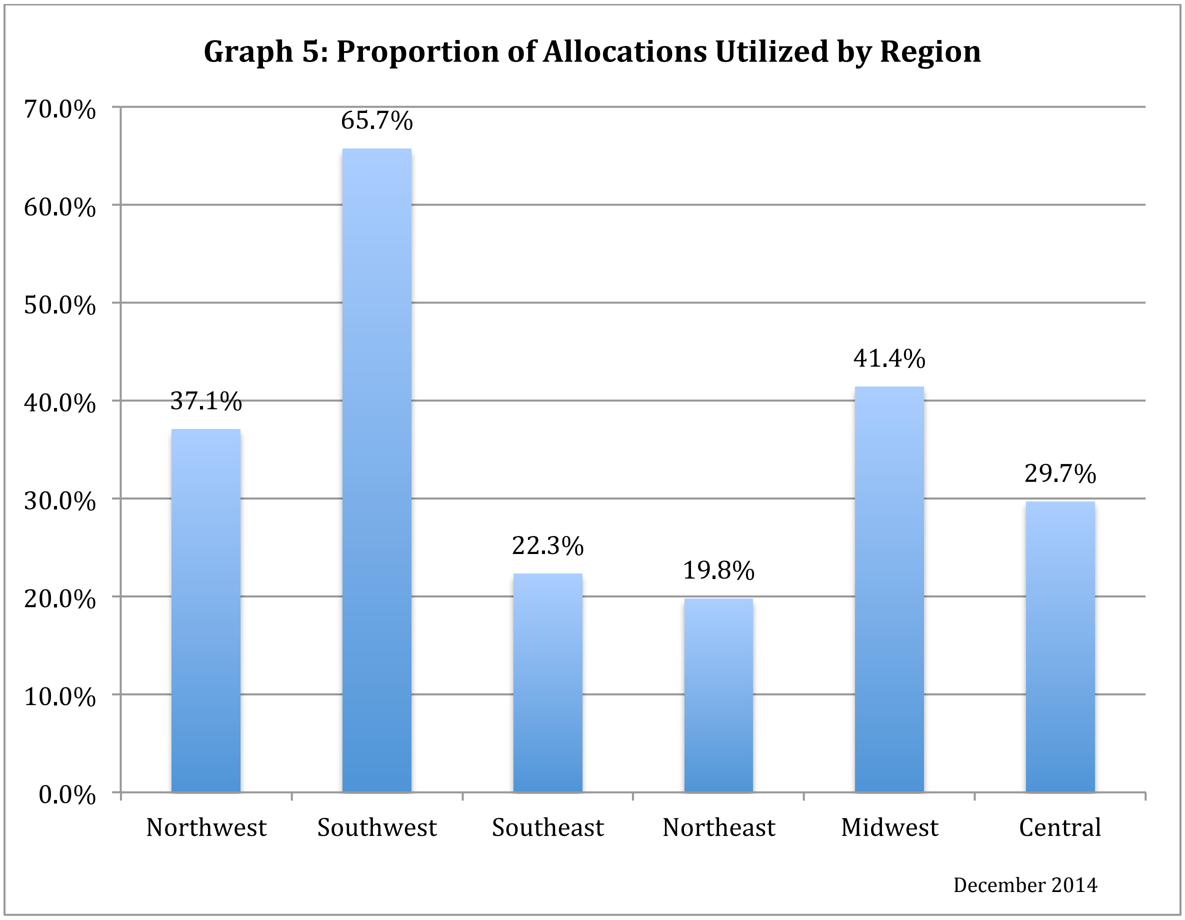


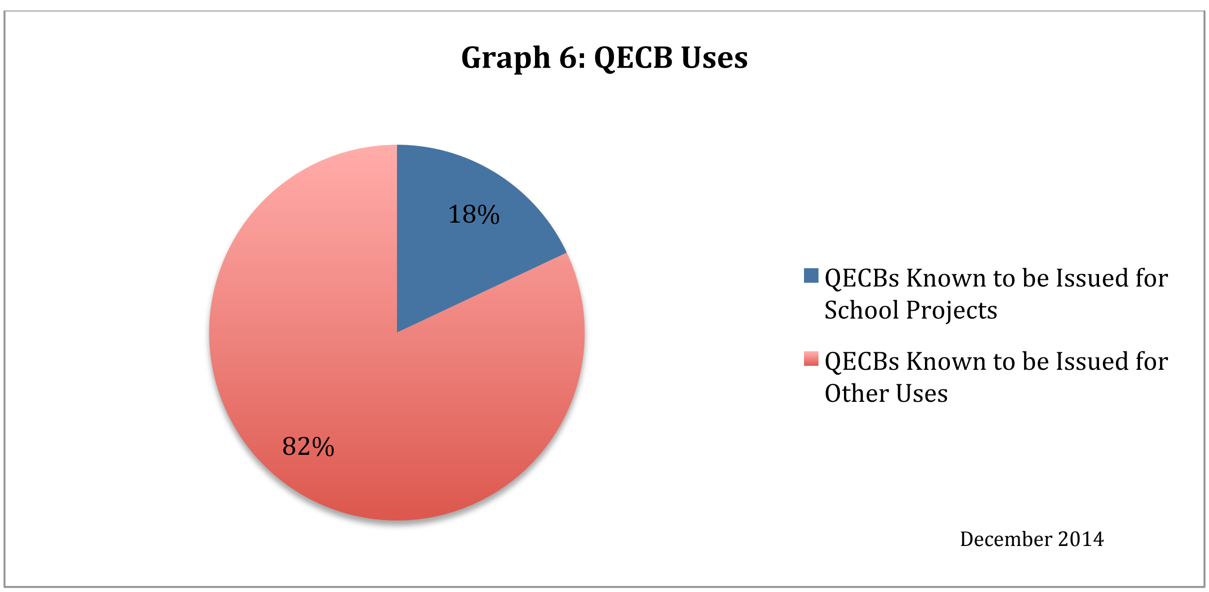
Graph 2: Amount of QECBs known to be Issued by Quarter




Graph 3: Percent of Total Allocation, By Region
30%
25%
20%
15%
10%
5%
0%
20.7%
24.3%
13.1%
19.6%
4.5%
16.4%
Northeast
Southeast
Central
Midwest
Northwest
Southwest
December 2014


Graph 4: Known QECB Issuance by Region
Millions
400
350
300
250
200
150
100
50
0
$53.23
$344.92
$162.01
$131.03
$260.13
$125.08
Northwest
Southwest
Southeast
Northeast
Midwest
Central
December 2014


Graph 5: Proportion of Allocations Utilized by Region
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
37.1%
65.7%
22.3%
19.8%
41.4%
29.7%
Northwest
Southwest
Southeast
Northeast
Midwest
Central
December 2014


Graph 6: QECB Uses
18%
82%
QECBs Known to be Issued for School Projects
QECBs Known to be Issued for Other Uses
December 2014