

*Mark Zimring:* Welcome everybody. Thank you very much for joining us today for the Qualified Energy Conservation Bonds Updates From the Field webinar. This is Mark Zimring from Lawrence Berkeley National Lab. Before we jump into today's presentations, I want to take a minute to describe the Department of Energy Technical Assistance Program. TAP is managed by a mean of DOE's Weatherization and Intergovernmental Program Office of Energy Efficiency and Renewable Energy. The Department of Energy's Technical Assistance Program provides state, local, and tribal officials the tools and resources needed to implement successful and sustainable clean energy programs. From one-on-one assistance to an extensive online resource laboratory, to facilitation of peer exchange of best practices and lessons learned, TAP offers a wide range of resources that serve the needs of state, local, and tribal officials.

These technical assistance providers can provide short-term, unbiased expertise in energy efficiency, renewable energy, program design and implementation, financing, performance contracting, and state and local capacity building. In addition, they are providing one-on-one assistants who are available to work with grantees at no cost, to facilitate peer-to-peer matching workshops and trainings. We also encourage you to visit the TAP blog, the platform that allows states, cities, counties, and tribes to connect with technical and program experts and to share best practices. The blog is frequently updated with energy efficiency and renewable energy related-posts. And we also encourage you to visit the Solution Center or the Technical Assistance Request Center. A request for direct assistance can be submitted online via the weblink above, or at 1-877-EERE-TAP.

So before we start, I want to mention two webinars that are upcoming this week. The first is tomorrow, and it involves developing an evaluation measurement and verification program. And the second is on benchmarking and that's on Wednesday. We have a really exciting lineup today. Before I introduce them, I wanted to note two quick things. First, questions can be submitted via the box on your right. Just click on the Questions tab and we'll respond to as many as we can at the end of the webinar. And the second is that this webinar will be available online on the DOE Solution Center in about a week.

So Elizabeth Bellis from Energy Programs Consortium will give us a quick overview on QECBs, and discuss issuance trends. Then we'll get case studies from the folks in St. Louis County and Boulder County on how they've used qualified energy

conservation bonds. Keith Reller from Johnson Controls will talk about how QECBs can be used in conjunction with performance contracting, and then we'll finish with a case study from Jason Tomlinson. When we finish with the case studies, we'll then take as many questions as we can. So, while Elizabeth will be providing a brief overview of QECBs, there are lots of resources available. These include a chapter at the DOE Clean Energy Finance Guide, a webinar that we did in September of 2010, and the DOE QECB and CREB Primer.

So with that said, let's dive in. Elizabeth Bellis directs the QECB program at Energy Programs Consortium, in conjunction with the National Association of State Energy Officials. She also manages EPC's legal and related program design work to create a secondary market for residential energy efficiency loans, otherwise known as WHEEL. Prior to joining EPC, Elizabeth was an associate in the tax department at Debevoise – I hope I've done that justice – and Plimpton LLP in New York. She holds a J.D. from Harvard Law School. Take it away, Elizabeth.

*Elizabeth:*

Thanks, Mark. This is Elizabeth speaking from Energy Programs Consortium. *[Silence in audio from 04:29:00 to 04:42:02]* our type of tax credit bond. There are a number of different tax credit bonds out there. QECBs are just one of them. Now, originally QECBs were only a tax credit bond, or they didn't allow any cash subsidy payment, so not too many people were issuing bonds when the issuers had to have a tax liability in order to get the benefits. So in March 2010, the rules were revised, and now there's a direct subsidy payment option that an issuer can elect, where the Treasury actually pays cash directly rather than having the purchaser have to fill out paperwork and have a tax liability to get the benefits.

The amount of the subsidy for QECBs is quite significant. Some of you may be familiar with Build America Bonds which are also a subsidized bond. The subsidy on QECBs is actually twice that of a Build America Bond, and it's generally correlated with the yields on Treasury. So it historically has ranged from about 3.3% to 4.1%, which means that the cost to the issuer, of issuing these bonds, is about 1 to 1.5 percent, or it has been historically. Now, in many cases, because that issuance cost is so low, issuers have actually reported that their cost savings from reducing their energy usage have actually been sufficient to pay the principal and the interest costs of issuing the bond. One of the officials that I spoke to about this said that when they did the math, they realized the bonds were actually just a no-brainer for his jurisdiction because

they ended up paying for themselves, and I'm sure Johnson Controls may speak a little bit more about that.

Let's see. QECBs are fairly long-term financial options. The maximum amount of time that they can be outstanding, which is called the maturity, is set by the government and has been ranging from 12.5 to 19 years. You can find up-to-date QECB subsidy rates and maturities online at the URL that I've included in my slide, and right now the interest subsidy is 3.78 percent and the maturity is 15 years, so it's just right about smack dab in the middle of the range that we've seen for these bonds. Next slide please.

All right. So what can you do with these QECBs? So far to date, states and local governments have funded at least 35 projects in 14 different states. These projects range from replacing HVAC systems in government-owned buildings to retrofitting public housing, from building a wind turbine at a technical school in South Dakota, to building an entire renewable plant in Los Angeles, from improving a recreational center to even a commercial PACE program in Colorado.

So the four main categories of QECB issuances are all under this general term of qualified conservation purposes. The bonds must be issued for one of these four general catch-all categories. The first is reducing energy consumption in publicly-owned buildings by at least 20 percent. The second is implementing green community programs, and there are also a couple of renewable purposes, which I think \_\_\_\_\_ and \_\_\_\_\_ although the largest issuance, one of the largest issuances we've seen to date has been in Los Angeles to build a wind and solar facility.

The most common project type so far that we've seen has been the municipal building retrofit. Some examples include Tucson, Arizona; Englewood, Colorado; Hartford and Waterbury City in Connecticut; Wyandotte County in Kansas; and I think King County, Washington as well. That should name a few. There are also a fair number of school and university issuances, including Western State College, University of Colorado, Mesa County School District in Colorado, Kansas State University, and, of course, the University of Louisville in Kentucky, and you'll hear more about those \_\_\_\_\_ later on in this webinar.

One note for those of you that might be interested in school projects is that states often also have, states and local restrictions

may have an allocation of qualified school construction bonds, which are another subsidized bond that might be issued in conjunction with QECBs, or in lieu of QECBs, in case there are other projects that only QECBs could be used to fund. Recently issuances have been down. There might be various reasons for that including some difficulties in the foreign market and in the \_\_\_\_ in general \_\_\_\_ \_\_\_\_ last month. But the data we have only shows public issuances and not private placements, so it's possible that there are more private placement still coming out that we just don't have information on at this point.

Now, originally back in 2009, it was a \$3.2 billion allocation and of that, we that as much as \$2.7 billion of funding may remain, so there's a lot of money left to be used here. Next slide please.

So if this sounds good, and if the large subsidy and long maturity and lots of different uses sounds like it might be something you could use, you might be asking, okay, how do I get started with these Qualified Energy Conservation Bonds? I guess the first step would be, of course, to check the amount of your state or local jurisdiction's allocation, and presumably also to check its remaining allocation if there's another issuer that's been using them. Check the bond rating of your would-be issuer. This is particular important as issuers with poor bond ratings may be difficulty placing their bonds \_\_\_\_ \_\_\_\_ \_\_\_\_, and the financing costs may be higher as a result.

Third, if this is the first issuance, it may come to identifying how you go about authorizing a particular entity to issue or handle allocations in your jurisdiction. Bond counsel can assist in this process but, as a general matter, we're seeing most \_\_\_\_ either doing some sort of legislative action or issuing executive orders or both, in some cases. Next you'll be taken \_\_\_\_ by the project or projects you want to finance. This you might do by requesting applications, if there is not already a project in mind, or you might simply have a project in mind that you would go ahead and want to run by your bond counsel to see if it would qualify as a qualified conservation purpose.

And then you'd want to select your professionals, your legal and financial professionals, and also your contractors. Now, most jurisdictions do this through a competitive bid or an RFP process to maybe \_\_\_\_ \_\_\_\_ from other types of bond issues. But so far it sounds like most people haven't had too much trouble finding people that are **competent** to these bonds.

And then finally, just a note that if the process that you wish to finance is under the green community program \_\_\_ is attached, you'll want to allocate additional time and make sure that you speak with your bond counsel to make sure that you're meeting the requirements for those types of issuances, because they do have some legal complications to doing them as compared to the sort of standards and the more retrofit. I think that's about all I have. \_\_\_  
\_\_\_ \_\_\_.

*Mark:* Good. Thanks, Elizabeth. I've included Elizabeth's contact information, and again, these slides will be available on the DOE Solution Center in about a week. So next up, Anne Klein, is the Director of Energy Sustainability for St. Louis County. In addition to managing the county's \$8.4 million Energy Efficiency and Conservation Block Grant awarded the DOE, Anne serves as a liaison with local, regional, and state jurisdictions, utilities, agencies, and the public at large, implementing a broad-reaching sustainability framework plan called "St. Louis County Green and Growing." That is a lot. Anne is a graduate of the University of Vermont and has a master's degree in Public Policy from American University.

*Anne:* Okay. Thanks, Mark, and thank you for asking me to speak. I'm going to kind of go quickly through some of my first few slides because some of that was already covered, so if we could go to the next slide, Mark? As Mark said when he introduced me, we've received \$8.4 million in EECBG money. We have 21 activities out of those that we have selected. My position is one of those 21 activities. Mark, if you could go to the next slide.

Of the original activities that we selected, two that we had focused on that had an external outreach were a Neighborhood Stabilization Program and our Residential Energy Audit Incentive program. We had 40 percent of our funds that we used for what we called externally focused programs and 60 percent focused on our own operations such as boiler replacement, HVAC, things like that. So if you could go to the next slide, Mark.

We ran into problems with the Neighborhood Stabilization Program. If we were to use these funds for that program, which is \_\_\_ you are not familiar with our program, also funded under this stimulus, that was buying or closed-upon homes, rehabbing them, and then putting them back on the market, and we were going to use these funds to increase the energy efficiency of those homes. Because Davis Bacon came into play it kind of blew the budgets on those, and our folks in community development said, "Thanks

but no thanks. We don't want your money." So we scrapped that, and then when we were looking at the Residential Audit Incentive program, that was about the time that PACE was going through our legislature here at the state, so we started looking at PACE. If you could go to the next slide.

The enabling legislation did pass the state legislature and the county was neutral on PACE as it went through the legislature, but when I came onboard I started to do some research and there was a lot of interest by many of our local municipalities, so we decided PACE was the answer because it would create jobs right here and right now, and it was an ability to reach all residents. So, next slide.

As you all know, I'm sure, the final blow to PACE was dealt in July, so that quickly became an issue. If you could go to the next slide. My project officer and many people were talking about doing a Loan Launch Reserve program, or putting money toward a revolving loan fund. Because so many of my funds were already allocated to other projects, I didn't feel that I had enough to support to a very big revolving loan fund, given that our population in the county is one million people. The Loan Loss Reserve Fund, I thought that the interest rates looked a little too high, and I was leery of having banks drive these. I don't know if anybody's familiar with Missouri but we're the Show Me State and pretty much we wait until everybody else has done something, see if they sail or \_\_\_\_, and then maybe we'll take a look at it, so I figured there might be some hesitation about going with banks. Next slide.

So my alternative to PACE was looking at big qualified energy conservation bonds. From the two programs that we scrapped, we had \$500,000 of EECBG fund. The county also has a AAA bond rating, and we had access to \$10.3 million in QECBs – that was our allocation from the state, based on population. Next slide. So this was kind of already covered, basically what the QECBs are, so we can kind of go to the next slide here.

This is actually from some of the data I think that Mark pointed out at the beginning, so we can go to the next slide. And obviously this is what I latched onto, was implementing green community programs, including loans for other repayment mechanisms. So, next slide. This was my initial thought. It was put together a Residential Energy Efficiency Loan Program. It would be an unsecured loan. We're looking at maximums of about \$15,000 – that's not set in stone at this point. Our market, because of default rates and other things associated with unsecured loans, we're

looking at homeowners with FICA scores of 660 or higher, and debt-to-income ratios of 50 percent or less. We are looking at a fixed rate not to exceed five percent and a repayment term for individuals of ten years, and this would only be for owner-occupied homes, single family homes. That was my initial thought. Actually, my initial thought was a lower interest rate, but that interest rate seems to keep creeping up, based on servicing and other \_\_\_\_ that have come into play. So if you want to go to the next slide.

Once I had thought about this and put that initial schematic together, and talked to Mark Zimring at length – who I think got tired of hearing from me after awhile – started talking to our financial people with the county, and just kind of getting some ground rules set up, and then I presented to our county executive and our chief operating officer for the county, and these were the questions that came to them right away. First off, why not do a home equity loan? If these people have good credit scores, doesn't it look bad for us to be helping people who maybe already are middle or upper-middle income? Is there a demand for this, and, of course, what was the county's liability? So, if you want to go to the next slide.

Upon looking at home equity loans, home values here have fallen and assessments have gone down, and therefore a lot of people have lost equity that they may have had in their homes. We found that in the home equity market here, the minimum loan amounts were pretty high. They were really only open to about \$20,000 and above, so we thought we could supply a product that would be better for individuals who are focusing on energy efficiency improvements only, that would be a smaller amount. And we also thought we could offer a better interest rate than what's in the market. Next slide.

In terms of why give loans to people who are already middle or upper-middle income, we already have a few financing options available that many communities, I know, do as well. We have our Weatherization Assistance Program, which is available to households with incomes at or below 200 percent of federal poverty. We have our Community Development Block Grant Program, which offers home improvement loans that are forgivable to individuals that are below 80 percent of the area median income. I thought this offered something to those who don't fall in those low to low-mod incomes. You can see, originally in this slide it says less than four percent financing, and that's kind of gone up, as

I've indicated before. So that's kind of rounded out our portfolio, I thought, of options for individuals in our community. Next slide.

Upon looking at public demand, the question of is there really a demand for this, we had very strong support for PACE from many of our municipalities in the county, and from many of the leaders in the county. And then I also really worked a lot with Mark, actually, to look at the success of other programs. Looked at Keystone, which is the Pennsylvania program, the New York State program, Sacramento program, kind of looking at all of the different programs and see how quickly they got money out the door, to see what the demand was.

All those programs were different than this in many ways, but I thought it gave a good picture of the fact that there is demand out there for people to do energy efficiency improvements to their home. We also had a program here in Missouri called Energize Missouri Homes, and it was a rebate program rather than a loan program. But they went through their money in a matter of weeks, so I thought that that was another good indicator of the demand for it. Next slide.

Default rates was the next kicker. Obviously, in order to model anything, I needed to have a reasonably expected default rate. Surprisingly, the default rates were very low, once you get to a FICA score of 650 or above. Worked a lot with Mark in and around this, but found out that most programs are at or below five or three percent. The Federal Reserve data, actually, that I looked at then, gave consumer loan charge-off and delinquency rates. It's something that anybody can find online if they're looking at the Federal Reserve data, and those rates were surprisingly very low for unsecured loans as well. And so, having answered those questions to the higher-ups, we kind of moved on from there, and Mark, if you want to go to the next slide.

We have run into some problems. All these dates that you're looking at right now have been pushed back. We have relied heavily on our bond counsel and we have gone out for an RFP for professional development, but getting all this through our county council has taken a little longer than anticipated. So now we're looking at a bond closing date that's closer to middle to end of May, and I'm hoping to start loaning money at the beginning of June. So that's about it, and here's my contact information. If anybody would like to discuss this further, I'd be happy to give you more of the details on how this is all taking form.

*Mark:* Great. Thank you so much, Anne, and I'm sure there will be lots of questions for you during the Q&A period that follows. So our next presenter is Larry Hoyt. Larry Hoyt has served as Boulder County Attorney since 1986. He graduated with honors from the University of Colorado and received his law degree from the University of Denver College of Law. He has lectured extensively on local government law issues, with particular emphasis on government finance, environmental law, civil rights, and intergovernmental relations. He has published and edited several articles and book chapters on issues like the state and local immigration control and on federalism and the Tenth Amendment. He has written an upcoming book chapter on federal preemption on green, energy efficiency, building code provisions. And we will get his audio restored. Okay Larry, please take it away.

*Larry:* Okay, great. Thanks, Mark. Can you hear me?

*Mark:* Yep.

*Larry:* Okay. Good. So I wanted to note, first off, with the first slide here that I'm really only talking about the Boulder County QECCB finance project. We do have currently also a \$12 million \_\_\_\_ total \$25 million EECBG grant, with which we are creating programs, like an Energy Efficiency Concierge program, mobile \_\_\_\_ project program, mini-loans program that would be essentially unsecured, sub-\$3,000 loans to folks in the county to do energy efficiency and renewable energy projects – mostly the former, of course. And then also a PACE program that would involve a revolving loan launch reserve fund, which could go along the lines of what Anne was talking about earlier. We've got that in progress. We currently have bids from two financial institutions to provide the loans with the back-up of loan loss reserve funds being held by the county, so we'll see where that one goes, but that one should be up and running within the next two months. So, next slide please, Mark.

When Boulder County was originally looking at the **ARRA** requirements for the various types of programs that would be funded through QECCB, we really felt that there were a lot of sticking points with respect to the other alternatives other than designating a green community program. So ultimately working with bond counsel we decided, and having been advised by the US DOE and by the Treasury that there was not going to be a federal definition of Green Community Program forthcoming, we went forward. We adopted our resolution, establish and defining our Green Community Program for the purposes of QECCB financing.

I've included some of the clauses we used in connection with that resolution. It think it's very important to note that defining that Green Community Program, while we didn't currently think that we had carte blanche, you need to make a Green Community Program that is reasonable in terms of its goals and the types of projects that are being accomplished so that they are consistent with the ARRA goals. But it does give you a greater freedom and latitude than some of the other **prongs** of the ARRA funding under the QECCB. Next slide please, Mark.

So we've defined the program to include a number of things. We've used information from the Qualified Conservation Purposes in the Act, and next slide, Mark. So we've defined our goals, to reduce the climate effects of greenhouse gas production, reduce energy costs of the County and County residents, increase the County's energy independence, and provide examples for other. So we adopted this as an initial description of the Green Community Program. Because there weren't very many models out there that we could look to as far as what might happen in the future, we expressly included in the resolution the ability to amend and revise the Green Community Program description as we went along in order to provide for future financial should additional ARRA/QECCB volume cap allocation be made available, or to the extent that that would be applicable to other programs that the County \_\_\_ \_\_\_ to take. Next slide please, Mark.

Okay. So in terms of the financing, I'm on the financing slide. Two financings, very different kinds of financings, occurred using QECCB/BAB volume cap allocations, and for these we used our direct **vault**. For the first one, which is the \$5.85 million for energy efficiency and renewable energy upgrades to county buildings, as well as construction of a county LEED Gold building. We used both our direct volume cap allocation as well as a portion of the Colorado statewide **balance**. For the commercial PACE financing program, which was \$1.575 million, we used statewide balance for the allocation necessary for that QECCB program. So now we'll go to the slide that labeled the kind of buildings, the EE/RE upgrade projects.

Okay. So the improvements we were making, we actually included six buildings that the county had in existence, five of which were in existence, one of which would be a brand new building, the one that was being built to LEED Gold standard, which actually, I don't think we identify directly in here but is basically a county road maintenance building. It's basically a garage to store our road equipment in. We were including

improvements to building envelopes of the county buildings, reduced heat loss and gain. So that included both insulation, replacement of windows, as well as creating the white reflective roofing. We did all of that with respect to the jail. We did improvements to county buildings to replace air handlers, chillers, boilers, et cetera. We did that the County Justice Center which is where courts are located. Next slide, Mark.

Electrical system improvement, more efficient lighting and lighting controls. We did LED motion-controlled exterior lights at the County Jail. We did biomass heating systems. We've already had a biomass heating system operational for about five years at the county's \_\_\_\_\_ and open space and transportation complex headquarters, and it's worked so well and there's so much demand for using the biomass fuels that we are gathering from the forested two-thirds of Boulder County, the mountainous two-thirds. There's a huge amount of demand to use that, so we have installed now a biomass heating system at the County Jail. And we did do some solar and solar thermal at the jail and at the County Sheriff Administration Building. Next slide, Mark.

So that does define what we did with respect to the county buildings projects. Just one more note about county buildings project: we did biomass and we did run into issues there because Boulder County is included in the Denver Metro Range Air Attainments Area and we are currently in a non-attainment area, and therefore biomass has lots of hoops to jump through in order to be approved. So then, with respect to the commercial PACE energy efficiency and renewable energy retrofit financings, we had already done, in 2009, not with QECCB, we had done two rounds of residential PACE financings, a total of about \$13 million, and that included about 650 properties.

Of course, by the time we got to the second of those two financings, which occurred in early November of 2009, we were dealing with vice president's task force in trying to ensure that anything that happened with respect to PACE would allow PACE to go forward, and then, of course, as Anne noted, in May of 2010 we got the word – maybe it was April; I don't remember the date – but April or May we got the final word that FHFA was not going to commit to the PACE programs, at least those in which there were secured loans, secured by a first lien on the property. So that was the end of the residential program. At that point we looked at doing commercial. Of course, the office of the comptroller of currency had stated that there was a potential for OCC to issue

similar directives as FHFA, so that would involve the commercial lenders.

The commercial PACE program, we did with lender consents, so every single property owner that was participating had to go get consents from their existing lenders, permitting the PACE loan on the property and permitting subordination of that loan. We had 29 participants, about \$1.6 million total. It was definitely a lower participation than we would have cared for. Normally the county wouldn't go out to the bond market for something less than \$5 million in principal amount because the fixed issuance costs just eat up so much of what you're doing there. We were able to obtain a great interest rate, of course, because of the QECB financing.

We were also able to make it more prospective through the inclusion of what they call an amoral obligation pledge, where the county, although the county has no legal obligation to make up for deficits or defaults in the repayment of these loans, the county agrees that it will consider doing so at such time as it becomes an issue in the future, if it becomes an issue. So that was one of the bases upon which were able to proceed. I am now on – Mark, I'm getting ahead of you here, or you're getting ahead of me, maybe.

*Mark:* Yeah. Sorry, Larry. It appears that a couple of your slides have been cut off. We'll make sure that the slides are uploaded properly onto the Solution Center when the final presentation is available.

*Larry:* All right. Very good. So finally, the last slide, issues to consider, well, definitely you have to consider the impact of the requirements for **compliance \_\_\_\_\_ wage act**. Compliance in terms of both the wage rate as well as the reporting requirements. We had to consider that both with respect to the application to our county building project, because some of those projects were being built with in-house county staff. However, every single one of those projects had some outside contractor involvement, so we did end up doing the Davis Bacon compliance requirements with respect to those projects. Likewise, we required in our contract with the receipts of the loans in the commercial PACE program that they comply with the Davis Bacon requirements in terms of both prevailing wage rate and reporting.

Another thing to consider, of course, well, I mentioned that we got lender consents because of the possible future OCC involvements. The Green Community Program flexibility, I just want to mention again that the ability to define at the local level on a reasonable basis, energy greenhouse gas emissions, savings objectives, and

the kinds of projects that are going to meet those objectives, is quite important and will serve you, I think, well into the future as opposed to trying to fit square pegs into round holes when it comes to the other prongs of the RRQ/ECB funding. So that's what we chose to do and this is how we've done it so far. Thanks.

*Mark:* Great. Thanks very much, Larry. And again, if you have questions, please submit them via the box on your right that has the Questions tab on it. We'll try to get to as many as we can at the end of the webinar. Bear with us for just a second, folks, and we'll make sure that Keith's audio is enabled. But while we try to resolve this, I'll introduce Keith.

Keith oversees the targeting, development, and administration of projects funded through the American Recovery and Reinvestment Act in the Northeast and Mid-Atlantic Regions. Keith leads advanced funding efforts for large-scale sustainable efficiency projects that can have significant positive results for their communities, environments, and economics. A Johnson Controls team member since 1992, Keith has experience in energy, construction, maintenance, and operations projects throughout the United States and international locations. Mr. Reller earned his bachelor's of science from the University of Southern Indiana. And again, bear with us just a moment while we get his audio enabled. Okay. Keith, are you with us?

*Keith:* I am, and thank you.

*Mark:* All right. Please go ahead. Thanks.

*Keith:* All right. Go ahead and advance the slides, please, and you can go one more. This afternoon, in my brief few minutes with you, I want to give you a consultative perspective in three primary areas, beginning with looking at the way to leverage QECBs, how do we leverage the dollars, how do we grow the impact of the program in your community, and what type of vehicles are available? As Mark introduced early in this conversation, I'll give you some highlights into performance contracting.

Secondly, I want to give you some aspects of QECBs, things that make them extremely effective in the marketplace, ways that we see them being most impactful to our receiving communities and states, and also some of the, I'm going to call them "gotchas," but maybe potential challenges that we've experienced early on in implementing QECBs. And finally, and maybe most importantly, is share a little bit of the customer perspective and early adopter of

QECBs, and the realization that they gain in implementing QECBs in their community. So let's go ahead to the next slide, please.

With the American Recovery and Reinvestment Act, a sizeable amount of dollars were spearheaded in implementing energy efficiency in our communities. In fact, it was actually worded as "foundational investments in implementing energy efficiency, and that's clearly what it is. Past member of the Department of Energy, Matt Rogers, spoke at a conference early in 2010 that I attended, and I specifically enjoyed one comment that he made about energy efficiency needs for public buildings across the U.S. His comment was that "the capital requirements to fund energy efficiency needs in our public buildings total more than \$150 billion annually," and that budget would necessitate into the next ten-plus years, so we're talking sizeable dollars that are necessary to implement the energy efficiency we need in our public buildings, and we really have a challenge in our economy and in our budget to implement those effectively.

Mr. Rogers and many other leaders within DOE also strongly support the use of public and private partnerships in reaching these efficiency needs for our local communities and state communities, with the use of revolving loans and performance contracting. So I want to give you insight into the basics of performance contracting, and you can go to the next slide, Mark. Some of you are well-experience, and for that, bear with me very briefly. And for those of you that are not as experienced with performance contracting, I'll share the highlights.

Performance contracting, very simply stated, is a guaranteed process that allows our public and private owners to implement programs that are energy efficient and those improvements pay for themselves over a period of time. Very widely, the improvements are designed to reduce operating and maintenance expenses, specifically those things around your utilities, gas, oil, electricity, and such, other users such as water and sewer, also promoting, where appropriate, revenue generation around municipalities where we're actually measuring water consumption and such.

We're also very focused on environmental outcomes, where we can have the greatest impact of waste reduction, as well as emissions, for the future of our communities. So it really is creating a partnership, and if you move to the next slide, I'll talk to the individual components, and Mark can advance. I apologize because I think this is one we have to step through, so great, thank you for doing that.

Effective performance contracting is really a partnership between the energy service company and the client or the municipality. It begins with understanding what's going on within that municipality, understanding their needs, understanding how they're using and spending taxpayer dollars, and understanding how they could promote more efficiency. So it begins with that dialog. The next step is really understanding what's going on, so there's a preliminary investigation of the sites, whereby engineering and technical resources from an energy services organization, would take an initial evaluation of their facilities, understanding currently how they operate, and generating some general contents of how efficiency could be implemented.

The third component is around procurement. Each state and locality is just a little bit different, so certainly some of those terms we have heard thus far in today's conversation, like request for proposal, or qualifications, or some procurement methodology, would be employed there, even with negotiations that are enabled in some municipalities. So there's a commitment about how to go forward. Based up on that, a very detailed analysis is conducted of the operations and the facilities, to look at what means can be used to implement energy efficiency, and ensure that those efficient programs and projects will pay for themselves over a period of time.

The program is guaranteed, and I make comment of that for a very specific reason. Energy services companies have the ability to provide formal written guarantees that ensure that the programs will pay for themselves over the specified term, whereby assuring municipalities and their constituents that they have eliminated or certainly minimized as much as possible any risk that would be incurred on a normal budget.

The improvements that you see are typically around those things that promote energy usage, such as lighting. Most of us realize that approximately 40 percent of our public and commercial buildings' energy usage comes from lighting, so very much focused on reducing the energy consumption there, but also promoting the quality of light that's produced for the useful benefit of the occupants and the production of those employees that work. I mentioned water, not only the conservation but promoting revenue opportunities that may be exist. Also, investigating the building envelope, those things such as windows and doors, promoting not only energy efficiency but nice architectural and attractive, useful improvements.

Leveraging technology. Things like renewable energy, technology around controls, advanced integration of our building operating systems along with business systems and such, and then ensuring that we're extending useful life of existing equipment or replacing the aging equipment with new, energy-efficient. So those things are all designed to reduce energy, whereby paying for themselves over a time period guaranteed results. You can move on, Mark.

I conclude with that guaranteed result because it ties very well into why we would want to use Qualified Energy Conservation Bonds to pay for an efficiency program in your community. One of the things that connects very well, and that is QECBs can be issued as revenue bonds, and the guarantee that's provided by the energy service company can help you, as the issuer, because it assures the borrower and the investor that the program will do what it's designed to do, minimizing the risk, and the guarantee actually acts as an assurance. What does that mean to you? It minimizes the risk to the investor and it lowers your risk, and it also lowers the interest rate that's charged at the time of sale.

Also, it's used as a conservation program, and in these times in our communities, when our constituents are very concerned about the money we're spending, that energy consumption or reduction is very connected with this issuance, meaning that our constituency, that there's great value in the way their tax-paying dollars are being used. They're reducing energy, they're promoting longevity of the building access of our local communities, and we're equally inspiring other public and non-public organizations to promote energy efficiency in their buildings. QECBs are a really low cost of money. I'll conclude on that very shortly. It was also mentioned, I think by Elizabeth early in this conversation, that it's really a great rate of money if you're going to do capital type projects in your community.

It's viewed very well by the investors. Once we started to digest the intricacies of QECBs and their likenesses to BABs – Build American Bonds – we have seen a good appetite from the investment community to work closely and implement very effective rates. So we see some very positives, not only in risk-avoidance but also in cost of dollars, and overall good use of dollars as viewed by our constituents. And you can move to the next slide.

From our perspective as Johnson Controls, we have seen a lot of questions asked in the marketplace about QECBs, and so why they

were highlighted early in this conversation, how QECCBs could be issued, we feel that there's two really strong opportunities for each of our communities out there that received allocations or desire to receive allocations. One, where we have a clear, founded program on reducing the energy consumption of a building or a portfolio building a minimum of 20 percent, works effectively well.

We have several examples where we've been able to do that without any hesitation, and so we are a strong proponent of that. We have seen an ideal project size of about \$1.5 million is kind of that break-even, and I say that purely in an estimated fashion. Once we get much smaller than that, the issuance cost and other components start to make it challenging, and I'll talk about that as I go on here. So clearly, from an energy conservation project, reducing the consumption by a minimum of 20 percent, very, very strong.

The other thing that we endorse and believe we'll see greater alliances around and that is Green Communities, and that has been spoken about thus far in this conversation as well. Green Communities really offer the opportunity for our receiving participants to take the dollars that they gain and work with the state agency that's issuing the allocations, and leverage any unused or unallocated amount, for a larger impact in our communities. We've had several state energy offices that have looked at issuing a larger Green Community effort around a geography that would not only affect the public side but also promote a way for reasonable cost of energy efficiency implementation in the private sectors. We've seen needs focused around health care. We've seen needs around higher education, and clearly around commercial. So there is a growing interest, and I'll even say appetite, for a larger allocation in some of our communities where that availability exists. So I'll move to the next slide.

I mentioned that there are some challenges, and while I certainly do see them all or recognize them all thus far, there's a couple of ones that do jump out. The first one, that is, relatively low allocation for your community. You may be one of those communities that receive the million dollars – maybe a little less, maybe a little bit more – and just determining how you can best use that. Financially, does it make sense to be a single issuance, or maybe it makes sense to do a pooling allocation or even a larger Green Communities allocation. There's several different ways to approach it.

We also recognize that because of some of these single issuance that the size is relatively small, so the investor interest has decreased. It's always important to work with a strong financial partner that can help guide you. It's equally important to have strong bond counsel as you develop this issuance, so that you you've connected all of the key people into that, so that you have strong reception in the marketplace.

I mentioned the pooling. We have seen examples such as Michigan where they issued three to five different municipalities at once, reduced some of the issuance expense, larger issuance, greater appetite by the investors, so there's some innovation that we've seen thus far in the issuance. I also mentioned a little bit about the Build America Bonds. They blazed the trail with the subsidy, and so we've got some increase in investor appetite that wasn't there a year ago. So these are just a few. You may be experiencing different, and each of us may experience some different ones as we go forward, but the key is working closely with a very strong energy services organization, aligned with strong financial partner that has experiencing in issuing and guiding as well as strong bond counsel, so that when we do make all of the hurdles that we have a strong agreement when we do go into the marketplace. Next slide.

I wanted to share what I consider energy conservation bond considerations. I introduced a few terms and didn't go into detail when I made mention about gaining additional allocations that have gone unused. I also mentioned about pooling. And the purpose of that is that some states, after they have completed all of their allocations, they've recognized that some receiving communities have no interest at this time or in the future, of using those dollars. And while they are theirs to keep and they don't have a shelf life, so to speak, some states have made effort to seek input from each of these communities so that if they are not going to be used, they can be reallocated back to the state, and they can be used for communities that have a design purpose, or they can be used to augment existing recipients for a larger program, whether that be energy conservation, whether it be for renewable, or even for Green Communities. Some of the key questions that arise when you consider that is just as simple as who owns is from your state? It clearly could be the Department of Treasury. It could be delegated to the State Energy Office. So it's important to find out who has the ownership for communication.

Equally understand what the process will be for any unused, unallocated amounts. Based upon that, how do I gain access to it

and what kind of programs will be implemented in your state that will allow me to gain access to those funds, or how can I petition for them? So these are some of the basic things to consider. I'm sure you will have many others that will go with it.

The next thing that I want to conclude on is –

*Mark:* This is Mark and we need to wrap up.

*Keith:* Okay. Thank you. I want to share an example of where we had a very successful implementation in Genesee County, Michigan. Very simply, they received about \$1.6 million through energy efficiency block grants. They worked with the state and received additional amounts of QECCB, about \$7.5 million in addition to the \$1 million they received. They implemented a total program in Genesee County of just over \$9 million. The QECCB was issued at about 1.9 percent interest rate net. So much as Elizabeth said in the early comments, this program was implemented not only cost-effectively, but it's actually making money to implement it. The slides clearly communicate what's there. We did energy efficiency and some capital avoidance, so very positive program for Genesee County. They would be happy to field any questions in addition to what I've communicated here today.

*Mark:* Great. Thanks, Keith. That's really wonderful. You've obviously provided lots of useful information for folks and there are a number of great questions that have come in, so hopefully we'll get a chance to address them during the Q&A. So I want to move quickly to Jason Tomlinson. Jason is the Assistant Vice President for Finance at the University of Louisville, a position he has held since 2004. He is responsible for capital financing at the University of Louisville Foundation project, financial and HCM systems administration and payroll. Jason, are you with us?

*Jason:* I am. Thanks, Mark. You can go ahead to the next slide. I wanted to provide you some background upfront, basically in the fact that we've had three bills that authorized the guaranteed energy savings and performance contracting. They're there for your information. Next slide. The 1996 legislation provided for the use of ESPCs as a private sector financing and it required that the energy savings be enough to pay for the debt service. Next slide.

In Kentucky and at U of L, the majority of our buildings are state-owned. The Department for Facilities Management issues guidelines and regulations for executing ESPCs. And then the statutory requirement is given to OFM, the Office of Financial

Management, to approve those. Next slide. I wanted to give you a time line, and what I thought we should do is we've actually done two different projects under different financing options, and I thought I'd give you a compare-and-contrast between the two. In 2006, the General Assembly passed HB 380 which gave us authority to do these. In '07 we started our first project. With that one, we contracted with Siemens and we did that under a master equipment lease, being that most of it was renovation and updating the buildings. And then in 2010, in September, our Board of Trustees approved Phase II. Then we took that to OFM, got it approved, and in that opportunity we had to use BABs and QECB bonds. Next slide.

I thought we would compare and contrast the two of those. Next slide. Our first one, once again, was the master equipment lease. We did improvements to 68 buildings. We achieved a \$6,400 savings per day in our utility bills. The changes were lighting retrofits, building energy management control upgrades, water conservation upgrades, mechanical upgrades, ventilation upgrades – those kinds of projects. Next slide. We financed \$20,439,603. Our rate on the master equipment lease was 4.79 percent for 13.5 years, and the total interest, once we pay it back, will be \$8,118,554. Next slide.

With Phase II – our university is split into multiple campuses. Phase I was our Belknap campus, the older core. Phase II is the downtown campus, which is our health science campus. We are making improvements to 17 educational and general buildings. The savings is \$4,930 per day, totaling \$1.8 million annually. Projects, once again, the same kind of projects: lighting retrofits, HVAC, building controls, water conservation. Next slide. We're using BAB and QECB we financed \$25 million. Our finance rate, total, was 1.8 percent. BABs was 3.28 percent of it and QECBs were 1.64 percent. The term was 17 years. Our total interest will be \$6,667,749. Next slide.

The difference is with QECB we were able to utilize the sinking fund, so we will get to reduce the deposit by 2023 by putting into the sinking fund. We will have no further principal payments from 2024 to 2027. The sinking fund, we were able to invest that at 3.9989 percent. We utilized Hilliard Lyons as our financial advisor and bond counsel was Peck Shaffer & Williams. Next slide.

This one's a little hard to see, but the real deal with the savings there is once we pay back this bond in 2027 – we borrowed \$25

million – we'll be paying back \$24,931,180. So between the interest rate that the federal government is subsidizing, and being able to utilize a sinking fund, we've reduced the amount we'll be payback to less than we borrowed. Next slide, please.

So once again, in Phase I we borrowed a little over \$20 million. Our payback will be \$28.5 million. In Phase II, using QECB, we're borrowing \$25 million and we're paying back less than \$25 million. Next slide, please. I know we're short on time to allow questions, but that's pretty much what I have.

*Mark:* Great. Thank you very much, Jason. That was wonderful. So I think at this point I think what we'll do is we'll try to respond to as many of the questions that you all have raised as possible. Again, you can type questions into the box on the right side of your screen, and we'll try to address those in order of popularity. So at this point I have opened the conference lines for the panelists as well, as you are all unmuted.

This question is a question for Anne. How have you dealt with any, or how do you plan to deal with additional issuance costs beyond the two percent of bond proceeds needed to issue QECBs? And I guess Larry and Jason, if you have thoughts on that it would be great to hear quick response as well.

*Anne:* All right. There is another way to do it, and I will preface this by saying I am not a financial expert or a financial person. But there is a way to do it with an interest rate spread of a separate amount – maybe somebody else can explain this better – but basically we could go beyond that two percent, because we actually have a loan origination fee of three percent and a loan balance administration fee of two percent, and back then to this modeling. And for somebody that might be able to explain that other method better – if not, I'd be happy to have one of my financial people contact the individual who had the question and explain how we arrived at it.

*Mark:* Great, and I can address it briefly, but Larry or Jason, do you all want to comment?

*Larry:* Yeah. This is Larry. I just would note that with respect to our county project issuance that we did essentially three series of bonds and the third series was a taxable non-QECB bond that then produced the amount we needed to cover issuance cost, and those were very short-term bonds, so those, I think, get paid off here in the next month or two.

*Mark:* Great. Thanks. So I guess this question is for Elizabeth, and several questions about if recipients of QECBs haven't used them, what success have states had in requesting the reallocation of those designated QECB issuance capacities back to the state or to other jurisdictions?

*Elizabeth:* Sure. I think a number of states have tried to have some sort of legislative action requiring the local jurisdictions to waive their allocations \_\_\_\_\_. To my knowledge it's only been successful in one or two states and the remainder has had to rely on simply a lot of outreach \_\_\_\_\_ and trying to put pressure on the local authorities. But it is a real issue. I haven't heard, other than the states that have been able to issue, to take legislative action, of folks having a great deal of success in really getting back all of those local allocations. For states that are in that situation, when you get down to a certain point where you've really pushed as far as you can, at that point it's where we start encouraging folks to help people, help the local folks use their allocations, so that at least they're not sitting on them.

*Larry:* Yeah. This is Larry and I can speak to that. With respect to Colorado, we simply used our private activity bond statute as a guide and the legislature adopted a statute with respect to the volume cap allocation that is extremely similar to that, so that those that got direct allocations had to have designated a project that would be financed before the end of 2010, and they had to make that designation by September 15, and if they didn't, then their direct allocation went back to the state and included in the state-wide balance.

*Mark:* And there are a number of questions from local government representatives about how they find out what their allocation is. My suggestion is that you first reach out to your state energy office, and they'll be probably the best resource for that, and you can follow up with us directly if you're having trouble tracking down what your actual allocation was. So this question is for Larry and Jason. A number of folks are wondering how it is that you're actually going about tracking energy cost savings and whether you set up a separate account to track them?

*Larry:* As far as Boulder County is concerned, yes, we did set up separate accounts to track those, for each component related to each of those six buildings that were affected. We have tracked those now. Of course, one of the six buildings is simply new construction, a LEED-certified building, so we are tracking the energy usage and

then utilizing that comparison with respect to what would be standard construction for a non-LEED Gold certified building.

*Mark:* Great. And Jason, any thoughts?

*Jason:* Yes. And we did, too, but then by statute, our ESPC, because they have a guarantee to savings, the biggest part of the monitoring falls back on them. I mean, internally we do stuff \_\_\_\_\_.  
**They'll prop** that part of the utility bills so we can track them separately and ensure that they're meeting their targets.

*Mark:* Great. Thanks, Jason. So a number of questions have come in asking about the eligibility of specific projects and project types. Unfortunately, the Department of Energy has not been able to provide specific guidance about eligible measures, but our guidance is that you should connect with your bond counsel and attorneys, and the general feedback that we've gotten from the Department of Treasury and ultimately the IRS, who will be responsible for assessing whether projects are eligible, is that the statutes were generally left relatively open in terms of eligibility, and they'll be interpreting it that way. But again, you should contact your local bond counsel and attorneys for specific guidance and opinions on what is and what is not an eligible measure or series of measures.

There were also some questions during Keith's presentation about the issue of making money. I just want to quickly clarify that there are some interest rate arbitrage restrictions, and the resources that I provided at the beginning and that are on your screen now will provide some additional guidance on that. But I think generally he was talking about the fact that – and I'll let you jump in, Keith – but generally he was referring to the fact that because the interest rates on QECBs are low, and the returns on the projects that QECBs are generally being used to fund are high, that the interest that you're paying to borrow with these securities is more than offset by the energy savings that you're getting out of those projects. Is that right, Keith?

*Keith:* Yeah. It's a very good summary, and if you weren't using QECBs as the financing means and we were just using a lease-type, a \_\_\_\_\_ lease, the net savings between those two on the Genesee County was about \$1.5 million, so a sizeable difference in interest expense saved using the QECBs **for seeing** \_\_\_\_\_.

*Mark:* Great. And while we've got you speaking, Keith, there were some questions specifically about the number of projects that JCI has

been involved with, where QECBs were used as part of the project financing.

*Keith:* Yeah. Really good question. That number is growing. I said you said it well as you started. Today I would say our involvement has been in the half-dozen range thus far. We see that number growing with just the effort of the customers and the way they've understood them, so we definitely see that rising in various parts of the country.

*Mark:* And the next question is for both Elizabeth and Keith. Keith, you mentioned a pooling example in Michigan, and a number of folks were asking for a bit more detail.

*Keith:* Yeah, from my perspective, when Genesee County actually for issuance, it went with two other counties, if I remember correctly, Mark, and the purpose was it made it more attractive to the investors' larger scale amount, and it reduced some of the costs that were incurred by the individual communities, in issuance cost.

*Mark:* Great. Thanks. Folks, we still have a couple of minutes left. We're just weeding through questions now, but if you do have additional questions, please don't hesitate to send them through. There are also a number of questions on the type of bonds issues, whether they're revenue bonds or general obligation bonds. I think Larry mentioned that Boulder's were revenue bonds with a moral obligation attached. I would highly recommend that folks consult the DOE Clean Energy Finance Guide, particularly if you're not familiar with some of the secured \_\_\_\_\_ structure, so structures for securing the QECB issuances. It runs through – in excruciating detail for beginners – how to go about securing these bonds, particularly if you're interested in limiting risk to your local government.

*Elizabeth:* I would just say that in St. Louis County we did not do a general obligation bond. Obviously the bonds are expected to be repaid by the repayment of the loan, but we do have our annual appropriation, so it's pretty much like a moral obligation that we're using.

*Mark:* And Larry, did you want to comment a bit about Boulder County's? I think folks would benefit from a little bit of additional detail on how that moral obligation impacted Boulder's ability, both to raise capital and to do so at attractive rates. Do you have a qualitative sense of how that advantage your bond issuance?

*Larry:* Well, I do. I know that in approaching the ratings agencies as well as in structure in the \_\_\_\_market, our financial advisor had included the moral obligation provision because we are dealing with basically revenue bonds from revenue streams that are either general fund or are coming in from outside sources, in the cases of PACE programs. So our financial advisor felt the moral obligation was very important in getting us to a AA- rating, and was essentially what we secured. And moral obligation, we've done it once before so it wasn't something new, or completely new. We've done it with respect to one prior bond issue.

Generally speaking, when we have revenue raising program that are sources of the revenues that are pledged to the repayment of the bonds, you don't have to worry so much about the moral obligation. But when you've got something that's a little less direct in terms of the relationship between revenues rated and the repayment structure, then the moral obligation is something that comes into play.

*Mark:* Great. Thanks. So I guess we'll finish with one last question here, and this is for Larry, Keith, and Jason. A number of folks asking what methodology local and state government should use to determine the energy baseline on which that 20 percent minimum energy savings threshold is calculated. So maybe if you all could just briefly mention how you've done that.

*Larry:* This is Larry and I'm going to leave this one to the other two because I'm an attorney and I'm afraid that's sort of beyond my level of expertise. We left that a lot to our county architect and his staff.

*Mark:* Great. So Jason and Keith?

*Jason:* This is Jason. Of course, ours was done through an energy performance contract, so when we contract with them, it's to monitor the buildings, survey them, and then come up with that target, which isn't always \_\_\_\_\_ considering, at least in our case, most of our energy classes, you know, except for major buildings or anything, but one of the energy bills \_\_\_\_\_ section. \_\_\_\_\_ bring out monitoring equipment and starting doing that. But the biggest bulk of that work is done by the one you contract with, and then use \_\_\_\_\_ physical plant staff. I'm not sure if that's all that helpful, but contracting with someone else, you kind of shift a lot of that work over to them.

*Mark:* And Jason, you've captured the big parts of that. There is actually software that is standard in the industry and certainly recognizable by federal agencies, so there's some standards which are applicable there. The names of the programs escape me so I apologize for that, but that's the primary way of doing it, ensuring good engineering practices are used at all points. And I know with one client, we had the privilege to actually meet with IRS or talk with IRS concerning that exact subject – what is the standard that IRS used to administer that or assures that it's being done properly. So the summary that's been provided here is very similar to that conversation.

*Mark:* Yeah, and this is Mark again. You know, this is a difficult area where there's not explicit DOE guidance and so you should consult with other jurisdictions that have issued QECBs or your local attorneys and bond counsel to get comfortable with the mechanisms and methodologies that you're using to track that savings.

So with that I think we'll close the webinar. Thank you all very much for joining us, and thank you very much to our panelists. Again, there are two more webinars, DOE TAP webinars this week, one tomorrow and one on Wednesday. We hope you'll be able to join us. Again, thank you all so much for joining us. Take care.

*[End of Audio]*