

Holly Carr:

Practices of Better Buildings Challenge partners, better buildings alliance members and aligned organizations who are working to improve energy efficiency in buildings. Today we'll be focusing on better buildings participants involved in the world of property assessed clean energy or PACE financing. We have a strong panel today offering diverse perspectives on PACE. We'll speak with clean fund, a better building's financial ally that finances clean energy projects through the PACE vehicle and next we'll hear from better buildings partner city of Milwaukee which has initiated a PACE program available to its local businesses.

We'll also speak with a representative from the Los Angeles Universal City Hilton Hotel where a PACE vehicle financed whole building energy efficiency upgrades. And last but not least we'll have a few words from our better buildings financial ally liaison, Rahul Young, who will highlight the resources available to you all, to our audience through the financial ally program. So let me go ahead and introduce our presenters. We need to forward a couple of slides I believe.

So John Kinney is the CEO of Clean Fund, a specialty finance firm focused on property assessed clean energy PACE bonds to complete energy efficiency improvements for commercial and industrial real estate owners. John holds a BA in human biology, a master's degree in industrial engineering and an MBA from Stanford University and he serves on the board of Nature Bridge and is also a member of the YPO environmental network. A fun fact about John that I just cannot resist sharing is that he is a professional skateboarder in the U.S. so that should give you a fun mental image for this presentation.

Next we'll hear from Erick Shambarger. He is the deputy director of the city of Milwaukee office of environmental sustainability. Mr. Shambarger oversees the Milwaukee energy efficiency program and the Milwaukee Better Buildings Challenge and chairs the city's energy reduction team to reduce energy use across city operations. He manages the city's PACE financing program and lead development of the energy chapter of the city's Refresh Milwaukee sustainability plan. Eric holds a master's of public affairs degree with a specialization in energy policy and finance from the University of Wisconsin.

Next up will be Steve Thompson. Steve is the director of property operations at Hilton Los Angeles Universal City where he manages operations repairs, capital projects and oversees the utility and cost and controls departments. Steve has 41 years of experience in

hotel operations including over six years with Hilton Los Angeles Universal City. And finally Rahul Young is vice president at ICF international and leads ICF's San Francisco, San Jose, Seattle and Portland offices. He serves as the financial ally liaison for the U.S. Department of Energy's better for buildings challenge.

Next slide please. And before we get started with our panelists I want to remind our audience that we will hold questions until near the end of the hour. So please send in questions as you think of them through the text interface on your webinar screen. There should be a little text box where you can send in questions to us. All right. I'll turn things over to John Kinney to tell us a little bit about PACE generally and about Clean Fund. John?

John Kinney:

Thanks, Holly. Thank you very much Holly. I'm really happy to be here and glad that we had so many people interested in learning more about PACE. The – what we have with PACE is an innovative funding solution for building owners to invest in energy improvements. And we're trying to keep PACE with a bunch of different technologies that are coming on board and the building owners just aren't doing the improvements that they need to do. And so we're trying to figure out why. So let me tell you what I think the situation is and why Clean Fund is excited about commercial PACE.

I'm going to ask you to just keep up with me on this one training slide. The main thing is that energy efficiency is still perceived as risky. You get these buildings and they don't really know when they do an energy improvement whether it's going to have a positive payback. In addition to that energy isn't really mission critical. This building is – it's more important for them to do tenant improvements and signage and things like that. Steve will tell you later why for Hilton in his job they do see it as important but in general energy is seen as mission critical for real estate owners. And when they do do it the energy improvements tend to benefit the tenants and the future owners even though it's a cost of a current owner. That's because the building tenants pay for utilities and then the building is sold and someone gets to enjoy it going forward.

So all of this has capital constraints that are really tough on building owners. They have to prioritize ruthlessly. So the complication is in summary on the next slide please building owners really don't have compelling reason to make these energy improvements. The capital budgets get redirected towards what they see as mission critical projects and that's going to result in

differed maintenance, subsidies that aren't fully utilized and frustrated commercial real estate stakeholders all around. The real estate values and the environment and I put that in as a "oh by the way", are the ones that suffer from postponing all these cash flow positive investments. We're not trying to get real estate owners to take up what we believe is so critical about the environment. We're just trying to get them to do things that already make sense.

So the implication is that you're going to have buildings with less comfort and higher cost occupancy for the tenants and then for those who are selling these great new energy efficiency and renewable energy products you're going to have fewer customers who are able to buy even though they're positive cash flow. And ironically the ones who really add the risks are the mortgage holders so all of that makes for a complicated environment. But there is a solution. We've already got muni finance that enables for tax collections. You're already seeing the ability to do special assessments for improvements like roads, highways, schools, protective services. These are already getting done and it benefits real estate owners indirectly and they don't have to pay for it as debt. They're paying for it out of property tax obligations.

So the cool new thing now is that this public private partnership opportunity exists where you have investors that can be attracted in to purchase privately the bonds from each government agency that goes on private real estate and that's new. These are much smaller transactions but this is what enables PACE to happen in a global way. And Erick's going to talk more about this so I'm not going to go into more detail here. Let me just say on the next slide you can see that our job is to make what is a relatively complex transaction look simple. And these are complex transactions in their entirety but each one each relationship that we have to build is relatively simple but property owners are going to look at this as real estate finance and structured finance.

Energy efficiency and renewable energy vendors look at this as energy finance. The cities and counties this is muni finance for them. Bankers and lenders this is project finance. Those are each sort of separate Venn diagrams that don't intersect. And while each one of them may be simple bringing them all together is what is complex and is a job for companies like Clean Fund. And when we do it right it results in some really great savings that don't cost the owners anything. You have the old operating expenses in a building and operating expenses what I'm talking about here are utilities. It's also property taxes. It's also common area maintenance.

But when you look at that existing operating expense bill and you do a PACE transaction you're going to have new operating expenses. The utilities will go down. You're going to have new taxes that add in there but you're going to generally see a savings and we underwrite to make sure these are at least neutral. But the building owners love being able to do this because it doesn't add recourse financing, they can pass it through the tenants even though it's a savings, the tenants get that savings. So that's what makes it work and that's why it's growing throughout the country.

If you look at where this is passed it's now in 31 states and District of Columbia, a lot of municipalities are doing their own programs and are actually putting out money to finance this themselves. The momentum is definitely there. I'm not going to talk about residential base and a lot of these programs tend to be led by residential especially in California but now commercial is on the heels of that and I think it's going to ultimately be as large or larger partly because this type of financing has very straightforward underwriting requirements. If you think about what is it we have to we've got good checks and balances built in here because the projects have to meet the local program criteria to qualify for the public good.

Clean Fund really believes it's important not to approving our own transactions and so we try to go into area where there is a separate administrator so that we're having Erick approve a transaction in Minneapolis instead of us running the program ourselves. Each project is going to have to improve the property value and we basically determine that to be cash. We're looking for net positive cash flow transactions and again the check and balance here is having the vendor who is doing engineering studies and diagrams they're making commitments to the property owner evaluating what these savings look like. In terms of size the maximum amount of a PACE transaction is determined by property value, we're financing a percentage of the property value, generally up to ten percent of the property value. That's as opposed to financing based on cash flow of the building itself.

So we're not having to underwrite to the tenant roles and to what's going on in that building. We're really just saying we can only go so much because of the property value. The minimum size is more based on the program itself. And these transactions because we are dealing as I showed you with four different stakeholder groups the transactions tend to be more expensive by themselves and when you layer on program expenses those make it very difficult for real estate owners to justify these. So that's what really determines the

minimum size. The other thing is the Clean Fund requires an additional check and balance which is having the mortgage holder's approval. We think it's really important to be in partnership with the mortgage holders rather than in any kind of adversarial relationship. And we also want to make sure our existing customers, the real estate owners see it the same way.

So we're looking at these different investment barriers that we're trying to solve and the capital constraints we can solve by giving them financing. Lining up the benefits with those who are paying the cost gets – we do that through making these eligible as a task group. Whoever pays the utilities almost always pays the property taxes. Hold time for real estate owners is solved by having these fully transferable. Long payback periods are ok as long as their cash flow positive up front. Real estate owners don't like covenants, they don't like recourse financing. This is no covenant, no recourse and the taxes are not mission critical.

That's one thing that's still hard for us to get around. We still have to convince real estate owners to do energy improvements but at least we don't affect their debt capacity. This isn't taking it away from something that they may consider more mission critical. And just to give you a sense for some of the transactions that get done, **Slow Mountain** Village is an office park in southern California where we did a \$1.6 million improvement, saved a couple hundred thousand dollars by generating energy. It cost about \$150,000.00 in tax payments and allowed them to position the building as a clean energy campus and attract some new tenants.

I'm not going to talk much about the Prologis transaction which is the next slide but it was a \$1.4 million transaction. Prologis which obviously had plenty of money to do it chose to do it with Clean Fund and not use equity on something that they may not have seen as mission critical to the RET. It did result in basically cash flow neutral but the fact that utilities are going to go up over time – they went down in absolute basis and they're going to go up over time whereas taxes stay the same leads Prologis to believe this was a \$350,000.00 net improvement to the building. And again we'll talk about this later. I think Holly is going to talk more about it.

The other transaction is to highlight is we've done a lot of transactions with the Connecticut Green Bank that they've originated and financed. One of them in particular was this \$2 million energy efficiency upgrade in Bridgeport. It saved the building \$75,000.00 per year and that's what makes lender approval really easy to do is when we're getting rid of a \$2 million

impairment and saving them \$75,000.00 a year just that savings that affects cap rate makes them look at this as a \$1.25 million improvement so really easy to get lender approval when you're doing something that helps the building so much. I'm not going to go into this much but it is important for real estate owners to choose a good PACE partner so they have to go with someone that is a leader, someone that has a track record. They've already been doing PACE transactions, someone that is working with programs.

Clean Fund has actually worked with almost every program out there and really feel comfortable in building these public private partnerships with all the different municipalities. The team that people choose to work on their real estate need to have a bunch of different expertise areas. This is mini finance, its structured finance, its project finance, its energy finance and those all have to come together. Initially we think it's pretty important to be with a product company that they hope to do more flexible terms, low cost, move quicker.

We – Clean Fund is already established in the ability to issue bonds on a national basis through one agency so we're really held back only by which programs are open. We can issue bonds on a national basis and all with the same paperwork. And we don't think of ourselves as having PACE be the solution to everything with the work with a lot of science tools and that's what our structure finance people do. So the actions that we think we're going to be able to do is we're going to take buildings like this that are able to do a little tiny bit of solar and do a lot of solar. We're going to be able to get building owners to invest in energy efficiency without using equity, without creating new covenants, without taking their valuable budget.

We're going to get them to be able to complete all the cash flow positive energy improvement measures instead of just the ones that they can afford in their budget this year. They can do it all now and this is also going to be done in a way that aligns the expenses of those improvements with whoever does this whether that's the occupants or future owners and that's what we think is going really make PACE the multibillion dollar improvement that is going to have a significant dent in our environmental problems out there. So I'll turn it back to you Holly and have you introduce Erick.

Holly Carr:

Great. Thanks John for the case and description of some of the barriers and solutions there with PACE. Erick we're going to turn it right over to you to tell the audience about Milwaukee's story

and how the city has made PACE available to its building owners. Erick?

Erick Shambarger: Thanks Holly and thanks John. Hopefully everybody got a good sense in general of what PACE is supposed to do and so I'll kind of get into the Milwaukee experience. One of the reasons we wanted to do PACE financing is to fit it into our overall sustainability plan which is called Refresh Milwaukee and we have a broad sustainability plan and buildings and energy are a key component of that plan as we strive to make Milwaukee as the mayor likes to say the fresh coast capital of North America. And our feeling is that energy efficiency really is important to cities. It's an important economic development tool that helps us stay competitive as businesses shop around looking for places to locate.

They look at the cost of doing business and energy is the cost of doing business and so we need to do our part to make our older buildings in the city more, less expensive to operate. And of course investing in energy efficiency creates local jobs. It means better more stable buildings, again helping lower operating costs and then improving local air quality. And so all of those things are important because with PACE it's helpful to establish the public benefits to have, to pass a PACE ordinance locally. And the other thing we heard in talking to building owners is that all of the existing building owners appreciate economic development tools. Most cities are used to providing financing for new developments through tax incremental financing and other things.

But I think it's really important to have a tool in your toolbox to help all the existing building owners who have been in the city for a long time, help them make upgrades. And so from the building owners' standpoint I think John did a nice job of breaking it down. With our programming we don't talk too much about the environmental benefits. We really try to talk about the bottom line benefits to the building owner as John kind of laid out. And again this is operational savings. It's improving occupant comfort and satisfaction which means less complaints.

So if you think about what is mission critical to a commercial building owner and making sure that the customers aren't complaining about a heating or cooling system that's not too hot or too cold can be mission critical to them and so it's useful to think about energy savings projects for yes, saving energy but also improving the occupant comfort and the value of the buildings. There can be tax benefits associated with building improvements and reducing the risk of unexpected equipment breakdowns so

those factors drive interest in new equipment that also happens to save energy.

Next slide. So our PACE financing is available to commercial building owners. And when I say commercial building that can be basically anything that's not a government or a one to three unit home. It can apply to nonprofit buildings, commercial buildings, churches and that sort of thing and our state statute covers energy efficiency projects, water efficiency projects and renewable projects, things like boilers, chillers, building controls, solar energy, lighting and any other improvement as long as it's permanently affixed to the building. We do do some windows although it's good to tie those into a broader energy efficiency project.

Next slide. So the idea is we're making private capital available to building owners via this unique public private partnership. So the loans in Milwaukee are provided by private investors. The loan funds are provided by private investors. Payments for those improvements are collected from the participating building owners through voluntarily assumed special charge on the property tax bill and that's – so once a year tax bill comes out and you'll see a special charge that shows up for PACE for the participating building owners. And all of that leads to benefits to the building owners, tenants and the community. It sounds like such a simple thing, the city acting as a collecting agent for energy efficiency loans but it really does open up a whole range of benefits that John described for the building owner and it makes these projects make a lot of economic sense for the building owner where maybe in the past it wouldn't have.

And part of that too gets to, before I get into the mechanics of it, is really allowing for long term financing. So a lot of traditional loans, commercial loans maybe only go up to five years and so if you have a boiler project or a solar project that pays for itself in ten a five year loan doesn't really work very well because the payments are more than the energy savings. So PACE allows for loans up to 20 years or the life of the equipment, whichever is shorter, and so that can help make projects become cash flow positive.

So here's the mechanics. I call it the PACE squared answer. You really have four different parties involved in a transaction. You've got the city. You've got the PACE lender, building owner and the contractor. And so this diagram kind of explains how it works within the city of Milwaukee. You have – there's a tri-party legal

agreement between the building owner, the city and the PACE lender that provides for the lender providing construction loan funds to the building owner and then establishing that those loans, that loan would be repaid first to the city and then the city repays the PACE lender. The building owner can then draw on those funds to pay a participating contractor and our state law in Wisconsin requires a performance contractor for projects over \$250,000.00 to guarantee those energy savings and so the building owner enters into that performance contract with a contractor and the city just makes sure as part of its approval process that that agreement is in place.

Next slide. So we established as program manual with eligibility criteria and I guess before I get into the eligibility let's take kind of a step back as to how this all unfolded. There is a PACE statute at the state level that was very short and not very clear as to what all projects would be in there. It just generally said energy efficiency, water saving projects and renewable energy projects can be treated as a special charge and that was about it. And so even though there is a state legislation out there but the city had to pass its own ordinance so that we could have authority to collect these repayments on our property tax bills. And after the ordinance got a little bit more detailed in the state statute but that still left a whole lot of unanswered questions about eligibility and those sorts of things.

So after that we developed a program manual to kind of lay out all of the eligibility requirements, how we would go about approving a project and the underwriting that goes into it. And one of the principles of that was to try to make sure that the city's underwriting guidelines were well aligned with the lender's underwriting guidelines. We didn't want a situation where the city approved a project and then we take it to the lenders and the lenders say "Well we have lots of other things that we need to look at." We wanted to make it very clear and upfront to the perspective building owners what requirements the city had and then make sure those are aligned with the private lenders. And so from that program manual was developed and these eligibility requirements came out.

And I've got to thank Clean Fund. They were very helpful in shaping these requirements. So it's existing commercial building located in the city of Milwaukee, no property tax delinquencies – that may seem obvious that if we're going to have a loan collected on the property tax bill we want to make sure the building owner has a record of paying their property taxes. No bankruptcies or

administrative judgments out there. The max piece project we look at is 20 percent of the property value and we use assessed value or the building owner may provide an appraisal if they want to contend that they're eligible for more than what their assessed value indicates. We have a listing of participating ME2 commercial contractor. ME2 is the brand name for our PACE program. It stands for Milwaukee Energy Efficiency and we have preapproved a list of contractors that can do energy efficiency work.

And the reason was is we wanted to – talking about those public benefits if the city was going to put a program in place to incentivize energy efficiency we wanted to make sure that we were putting people who lived in the city to work. And so all of our participating contractors have agreed to hire local workers on these projects. So I – as I'm reviewing projects I'll make sure that the work is to be done by one of our participating contractors and we have a very extensive list of those contractors. I mentioned projects over \$250,000.00 require a performance contract. If the project is under that we have a list of eligible improvements on our website and the anticipated useful life of those projects which gives us some guidance as to how long the PACE loan can be.

As John mentioned we require a lien holder acknowledgement or mortgage holder acknowledgement so the existing mortgage holder has to – is basically notified of this PACE project coming down the pike and they have to agree to it. And that really is just to avoid any legal issues down the road of people in different parties bickering over who is to be paid when and what. But it's just, it's kind of a good precaution to make sure everybody is on board with what's going on. And lastly we require all of our PACE participants to get involved with the Better Buildings Challenge. As Holly mentioned the city is involved with the Department of Energy's Better Business Challenge and we feel like if we're going to provide financing we want to get people actively involved in tracking their energy use and celebrating their improvements to their buildings.

Next slide. So our application process is all online. It starts at our website which you guys can all check out, smartenergypays.com and click on the businesses tab. All of the PACE resources are listed there. And it starts with a very simple PACE interest form in which the building owner just tells us who the owner is, where the property is located and it's really more for the building owner more so than us but they go through and they check off that they understand how PACE works and it's really just kind of a

prescreening tool. I think if we look at the property, get a quick sense for how big of a PACE project we might be able to do or can check the property tax status on it to make sure there's no delinquencies.

And it's really just kind of a quick first step before the building owner spends too much time trying to put a project together if they're not going to ultimately be eligible. They then, the building owner then works with one of our participating contractors to scope out the project and develop a bid with cost estimates and necessary energy saving estimates and that goes in with the final PACE application that really nails down at that point how much they're looking for on a PACE loan. I can look at what the energy savings are and compare those to the project cost over time and just really go through in detail to make sure all of the requirements are met on the project. And then lastly we close the loan with the city and the lender. On our first project we utilized Milwaukee Economic Development Corporation which is – it's historically an economic development quasi-affiliated with the city and they provide gap financing on a lot of projects historically and they were very helpful in helping us get the first PACE project off the ground.

Next slide. So we just recently completed our first PACE project at a building called the University Club pictured there right on near our Lakeshore PACE equity is a local firm that was the project developer. They kind of worked, helped the building owner get through the process on the initial one, scoped out the work and did kind of a competitive process to get different contractors on board. We ended up with five installation contractors from our participating contractor list to do the work. Scope of the project was HVAC work, windows, lighting, steam trap improvements. In Milwaukee we're on – we have district steam and so steam costs for downtown buildings can be quite expensive and so the steam traps is sometimes overlooked energy efficiency opportunity. Project size is \$662,000.00 and we did the loan over 18 years so the annual repayment including interest was about \$62,000.00 and the guaranteed savings are \$56,000.00.

However we estimate that with the – as energy rates continue to climb as they have historically that over 18 years the actual energy savings could be around \$1.3 million worth of savings. But again the energy savings I don't think frankly were the driving factor in the decision to this building owner to move forward. Really the issue was they had a lot of problems with their HVAC and they wanted to make sure that the occupants were comfortable in the

building and so I think those – the desire to just upgrade the building generally speaking was the primary motivator for the project.

Next slide. So just kind of some words of advice if you embark on PACE. I think it's really important to have patience especially on the first project. After we had established the program manual and those sorts of things I thought we were in the clear but getting that first contract nailed down was time consuming for us. Any time you have a contract between three parties for the first time and haven't done it before as a city there are attorneys from different parties that get involved and that want to negotiate an agreement that's going to work for everybody which is a good process to go through on the first one to make sure we incorporated the concerns of all the different parties. But we're hoping going forward that the projects will move forward more quickly now that we've got all our templates and legal documents nailed down.

I mentioned this before but I think it's important to think the underwriting requirements that a city has and align those with the lender's requirements and make sure you're collecting all of the information you're ultimately going to need on the front end rather than constantly going back to the building owner asking for additional documents. It's important to manage expectations as you go through. Again this ties back to the first one with patience but helping people understand that it will take a little bit of time and just continuing to work with them going forward. And then lastly one area that we spent a lot of time in Milwaukee thinking through is if the building owner defaults on their obligations or tax obligations or their PACE obligations what that means for all of the different parties involved and so we want to spend a lot of time thinking through all of the different scenarios and coming up with legal agreements I think balance the interest of all the various parties that were out there.

Next slide. So again I've got to put in a plug for the Better Buildings Challenge. Most of you on the presentation probably know all of this but if not the goal of the Better Buildings Challenge is to cut energy use 20 percent by the year 2020, help building owners gain recognition for their efforts. Energy savings is behind the scenes and we wanted to really celebrate the people that are doing a good job managing their buildings. Energy efficiency can help attract talents and then of course the Better Buildings Challenge has the free tools to help building owners manage their energy use through the EPS portfolio manager system and the PACE financing is really a nice offering to have

along with the Better Buildings Challenge. It's one thing to ask building owners to cut their energy use 20 percent. It's another thing to say "And oh by the way the city is here to be a partner and help you finance these projects."

And we've got a nice partnership going to BOMA. That's the Building Owners and Managers Association here in the City of Milwaukee and our downtown business improvement district to help educate building owners on PACE. As one gentleman from BOMA said, he said "You know what? Building owners want to do energy efficiency. A lot of times it's just a matter of having the tools and resources to go ahead and do it" and so PACE kind of takes away the excuses a lot of people might have for not doing energy efficiency going back to all of the reason John outlined in his presentation. It really makes energy efficiency projects make sense from a cash flow standpoint.

Next slide. These are just the buildings in the city that have taken the pledge for the Better Buildings Challenge and those all are all the major buildings in the city of Milwaukee going forward. Next slide. Other way. There we go. This is just a shot of portfolio managers so some people ask me, ok, I've done this PACE project. How are you going to – how do I know that my project actually saves energy over time? And I say well that's – I'm glad you ask. That's one of the benefits of being in the Better Buildings Challenge and having access to EPA's free portfolio manager tool. That's a great way to input your energy data and be able to as a building owner see that energy use go down over time.

So financing is one aspect of Better Buildings and then measurement verification is the next and portfolio manager is a great resource that the federal government provides to building owners to help track and manage that energy use going forward. So that concludes my presentation and I just really encourage cities out there that are struggling to find low cost ways to help their existing building owners PACE is a great resource to do that. Thank you.

Holly Carr:

Thanks very much Erick. That's certainly a great example of walking the energy efficiency talk in Milwaukee and helping business owners to do the same. Thanks very much for sharing that with us. I want to remind our audience members to send in any questions that you have through the webinar interface. We are collecting those right now and organizing those for our Q&A period at the end. Let's turn now to the building owner perspective

with Steve Thompson at Hilton Los Angeles Universal City.
Steve, can you tell us about your recent project?

Steve Thompson: Yeah. We were involved with a lot of sustainability efforts and we have a building that was approaching 30 years of age and we were experiencing all of the things that people do, equipment breakdowns, major equipment repairs, inefficiencies and old equipment and we knew we needed to start replacing things but all of those are very capital intense. And what we found with PACE funding we can pay for all of these things over time and get a significant amount of work what we well knew was about seven years worth of projects done in just a few months. And now we save the operating expense as a result. We save the energy as a result and the internal comfort of the building and the complaints have gone down dramatically.

So that's what was appealing about the PACE program for us as an entity and a business. We looked at a lot of other programs out there where there were shared energy savings and they were – they just weren't appealing because of the cost and the payback terms. With PACE our savings are greater than any of the payments to pay down the PACE fund. So we can go to the next slide. This is some of the things that we've been calculating. We were doing our energy rating on our portfolio manager and we discovered we didn't like where we were so with the PACE program we managed to get it into a much more favorable position but we still know that we've got some more things we want to do to get a 30 year old building into a better picture today with the amount of energy consumption we use.

You can use the next slide please. We've been involved in several organizations, the Green Seal, Bronze, this year we're looking at Gold so we've done a lot more things as far as sustainability efforts. A lot of it's really paid off. Our customers today, they're expecting us to do all of these things. A lot of the bigger organizations actually send us a survey now to make sure that we're engaged in the efforts regarding sustainability. Next page. And here's kind of an overview. We were the largest PACE project in the United States, brought a lot of great PR to our organization and we had a lot of great dignitaries here. It's very well supported in the city of Los Angeles and we actually will take time and tour other organizations, other business through our facility to let them know what the benefits are with the PACE program.

Next slide. Some of the projects that we completed we put in new centrifugal chillers with variable speed drives and the local utilities are very generous on the rebates on both of those projects. We did an elevator modernization for 14 elevators and what we're really excited about are the LED lighting. The product quality today is phenomenal. We have very few – the failure rate is almost zero on the new product and it's a great light spectrum that we've received as well. Our guest room HVAC motor replacement was one we had not considered. Through the PACE program we determined that there's better efficiencies so we replaced all the incremental fan coil unit motors. The window film tint dramatically reduced the thermal load in the interior space.

And then we went to low flow shower heads and then we did smart glass installation that self dims in key areas. We improved some interior space comfort with the ballroom HVAC upgrade and we put in a dual EV charger station. We're getting a lot more activity. And as a result of these upgrades year to date we're at 28 percent in electrical consumption reduction so we're really very happy about that and we're going to continue to monitor that but we've achieved our 28 percent reduction. Next slide. This is kind of a before and after picture. We had some significant failures on some centrifugal chillers and we had put in some repairs over the years. We had done some upgrades but we go ahead and replace the two existing chillers.

Next slide. Elevator modernization, we had 30 year old elevators. We managed to go with regenerative drive on traction elevators and did all of our parking garage elevators, just better reliability, much reduced energy consumption. Next slide. LED lighting, we've done all the public space, all the back of house, all the parking garage and with the best technology that's available and we're really happy with how that's turned out. That was over 12,000 lamps in one facility we replaced. Next slide. Here's the EC motors. This was one of the things that we hadn't considered but we had learned about along our journey and it's really helped with the reliability of the HVAC in the guest rooms. They're quieter and they're just significantly less consumption of electricity.

Next slide. The shower heads, 1.7 GPM. We did a study on this. We did a lot of testing to make sure it was adequate. We had it in place for a while and we did the whole building and you can see that the reduction in water consumption has been significant. Next slide. The solar window film, what we really liked about this project it was a zero impact to an operating building. The solar

film really reduces that internal heat load and it's a very quick, easy installation. You're not having to do anything major to a building but the heat load and the amount of reduced AC load that we now have to have was significant.

Next slide. Here's some of the smart glass installation. It's a self dimming glass based on the solar load on the outside. A lot of these interior spaces we could never adequately cool when the sun strike was on that face of the building. Now we have complete comfort in all of those spaces. Next slide. This is just how some of the view glass works. It's kind of a neat product. We've all seen the self tinting eyeglasses over the years. This is a technology that can put it into large pane format so you can reduce that sun strike. Next slide. Some of our HVAC upgrade, we replaced a lot VAV boxes so we have proper sizing, better airflow and a lot less customer complaint issues. In the winter months we always had a lot of complaints in that area. Now they've gone away.

Next slide. EV charging station, we're seeing more and more electric vehicles in the market. We see everything from the Teslas to the Leafs to they're coming about. People are using them for commute vehicles and we liked the EV charging station. It gets good customer support so as the demand picks up we'll be adding more EV charging stations. Next slide. Ok. That was it for me.

Holly Carr:

Thanks so much, Steve. Great improvements and great story behind what is still the largest PACE project. Thank you. I'd like to remind our audience we've had a couple of questions about getting specific lists or seeing these slides. I want to remind folks that you can access an archive of this presentation, both the audio and the slides following the session. They'll be posted no less than or no more than a week from now. And you will receive an email letting you know that that archive is available. I'd like to finish off our panel with Rahul Young from ICS and he's going to tell us just a little bit about the financial allies program and other folks like Clean Fund who are standing ready to assist with energy upgrades. Rahul?

Rahul Young:

Great. Thanks Holly. And again this is Rahul Young. I'm the vice president of ICS International and I'm serving as the liaison to all of the Better Buildings Challenge financial allies. Next slide please. So I just wanted to give you a little bit of background. As part of the Better Buildings Challenge in addition to our many partners who have made commitment to energy efficiency reduction within their building portfolios we have a number of different financial allies. Currently over 20 active BBC financial

allies. Basically to become a financial ally you have to be a firm that's really, that's committing at least to place at least \$25 million in energy efficiency financing projects over the next 12 months.

And in addition we really have been focusing on firms that have relatively innovative energy efficiency financing models. There are a lot of great models that are out there but we really want to try to promote some new ideas out here to try to really move the ball forward. So certainly John and Clean Fund have been a great partner for us. We've got a number of different partners. I've included some of the logos down here at the bottom of the slide but certainly you can get a full list of all the financial allies on the BBC website. You can certainly also contact me directly if you'd like more information., Our goal here is to really try to spotlight all of the great works that our different financial allies are doing and to really help get the message out about the number of different options that there are for people who want to pursue energy efficiency financing.

PACE is certainly going to be one great option. Depending on the type of facility there may be other options to consider as well. And we really have allies who are working on all of the different building sectors whether it be commercial, residential, multi-family, industrial, public institutional, really all the way across the spectrum. So I encourage you to go to the website. And you can go to the next slide. Overall we're really proud of the work that our financial allies have done. Since the beginning of the program the financial allies have placed more than \$1.7 billion in energy efficiency financing and that's growing quickly really across all different sectors.

So PACE is a really important part of that and again is growing quickly but certainly we're working on energy service agreements as well a number of additional adaptive products. So again just want to encourage people to take a look at the BBC website, look at the financial allies and certainly feel free to contact me if you have specific questions either about becoming a financial ally if you are a firm out there that is already working in this sector or if you're looking for energy efficiency financing options and want to understand what your options are you certainly are welcome to contact me and I can try to put you in contact with the right potential firms for you to work with depending on your needs, the type of buildings you're working with and the timeframe you're working under. So that's it. Holly?

Holly Carr:

Thank you, appreciate that. A couple more notes before we move into our Q&A session. Next slide here. There are just a couple of resources I want to point out to our audience. First of all is a case study from our Better Buildings Challenge partner Prologis and Clean Fund who you heard from at the beginning of the hour. This is the case study for that Prologis Pier 1 energy efficiency upgrade as well as Clean Fund's case study about PACE and how they are using PACE to finance energy efficiency so a little bit more detail than what you heard today from John.

Secondly city of Milwaukee is just probably moments away from completing an implementation model outlining their financing, their PACE financing model and I should say Department of Energy is moments away from completing that. I think city of Milwaukee's part is done and it's going up on the website. So you will probably see when this comes up as an archive, when this webinar comes up as an archive you will see a link to that implementation model which is posted up on the Better Buildings Challenge website under solutions and really again gives more detail about the inner workings of city of Milwaukee's program. If you are a city looking to implement a PACE program like this definitely a good place to look.

All right. Let's go ahead and pick some questions from the audience. I have to say we've been overwhelmed with great questions so I'm sure I won't be able to get to all of them but I will try to get to a few certainly. Let's start out with a question from or for John Kinney at Clean Fund and I think also Erick you might have something to say about this. We certainly heard and you all mentioned this issue of the mortgage lender needing to approve the PACE vehicle, that this can be an issue. We had someone talking about their experience in Manatee County trying to get a PACE program approved and that this has been a big barrier so wondering what experience Clean Fund has had sort of getting past that hurdle and, Erick, you as well if you have additional comments.

John Kinney:

I will tell you that the first mortgage holders are – if you are able to get to the right level at the bank you're going to get things approved if they improve the value of the property and the property is not in financial trouble. And if it is in financial trouble or if the transactions don't obviously improve the value of the property it will not be approved. But we never asked for approval on a project that didn't make sense until we received 100 percent approval so far. There are a couple of cases where general approval is not availed. Fannie Mae and Freddie Mac are not

going to approve transactions on residential units and so again our focus is exclusively on commercial and many of the programs out there are now exclusively focused on commercial because they don't want to invite the federal agency that's opposed to residential PACE to be at odds with them. If Fannie Mae and Freddie Mac have the opportunity to look at each transaction and approve it they might be willing to do that.

What they're opposed to is a blanket approval for all residential and residential just doesn't have the size to want to kind of attention that you are able to do on the commercial but the commercial banks have to realize that they are – if we do a \$1 million improvement we're not asking that commercial bank to sit in back of \$1 million. We're asking them to sit in back of \$75,000.00 that is going to be on the property tax bill and they typically in commercial will impound that property tax payment along with the mortgage so they're actually making the property tax payments and they know well in advance of a property tax bill if there's going to be a problem through their impoundment.

Holly Carr: Ok.

John Kinney: Erick, do you want to comment on this too?

Erick Shambarger: Yeah. It has not been as much of an issue as I had expected it would be. We did in our program manual provide some guidance to perspective borrowers about how to talk to their bank and there's an organization nationally called PACE now that produced some documents that kind of help have that conversation with banks and it's helpful if the existing mortgage holder is a local bank or a regional bank and you can actually talk to a person. That's definitely helpful but as a program administrator when I have a building owner who wants to do PACE I offer to help them have that conversation with their bank.

And I think part of the way to frame it to that bank is us just trying to make it seem not exotic but that put it into context of property taxes and municipal special charges or special assessments which they're very familiar with. And if you can say "Look, it's really no different than that and it's structure and oh, by the way we're adding value to the building" I think you can make a pretty good case to the mortgage holder that it's in their interest as well as the building owners to approve the project.

John Kinney: I do think it's important to have a pretty sophisticated discussion with them though. We typically will go in and do pre and post

covenant compliant certificates so they can see that these actually improvements actually improve the covenants with those mortgage holder have and we've gone all the way to the chief credit officer at Wells Fargo and Bank of America to make sure that the large national mortgage holders understand these things. So the large banks are not going to do it generically but they are all reasonable if you get to the right level.

Holly Carr:

Great. Thanks to both of you for that. We have so many fantastic questions here and I encourage folks – we're right at the end of our session so I really encourage folks if you are one the many people who we haven't had a chance to respond to questions for we will provide email addresses for our presenters today and I encourage you to dialogue with them via email and get answers to your questions. We had some really interesting ones come up. And I do want to spend the last minute of our session – if we could go to the next slide please – letting folks know about our November session.

We'll be looking at the next big things in energy efficiencies, looking at the hit catalyst program here at the U.S. Department of Energy which is a methodology for finding and prioritizing energy efficiency technologies for buildings that are in development in R&D that are ready or perhaps ready for the market. And then working with you guys out there, organizations who are interested to demonstrate these technologies and really show that they are market ready and can be deployed more broadly. So we'll have a number of folks on in November on the Fourth to talk about that hit list as well as some of our technology demo programs and how you can get involved. You can register at the Better Buildings Challenge website. I believe that is up today so you can go there and get ready for that.

With that I'd like to go to the next slide and just offer a heart felt thank you to our panelists who joined us today. You'll see your email addresses here. Again if you have questions that you'd like to ask them directly please do. If you'd like to learn more about the Better Buildings Challenge or the alliance we had a couple of questions about those programs come in, please feel free to contact me directly at the email address given or the Better Buildings Alliance program lead Kristen [Tedonyo](#) at her email.

I encourage you to follow the Better Buildings Initiative on Twitter for all of the latest info and a reminder that you will receive an email following this session when the archive is available for viewing and that should be within the next week or so. So again

thank you to our panelists very, very much for your time and your comments and goodbye to everybody. We'll see you in November.

Erick Shambarger: Thank you.

[End of Audio]