

Toni Gallo:

Good afternoon. I'm Toni Gallo with the U.S. Department of Energy's Better Buildings Initiative. The aim of this initiative is to work with various commercial, public and residential sectors to reduce energy consumption in individual building portfolios by 20 percent. I'd like to welcome you to the February edition of the Better Buildings Webinar Series. In this series, we profile the best practices of Better Buildings Challenge and alliance partners and other organizations working to improve energy efficiency in buildings. Next slide, please.

Today, we'll take a look at a method for financing energy-efficiency retrofits in multifamily housing for both small and large organizations. Owners of multifamily housing, particularly the affordable multifamily housing sector, can run into technical and financial barriers to incorporating energy and water-saving improvements into their developments. This webinar provides you with some examples of how the paid-from-savings model can work for your property. Next slide, please.

So, let me go ahead and introduce our presenters. I want to introduce Jeff Greenberger. Jeff is one of the founding partners of Affordable Community Energy, also known as ACE. ACE is a mission-driven utility services company, which provides energy efficiency, water conservation, and on-site electricity production retrofits to multifamily affordable housing. Jeff has spent most of his career in the private sector in commercial real estate services both as a lawyer and as a consultant.

We also have Dick Santangelo. Dick is a founder and president of Apollo Engineering Solutions. As the former Department of Housing and Urban Developments, or HUDs, public and Indian housing energy program manager, Dick was the champion in HUD's efforts to reduce energy consumption in 3,200 public housing agencies throughout the country. Dick started Apollo Engineering Solutions in 2010, and the focus of his company is to improve conservation and resiliency in the assisted and affordable housing markets.

And lastly, I am Toni Gallo, your humble moderator. I'm senior manager with the consulting firm ICF and an account manager serving the multifamily housing sector of the Department of Energy's Better Buildings Challenge under contract with U.S. Department of Housing and Urban Development. I have over 30 years' experience in development, management, rehab, and preservation of HUD-assisted affordable multifamily rental housing. So I wanted to give you a warm welcome and thank you all for being with us today. Next slide, please.

So before we get started, just a couple of logistical announcements. I want to remind the audience that during the presentation you will be on mute, which will enhance your listening experience. We will respond to questions probably the last third of the presentation. You are welcome and we encourage you to submit questions through the chat box on your webinar screen throughout the session today. And at the end we'll try to get to as many questions as we possibly can. The session will be archived and posted to the Better Buildings Solution Center website for your reference in approximately one week from today.

So to start us off, let's get a sense of how owners of multifamily housing properties, both HUD-insured public housing and other types of multifamily properties can use the paid-from-savings model to finance important energy-efficiency retrofits. So we'll get started with Jeff Greenberger. Next slide, please.

Jeff Greenberger: Thank you, Toni. Hello, everybody. We have a lot of information to get to share with you today, and we want to leave at least 20 minutes for questions and answers. So we'll be talking fast, hopefully not too fast. Our agenda today is fairly straightforward. Dick's gonna describe what we're trying to accomplish with this presentation today. I'll define a few of the terms that we will be repeatedly using. Then we'll talk about why someone would even want to consider this, the benefits from it, and then the challenges and solutions to making it happen. Dick, do you want to tell them about our objectives for today?

Richard Santangelo: Okay. Thanks, Jeff. Good afternoon, everybody, and glad you could join us. Today we're talking about a paid-from-savings approach that can help overcome technical and financial barriers of getting traditional energy and water measures paid for, in addition to using any excess savings for offsetting the cost of renewables, improvements in resiliency, healthy-homes improvements, and assisted and affordable housing. A takeaway from this webinar and something I like to tell clients is that efficiency products are about 40-percent technical and about 60-percent financial. Technology today exists in many forms. We could solve many, many technical issues and problems. The art is really how to finance a project in a way that you can afford. Jeff?

Jeff Greenberger: I'm gonna to, as I said, define a few of the terms that we'll be repeatedly using. Most of you know the concept of energy conservation measures, or ECMs, that may include everything from changing out light bulbs to sophisticated controls or even new boilers or other systems, anything that will help to reduce either consumption of electricity or natural gas. And in this context, we'll

also include generally water-conservation measures and renewable energy systems. So that's ECMs.

We're gonna focus, because it's what Dick and I know a lot about, on public housing and affordable housing, although for any of you who are on the call that might be managing market rate housing, most of what we're gonna talk about is applicable, although there may be some differences that we can discuss in the Q&A. Public housing is government-administered housing for low-income families and individuals where the cost of the housing is 100-percent subsidized. Affordable housing is partially subsidized through tax credits or below-market loans or direct-rental subsidies or other things, but also serving the next level of low-income individuals.

And then that brings us to the sort of core topic for today, which is paid-from-savings, which is also known sometimes as pay-for-performance or pay-for-success. It's basically based on the premise that in many instances the value of savings that come from ECMs broadly are enough to repay the cost of those ECMs over a financially-viable period. Depending on what the ECMs are involved in and a number of other factors, this payback period might be anywhere from one to 25 years, and the length of that payback period will influence the solution that you settle on. Dick?

Richard Santangelo: So why would an owner of PHA bother? What really are the benefits of paid-from-savings? I was reading recently an energy-efficiency survey that was conducted by the Institute of Real Estate Management, known as IREM. And so IREM surveys property managers, portfolio managers, facility managers, risk managers, and what they found was that the respondents recognized the financial benefits of energy efficiency as a way to control costs and increase revenue through higher tenant demand and retention. I think this survey is very important because it shows that the real estate market, which is what we're all in, is recognizing something that we in the energy efficiency business have known for quite some time. Energy efficiency leads to reduced operating costs, higher-asset values, and hopefully higher appraisal values. So just as important are the benefits of improving resident health and comfort, reducing the greenhouse effects, creating jobs in the local community where the projects are, and then of course greater energy independence for the U.S., Jeff?

Jeff Greenberger: As Dick pointed out, there are a lot of good reasons to pursue sustainability in general and PSF solutions in particular. So if there are so many reasons, why hasn't everyone installed them? Well the reason for that is that there are also a lot of countervailing reasons

why it's hard to do. In our experience with affordable housing, those reasons come down to sort of three basic barriers. The first is the lack of resources to dedicate to green projects. Those of you who work in affordable housing or any other type of housing know how stretched the staff is typically with the 150 pounds of work to put into 100-pound bag. They barely have time to do their corporate work, so taking on a project of some sophistication is very difficult.

Related to that is a lack of expertise, which really manifests itself in two ways. First is being able to assess with all the alternatives out there what the optimal mix is for a particular property or properties. And secondly, to assess what level of risk associated with the performance of those improvements or and/or any other risk associated with them. But by far, as Dick said, the biggest barrier has been capital. And finding money for these kind of projects is not unique to affordable housing, but there are some reasons why it's particularly difficult in this area. First, the economics of affordable housing are very tight, and owners, particularly nonprofit owners, don't have the extra cash laying around. And to the extent that they have a balance sheet or assets against which they could borrow new money, the owners will typically want to save that balance sheet, those assets and the borrowing power, to support new affordable housing.

Compounding that is the fact that most affordable housing projects are put together with a lasagna of capital layers, and each of those layers has its own sensitivity, and most of them, if not all of the layers, don't want additional liens to be placed on the property. So if an owner gets through all that, then we still have to say, "Are we gonna commit our capital based on the types of returns that one would get from energies, ECMs?" So there's a lot of reasons why people don't do that. Dick, what are the challenges for public housing?

Richard Santangelo: Well, thank you, Jeff. You know like affordable housing, public housing has its challenges also. In public housing, the PFS, or paid-from-savings, is actually a well-defined program known as energy-performance contracting, and that may be the one advantage that public housing might have in this area over affordable housing. However, however, the EPC process can take 12 to 18 months before a new toilet flushes. *[Laughs]* And I always like to think about projects in terms of chicken to the drive-out window. If I don't get the chicken to the drive-out window, I don't make any money, and that's really what it's about, when the equipment gets installed and when the owner realizes its savings.

Also, within the last several years, HUD initiated the Rental-Assistance Demonstration Program, or RAD, and that's given pause to PHAs trying to decide well should I stay in the traditional public housing world or should I move to the multifamily world through the RAD program? And for those of you who are interested in knowing more about RAD, we reference at the end of the discussion today an article that was written on the intersection of EPCs in RAD. Expertise can be a challenge too. We find that after a small public-housing authority in particular collects the rent, maintains his physical assets and complies with HUD regulations, there's just not much time at the end of the day to sit back and think about energy efficiency.

Capital, as Jeff points out, is a challenge in any world, public housing or affordable housing. Energy financing can be up to 20 years. However, many PHAs, but especially small PHAs are risk averse, preferring shorter loan periods. And then of course that then limits the long-term energy conservation measures that you might have intended at the beginning of your project. Also, projects less than a million dollars can be challenging in even finding the finance. Another challenge is proration. In the world of public housing, proration is a big concern so that in 2017 of this year proration is 85 cents for every dollar of public housing eligibility. So that makes it tough you know to fund just everyday-operating costs.

Also, there's a question of guaranties. ESCOs, or an energy services company-managed project, provides a guarantee, however, at a premium with higher overhead costs. So the question is if I do a self-managed project to lower overhead costs, how do I guarantee my savings. Jeff?

Jeff Greenberger:

So in the face of all these challenges, there are solutions that have been developed and increasingly are being applied across these portfolios, and the ones we're gonna focus on obviously today are paid-from-savings approaches. In a sense, paid-from-savings has been around for quite a long time. It's at the base of lease equipment or large-equipment leases where the manufacturers understood a long time ago that if they wanted somebody to buy something with big capital costs that they were gonna have to provide a way to pay for it over time. And this developed into leases where again large equipment and now renewables the customer or the owning of the affordable housing leases the equipment and pays the lease payments on the assumption that the value that they get from the new-equipment renewables or the more-efficient boiler for example will help to or completely pay the lease payments.

More recently, energy services agreements, or water services agreements as well, and power-purchased agreements have become a way to monetize the savings from energy efficiency, water conservation, and production of electricity from solar panels, combined heat and power, etcetera. And ESA or WSA works like this, the third-party energy-service company, or an ESCO, will provide the resources and expertise that we mentioned to evaluate, recommend, design, install, and manage a set of improvements that are technically required and financially feasible. In some cases, as with our company, the ESCO will provide financing for the improvements. In other cases, rather than providing the capital, ESCO will give a guarantee for a level of savings that if the owners have the ability to do it would then give them the confidence to borrow the money themselves.

These agreements you know are clearly equivalent of financing. They will almost certainly, it's just probably a bit over time, within a year or two almost any of these agreements will show up on the balance sheet as a capital lease, which we'll discuss in a little bit the implications of that. An energy-services agreement may run from ten to as long as 25 years. We have here at the end an approach described as low-hanging-fruit approach. In a sense, it might have been first in this discussion, but since we don't favor it, we put it last. It's been a very typical approach. There are certain improvements like lighting and water in some cases and other controls where the savings can be realized from them are very close to the cost of installing them, particularly after incentives or grants or rebates have been collected. So this is probably the best, most-viable do-it-yourself approach, which says you just do the things that are the easiest to do.

The reason why we discourage that is that we believe that you can use the faster paybacks of the low-hanging fruit to reach higher in the tree, if you will, to do home-building retrofits that are much deeper and broader by using the faster paybacks to average down the overall payback period to a point where it can be financed by an energy-service company or someone else. Dick?

Richard Santangelo: So as I mentioned before, there's a well-defined PFS program in public housing called energy-performance contracting. 1.3 billion dollars have been invested over the years in approximately 330 projects. So if you're in a public housing authority and you need improvement or need to improve your energy efficiency or need to replace obsolete energy and water equipment and you're not looking into or doing any PC, you may be leaving money on the table. HUD has three main incentives, two of which allow you to keep 100 percent of the savings. So those are the frozen-rolling

base and resident-paid utilities. And a third one, the add-on subsidy, is an incentive which HUD basically pays for the equipment.

Most of the common financing approaches, the most common financing approach in an EPC, is the lease payment. At the end of the lease purchase agreement, the PHA owns the equipment. All of the financing approaches that you see listed here, capital-fund financing, power-purchase agreement, tax credit, off-balance sheet and grants, can be used to partner in an EPC. However, there is some applicable guidance that needs to be adhered to. So I'm an owner or I'm a housing authority and I'm interested. How do I begin? What do I need to consider, Jeff?

Jeff Greenberger:

So we're assuming now that you're at the point where you're at least interested in exploring this kind of third-party PSF relation too. We hope, as I said before, you're not considering a low-hanging-fruit approach. This slide is a quick overview of two important topics. First of all, what's the data that you need to collect and consider as you move forward. And secondly, how do you clarify what your institution's objectives are in doing or entering into this kind of arrangement, 'cause that will determine what form you pursue.

In the issues of what you need to know, clearly at the top is understanding your historical consumption. And this is important really for two reasons. First, in most cases, you will need it to validate the measure the savings that are used to pay for the improvements. You need to set a baseline. I will say that there are two approaches that are often used in energy-services agreements, and one is an actual measured-savings approach, which we favor. Another in some instances is a deem-savings approach where it's more projection or an estimate of what the improvements should deliver in terms of savings. As long as you're able to benchmark the level of savings and track the new savings, it's a much safer approach from your perspective to base the payments on actual savings.

The second reason for wanting to understand your basic consumption is really in the process of determining whether this is something you should pursue. The third-party service providers can use historical consumption and the number of existing benchmarking platforms to come fairly close to predicting without a lot of on-site analysis what the level of opportunity is for savings. And this will make it easier for you to make decisions about whether to pursue the program and for them as well. I will say that in the affordable housing world there are three main platforms

where this is being done. Portfolio manager, WegoWise, and the one that we use, Energy Scorecard.

In addition to your utility consumption, you're gonna wanna know about the condition and qualitative performance of your systems, 'cause there may be benefits that come from improving systems in terms of comfort, health, and safety that go beyond just the actual financial savings. We also, particularly in affordable housing, want to know where you are in the redevelopment cycle so you can make sure that any improvements that are done for sustainability reasons credit can be given for them and a refinancing and that the scope of refinancing for the project as a whole can reflect the fact that certain things have already been done. And as we'll talk about more in a minute, it's very important to understand which stakeholders are involved in the project and what their reactions to your entering into a paid-from-savings program might be.

As important as collecting this information is, is also just determining what are your goals. Are you as an institution interested in greater short-term savings or greater savings over the long term? Can you fund any of these improvements? How willing are you to tolerate performance risk, instruction risk, financing risk, the other risks that might be in different levels offloaded to your third-party partner? And finally, although in our experience it never drives the decision, how committed is your institution to climate change and other environmental and sustainability-related goals? Next slide, please.

So again, presuming that you've collected and analyzed that data, you've clarified your objectives and determined your favored approach, and you've gotten internal approval for whatever that means, you've got it done, but in a sense your journey is just starting. You now have to gain approval from your internal stakeholders, and as I mentioned, first step is to identify who those might be, obvious suspects or your lenders, your tax credit and other investors, governmental entities and particularly HUD. Then there's a question that owners often ask, which is do we seek approval or ask for forgiveness. And I would suggest, even though the process of getting approval is excruciating, I can feel that pain, in our first project we were delayed for over nine months and held up figuratively for about \$50,000.00 of concession by one low-income-housing tax-credit investor who would not consent to the transaction.

But having said that and having experienced that, our recommendation would be to assume that you will seek approval or at least tell your various stakeholders you're going to do it. It's

very likely that under some term of your loan agreement or your partnership agreement the terms of an energy-services agreement, water-service agreement will require approval, and it's best just to start that process early. In doing that, you're going to want to understand what their issues might be. Obviously, the tax investors will be concerned that the program doesn't upset their tax treatment. Other investors and other stakeholders, including HUD, may be concerned about the fact that a liability will show up on the books as a capital lease. Everyone in that situation is going to want to make sure that there's not a lien against the real estate as a result, which is an approach that energy-service agreements can allow for. How it will affect the cash flow, if they're interested in that, and just in general the rules that have been set for the relationship.

The recommendations I would have for this is allow a lot of time for it and start the process and socializing your stakeholders as early as possible. And this is a very particular suggestion based on the example I mentioned about the ninth-month delay, that don't be involved in a project where you need the approval of one party or you can't go forward. I think at this point I do want to just add one thing, 'cause I know that the title of this presentation was doing this even at small scale. And I think a lot of the solutions here work at small scale. In our approach, we welcome smaller owners of affordable housing but we would attempt to put them together with others to form a larger portfolio. This has two benefits. One is that it diversifies the risk that our lenders see, and two, it allows us to access capital that's interested in scale.

I mention this here because that would complicate the approval process because we would have to get the approval of not only for you but for the other groups, the other owners that we might put into that portfolio. Dick, what's it look like on the public housing side?

Richard Santangelo: Okay. So on the public housing side, obviously while public housing and multifamily are different, there are similarities in terms of stakeholders; we all have stakeholders. Once the board approves the idea of a project, the PHA develops a request for proposal or what we call an RFP that HUD needs to approve for fairness and compliance, the RFP is issued, and an energy-services company is selected. Once the ESCO is selected, the ESCO will conduct an investment-grade energy audit. And the difference between a typical energy audit and an IGEA is that the IGEA there is a distinct focus in the report on savings cash flow and underwriting and investment.

One of the goals of an EPC is to try to obtain as much excess savings, as Jeff had mentioned earlier, from low-hanging fruit like water and lighting to offset slower measures like boilers, windows, renewables, resiliency in healthy homes. The Philadelphia Housing Authority is a good example of a housing authority that was innovative and creative in its PFS approach, including resiliency in healthy homes as requirements in their request for proposal. Financing is all but finalized before HUD approval. The project proposal is sent to HUD for approval. HUD issues a notice to proceed on the basis that the utility savings, and this is very important, that the utility savings will pay for the project. HUD will not approve the project if the savings don't pay for the project.

Next, please. Next slide. So now you have approval, what happens next? And here I think, Jeff, we have several similarities in public housing in multifamily, maybe just differences in terminology. In public housing, we say that an energy-services agreement is what we sign with an ESCO, or what a housing authority signs with an ESCO. The ESCO acts as a general contractor on behalf of the housing authority, and they'll award the construction and installation contracts. Once the systems are installed, commissioning takes place, and commissioning is a process of assuring that all systems and all the components of the building are designed, installed, tested, operated and maintained according to the operational requirements of the owner, or PHA.

So it's very similar to you know when the U.S. Navy commissioned the ship, you know can it perform all the functions it's designed to do? The systems are turned over to the PHA; essentially the project is closed out. And then the repayment commences along now with the HUD incentives. Toni?

Toni Gallo:

Thanks very much, Jeff. Thanks very much, Dick. That was very interesting. As you can see, if you'd like to get in touch with Jeff and/or Dick, their contact information is here on the slide. And just to reiterate, the presentation will be archived within about a week so that you'll be able to access the slides on the Better Buildings Solution Center website. Next slide, please.

So to enhance your experience and knowledge about the pay-for-success model, I'd like to point out some specific resources provided by our presenters about pay-for-success programs, energy-performance contract, etcetera. So two of these resources that you see here are from the Narrow Journal of Housing and Community Development. And again, these are live links that you'll be able to access once the presentation is archived. But the issues of the journal that I've mentioned here are also available on

Narrow's website. And then the other resource is the webpage on Energy Performance Contracting, which is actually located on the HUD.gov website. So Next slide, please.

Okay. So now we're at the part of the presentation where we do questions and answers, and we will answer as many as we can given the time that we have available. So I'd like to get started with a question that is for Dick. So, Dick, why would a PHA choose a self-managed project over an ESCO-managed project?

Richard Santangelo: Good question, Toni. So a lot of that really depends on capacity and capability of the housing authority. As we mentioned before, there are many challenges, expertise being one of them. Resources, the ability to actually do a project. So if you are doing a self-managed project, you're doing all the general contracting and the oversight. And then also with an energy-performance contract or an ESCO, energy-services company, a project, there's a guarantee. And for many, that guaranteed savings is very, very important. So even a housing authority as large as NYCHA, New York City Housing Authority, they've done both ESCO and self-managed projects.

And principally one of the reasons for doing the ESCO-managed project, even though they have a very skilled engineering staff, is that their staff is dedicated to the day-to-day operations of the housing authority, and so they don't really have the extra resources to dedicate to managing. And plus, the ESCO assumes the risk in terms of the guarantee. So those would be the reasons why you would find which approach best works for you.

Toni Gallo: Great. Thanks, Dick. Okay. We'll go on to another question that I'll give to Jeff to answer. Can you talk a little bit about power-purchase agreements and how they work?

Jeff Greenberger: Yes, I will. Power-purchase agreement relates to, as I mentioned briefly as the contractor relates to on-site electrical production typically, typically solar panel but there are other solutions that might generate electricity. And it says, quite simply as the title suggests, it's an agreement from the owner of the property to purchase the power that's produced on site. It's more complicated legally than all of that, but the way that it works, again, is that the power-purchase agreement service provider would provide the expertise, the resources, and the capital to install say solar panels. And in the power-purchase agreement, there would be an agreement on at what price the owners would purchase the electricity that's produced on site. And typically, the benefits of this are that the costs are fixed so that the power-purchase-

agreement provider can provide a below-market rate and keep the increases within small range or the term of the agreement.

So it's, again, a way to finance the improvements. I notice that we have another question about getting to the economics of power-purchase agreements, and I would say in the last four or five years remarkable how much interest in capital has gone into support solar projects. And in many locations, it's easier actually to finance solar panels than it is energy efficiency, actually almost everywhere. And that's because capital sources have become comfortable with underwriting production from solar panels. The one issue is that typically power-purchase agreements are going to be 15 to 20 years long, whereas some energy-service agreements can be shorter, like ten years.

Toni Gallo: Great, thank you. Okay. This next question is for Dick; you're gonna like this one, Dick. What is PHA and what is RAD?

Richard Santangelo: Okay. So PHA is a public housing authority, that's what it stands for. There are roughly 3,200 public housing authorities across the country. They are not owned by HUD. Essentially what HUD does is HUD subsidizes public housing authorities. So a housing authority might submit an application to become a public housing authority and actually ask HUD to provide supplement between what is the *[Break in audio]* in the actual expenses. And then HUD will come in and there'll be a contract agreement called annual contributions contracts, ACC, in which money is provided to the housing authority because of their role in providing low-income housing. And there are some requirements for that money as part of the contract.

So again, approximately 3,100, 3,200 housing authorities across the country. And usually they're owned either by entities of the state or could be the city, could be the county. But again, HUD does not own a public housing authority. RAD is a relatively new program. It's the Rental-Assistance Demonstration Program, and its genesis in part is because there is about a 26-billion-dollar backlog in capital expenses in the public housing community, among the 3,200 housing authorities, and with an appropriation that has been declining. Two sources of income for housing authorities are an operating fund and capital fund. The capital fund is about 1.9 billion, and the accrual rate for the backlog is about 3.4 billion. It doesn't take a lot of mathematics to figure out that if I only get 1.9 and I'm accruing 3.4, I'm never gonna catch up. So that's the genesis of the 26 billion.

And what RAD attempts to do is basically move public housing authorities into the multifamily world. That allows them to essentially take a mortgage on the property, which they now cannot do, okay. I mean there's a lot of ways to finance energy or to finance capital improvements, but none of them as good as the RAD program. So many housing authorities are making the decision to switch to RAD. The problem is is that there's a ceiling, and that ceiling right now is approved by Congress and has been reached. And so housing authorities who are interested are basically getting on a waiting list and basically waiting for Congress to remove that ceiling. So let me stop there and allow for some other questions.

Toni Gallo: That was a great answer; thank you. That's really a good – RAD is an interesting program. Similar kind of question for Jeff. What is an ESA and an EPC?

Jeff Greenberger: Well an ESA is an energy-services agreement, which we talked about at the beginning. And again, an agreement whereby the ESCO third-party provider will provide all of the expertise and resources to evaluate, install, and manage the set of improvements. The agreement will typically have means of measuring savings; I know we had a question about deemed in actual savings and our preferred way you would measure actual savings versus the baseline of consumption before the improvements were made. And for those of you maybe familiar with it, the baseline might be adjusted based on differences in temperatures from year to year, occupancy, or other things that might affect savings consumption that don't have to do with the improvements you put in.

So actual savings is one way, and deemed savings is another way where certain circumstances determine that it's very hard to isolate the savings related to the improvements put in, so the parties agree on what they'll deem or estimate the savings to be, and payments will be based on that.

Toni Gallo: Thanks, Jeff. Okay, this next question is for Dick. Is energy-performance contracting only available to public housing authorities?

Richard Santangelo: So, Toni, that's a really great question, because you know I describe in public housing HUD's incentives. The process of energy-performance contracting simply means that savings are used – it's based on performance, so obviously the measures generate savings and the savings are put back in to pay the project cost or debt service. And so technically it is not just for public housing authorities, but what is what why it's often associated with

public housing authorities is because of the HUD incentives. The HUD incentives are the thing that separates you know a commercial kind of EPC from a PHA kind of EPC. The fact that HUD in most instances, depending on the incentive, will either allow you to keep 100 percent of the savings to attribute or pay toward the project costs and/or provide an add-on subsidy. So that it an addition to your subsidy that you currently get, an addition to your operating subsidy that would be associated directly to the cost of the additional measures.

And so those two things are major benefits of the EPC program, or energy-performance contracting, as it applies to public housing authorities. It would be great if that same program could somehow, and there's been a lot of discussion about it, can actually get over into the multifamily, but there's just so much associated with it principally private ownership in the multifamily world versus you know more of a county or governmental ownership of property in the public housing world and just a lot of contractual and transitional issues that separate the two programs. But that is – and I hope that answered the question. So EPC and the concept of having an ESCO, or energy-services company, come in, do a project and have the savings pay for the debt service is not just specific to public housing.

Toni Gallo:

Okay. This next question is for Jeff and it's are the savings sufficient and the payback periods short enough to warrant the risks and other costs of doing this kind of financing?

Jeff Greenberger:

That is a fabulous question, and it gets into a whole set of factors that we haven't yet had time to talk about and there are several levels down in answering it. First of all, as people probably understand, the economics of doing this kind of work are really driven by two localized factors. One is what is the cost of electricity and to the lesser extent natural gas and I'd say lesser extent for natural gas 'cause that price is closer to a national pricing and then also the cost of water on one hand. And the other dynamic is how much local utility or state subsidies are available to support this work. So the question of payback periods is so localized, much, much easier to do comprehensive retrofits in California than it might be in say Mississippi to pick on *[Break in audio]* state.

So the answer to that question is relative, but in those states, California, the northeast, upper Midwest, Mid-Atlantic states, the combination of the cost of utilities and the level of incentives still makes it possible to do a range of savings. In some states, it's gonna be a bigger range; in others it's gonna be a lesser, but it's possible. Without getting into politics, it is our sense that the

economics of doing energy efficiency and water conservation, because it's so localized, should not be materially affected by a change in administration.

For solar and renewables, there is a real possibility that it will be affected not so much through direct policy but to the extent that the suggested changes and significant reductions in corporate tax rates occur, then the value of investment tax credits, which right now pay close to 30 percent of the cost of renewables, that the investors who buy into the partnerships for the investment tax credits won't have the same incentive and may not go through the brain damage of doing that based on their decreased value of those tax credits.

So I think that the political impact on solar may be greater to us that we do have you know everyday-increased productivity and better solar technology so that that may continue to be possible again in states like California, etcetera. The part about the risk, I mean I think that the point that getting to before that the third-party service providers such as ours and many others have got to the point where they have a business of assessing those risks and taking them on along with the people who are investing and lending to them. To the extent that that question relates to taking on the risk yourself, I think that's a decision you'd have to make. Obviously, we think it's a reasonable risk, but again that's our business.

Toni Gallo: Thanks, Jeff. I think we have time for one more short question. So this is for Dick. What about CDC-owned affordable housing? Are these ownership entities ever described as PHAs?

Richard Santangelo: Not to my knowledge; no, they are not. Are you talking specific – well I'm asking a question like somebody's gonna answer me, but community-development corporations? No, not that I'm aware of.

Toni Gallo: I think the issue was is a nonprofit ever considered a PHA, but PHA is a term of art that is specific to public housing agencies that are ultimately answerable to HUD. So next slide, please. We hope you'll plan to attend the next Better Buildings Webinar on Tuesday March 7th from 3 to 4 PM Eastern. This will be called Zero Energy Buildings from Dream to Reality in Public and Private Sectors. And this is gonna be very interesting because it's going to talk about how you can actually zero out your costs, depending upon the type of retrofits that you have in your building. And it probably will touch upon renewable-energy sources. So next slide, please.

I would very much encourage you to register today for the 2017 Better Buildings Summit that's being held in Washington D.C.

from May 15th through 17th. There will be hundreds of your colleagues there and peers, and you will learn a lot about the latest technology in energy efficiency and other topics related to various building sectors. Next slide.

So with that, I'd like to thank our panelists very much for taking the time to be with us today. And please feel free to contact our presenters directly with additional questions or if we weren't able to get to your questions in the Q&A period. If you'd like to learn more about the Better Buildings Challenge or Alliance, please check out our website or feel free to contact Holly Carr directly at the email address shown on the slide.

I encourage you to follow the Better Buildings Initiative on Twitter for all the latest-and-greatest information. And again, you will receive an email notice when the archive of the session is available online. So thanks to everyone for participating. Have a great afternoon.

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