

US EPA ARCHIVE DOCUMENT

# Beyond the Light Touch: Next Steps for Improving Energy Efficiency in Multi-Family Affordable Housing

Webcast Transcript

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## Welcome

### Slide 1: Introduction Slide

Operator: This is Conference #15301762.

Good afternoon, my name is Stephanie and I will be your conference operator today.

At this time, I would like to welcome everyone to the Beyond the Light Touch: Next Steps for Improving Energy Efficiency and Multifamily Affordable Housing. All lines have been placed on mute to prevent any background noise. Thank you.

I would now like to turn the call over to Victoria Ludwig. Please go ahead.

### Slide 2: Introduction

Victoria Ludwig: Thank you, Stephanie. Welcome, everyone, to our webcast. Thank you for joining us today. We hope in the next hour and a half to teach you a lot about best practices for successfully delivering energy efficiency measures to multifamily affordable households.

We have a great lineup today. I'll explain that in a second but first we want to go through some of the logistics for how to use the Go-To-Webinar technology. So I'm going to ask my colleague Wendy Jaglom to go through that please.

### Slide 3: How to Participate Today

Wendy Jaglom: Thanks, Victoria. So you can see on your screen the Go-To-Webinar question pane which you should have on your monitor. You can open and close the Go-To-Webinar control panel using the red arrow in the upper left hand corner. Audio is available only by telephone. The call-in information is on the slide.

As Stephanie mentioned, all participants are on mute but please – we encourage you to please ask questions of the speakers throughout the webcast. You can use the Go-To-Webinar question pane to ask your question. Simply type your question into the box and hit “Send” to submit the question. We ask that you do include the name of the speaker that you would like to answer your question.

And finally, if you experience any technical difficulties, please contact me. It looks like my e-mail is cutoff at the bottom there but it's wendy.jaglom, J-A-G-L-O-M, @icfi.com. Back to you, Victoria.

#### Slide 4: Webcast Agenda

Victoria Ludwig: Thank you, Wendy. So today, we have a great agenda. The introduction is going to be given by Todd Nedwick and Crystal Bergemann. And they're going to set the context for this issue of providing energy efficiency services to multifamily affordable housing. And Crystal is also going to explain a little bit about HUD's role in this sector.

Next, we have two folks from Elevate Energy. They're going to talk about how their multifamily energy efficiency program has been successful through an approach that focuses directly on the needs of the building owners in a – in a comprehensive way. They're also going to talk about some case studies of some of the on the ground work that they've done.

And finally, we have folks from the Maryland State government talking about their approach from a statewide perspective on working out of the housing agency and coordinating energy efficiency programs throughout the state focused on multifamily housing.

After that, we will have 20 or 25 minutes for Q&A session. During all the presentations, you can ask your questions to the – to the pane. You don't have to wait until the end to enter your questions as it comes to your mind. And you can see at the bottom that after today, in a couple of weeks, we will have the presentations available, both the PowerPoints and the audio recording, on our website which is [www3.epa.gov/statelocalclimate](http://www3.epa.gov/statelocalclimate).

#### Slide 5: Webcast Series on Energy Programs for Low-Income Communities

Victoria Ludwig: So some background, this webcast is part of a series, an ongoing series. We have the first one in November. The series is overall focused on the challenge of providing energy efficiency and renewable energy services to low income communities, looking at best practices in a variety of sectors. The first one was focused on the overall best practice for all kinds of energy programs.

Today, as you can see, is focused on the multifamily affordable housing sector. The next one will be in March and that theme has yet to be determined, so please stay tuned. You can hear about the future webcasts that are coming out by going to that same website I just mentioned.

And on that website, you can also sign up for our newsletter which will give you the announcement as soon as it comes out about the next webcast.

#### Slide 6: U.S. EPA's State and Local Climate and Energy Program

Victoria Ludwig: So some quick background about who we are, this webcast is being sponsored by the EPA State and Local Climate and Energy program, which is a program that works with state and local governments across the U.S. to help them achieve a variety of goals including mitigating climate change, improving air quality, advancing clean energy, and improving economic development.

We have analytical tools, we provide networking opportunities, we collect best practices and case studies of successful programs, and a lot of things that we couldn't possibly fit on this slide.

So please go to the website. But two that we think are relevant for this topic, we do have a guide to providing energy efficiency in affordable housing that you can see. And also our guide on the multiple benefits of clean energy focuses on providing overall energy services in a successful way.

Before we get to our first speaker, I want to introduce my colleague Leslie Cook who's going to – who's representing our ENERGY STAR Program. We do a lot of great things here at EPA in the sector of energy efficiency so we wanted to let you know about them. So I'll turn it over to you, Leslie.

#### Slide 7: ENERGY STAR

Leslie Cook: Great. Thanks, Victoria. Thanks, everyone, for joining us today. I'm just quickly going to go through a few ENERGY STAR resources that are available for these types of programs. Some of which might be discussed by some of our co-presenters today.

So, EPA has a voluntary program called ENERGY STAR. Hopefully many of you, or if not, all of you are familiar with it. We are the simple choice for energy efficiency. This is a voluntary program administered by EPA to help businesses, individuals, and state and local governments save money and protect the climate through increased energy efficiency.

So we are the simple choice for energy efficiency for all of your programs touching products, commercial buildings, homes, industrial plants, and multifamily programs that can surely find

office shelf resources for products related outreach for owners and occupants. And then we do have some targeted resources for existing and designed multifamily properties that I will cover here briefly.

#### Slide 8: Off-the-Shelf ENERGY STAR Resources for Existing Buildings

Leslie Cook: From our existing ENERGY STAR buildings program, we do have a number of things that can be very useful in launching, implementing and then recognizing successful multifamily programs. So, first and foremost through ENERGY STAR portfolio manager, you had a benchmarking tool whereby multifamily properties can be tracked and assessed using whole building energy information and some really simple information about the buildings themselves. So, great resource there.

Next we have a lot of office shelf resources on the technical component of improving and maintaining a high performing multifamily property with low cost and no cost tips for energy and water savings, kind of touching on that next there as long – as well as some guidelines for energy management. A lot of communication resources as well are available for ENERGY STAR including office shelf web-based trainings.

We have some new quick videos on energy management and benchmarking, et cetera and some great new package content for all of you out there in the field, training others about efficiency programs or benchmarking and other related topics.

All of that is related on our multifamily web portal you see on your screen there. And then some more targeted training resources are available at [energystar.gov/buildings/training](http://energystar.gov/buildings/training). So we hope that's helpful.

#### Slide 9: 1-100 ENERGY STAR Score for Multifamily: Launched Fall 2014

Leslie Cook: A little more in benchmarking for port – with portfolio manager, I did want to highlight a fairly new availability of 1 through 100 energy performance score that is calculated through portfolio manager. We launched this score for multifamily building in fall of 2014. And that is in addition to a number of building types across the country that can get the 1 through 100 score for energy performance.

So if you haven't used portfolio manager in a while, multifamily buildings can now get this 1 through 100 score which is a very simple metric to communicate performance levels and then go on to earn ENERGY STAR certification for existing buildings if you score to 75 or higher.

#### Slide 10: ENERGY STAR

Leslie Cook: And then finally, I wanted to highlight some of our really great resources from the residential branch here at ENERGY STAR. First, for new constructions, for multifamily buildings that are more high-rise, there is a certification program for building from the design phase with the goal of becoming at least 15 percent more efficient than code. Really great program, lots of – lots of good adoption around the country. And then also a similar program for buildings that are more in the low-rise sector. And that's for homes that are designed to be 15 to 30 percent more efficient than your typical new home.

And then for more simple homeowner or apartment-based benchmarking activity, we've got the home energy adviser. This is much like the portfolio manager, benchmarking is a simple tool to assess energy efficiency opportunities. And this is a really great way for homeowners to put some simple information into an online tool and understand how they perform compared to other homes around the country.

So all good stuff all ready to go out the shelves and I hope we can talk to you all more about those in the future webcasts. So, thanks, Victoria.

#### Slide 11: Contact Information

Victoria Ludwig: Thanks, Leslie. A very brief description of all the resources ENERGY STAR has. So feel free to contact us if you have more questions. And we probably will be talking about it again on a future webcast so stay tuned.

This is my contact information, feel free to reach out at anytime. I look forward to talking to you.

#### Slide 12: Webcast Agenda

Victoria Ludwig: And so, let's get started.

## Introduction Part 1

### Next Steps for Improving Energy Efficiency in Multi-Family Affordable Housing

#### Slide 1: Introduction

Victoria Ludwig: First off, speaking in tandem are Todd Nedwick of the National Housing Trust and Crystal Bergemann of U.S. Department of Housing and Urban Development. Todd is the Housing and Energy Efficiency Program Director at the National Housing Trust where he leads their engagement with public and private stakeholder to advance the use of housing and energy resources for affordable housing including working with private utilities.

He's worked closely with national and state partners to develop and advocate best practices for using the weatherization assistance program to improve energy efficiency in multifamily housing.

Crystal is a senior energy policy analyst in HUD's Office of Economic Resilience where she works to embed sustainable and green building policies and practices into HUD's portfolio. She's also the department lead on Renew 300 campaign which is the president's climate action goal – action plan goal of increasing onsite renewable energy capacity in federally-assisted housing to nine-fold by 2020.

Todd and Crystal, we look forward to your presentation.

Todd Nedwick: Great. Thank you so much, Victoria. I just want to confirm that my slide is being viewed. Is it showing?

Victoria Ludwig: Yes, we can see it.

Todd Nedwick: Awesome, great. Thanks so much. So, yes, thank you, Victoria. Thanks so much for hosting this webinar. And also thanks to the EPA for these series of webinars on addressing energy efficiency in low income communities.

As Victoria indicated, I'm going to start off today by providing some context for this discussion. To that end, I will address three key points. First, I will address why it's important to target the multifamily affordable housing stock with energy efficiency improvements.



And second, I will briefly highlight some of the key market and energy characteristics of this housing stock that should be taken into consideration when developing successful energy efficiency strategies.

And then finally third, I will briefly touch on some of the high level features of a well-designed multifamily energy efficiency implementation strategy. Mine will be a high level overview because the presenters following me will be providing much more detailed discussion of successful strategies based on their own experiences as program implementers.

#### Slide 2: About the National Housing Trust

Todd Nedwick: First, let me just give some background about the National Housing Trust. National Housing Trust is a non-profit dedicated to protecting and improving existing affordable rental housing. Throughout the country, there are millions of affordable rental homes that are at risk of being lost from the affordable housing stock either through deterioration or conversion to more expensive housing.

And NHT safeguards these homes through policy engagement, through developing, owning and operating affordable rental homes and through providing capital to help other owners and operators of affordable housing secure their housing.

Throughout all three of these activities, we focused on energy efficiency in housing recognizing that the long term sustainability of affordable housing depends on reducing the economic and environmental impact of our housing stock.

#### Slide 3: About Energy Efficiency for All

Todd Nedwick: I'm also here representing Energy Efficiency for All, or EEFA. EEFA is a partnership of more than three dozen national, regional and state organizations that are working together to make multifamily homes healthy and affordable through energy efficiency. In addition to the National Housing Trust, EEFA is led by the Natural Resources Defense Council, the Energy Foundation and Elevate Energy and is made possible by support from the JPB Foundation.

And the organizing principle behind EEFA is that to effectively address the energy efficiency needs of the affordable multifamily housing stock, there must be collaboration among experts in affordable housing, energy efficiency, community development, finance, and utility engagement.

And so EEFA is working in 12 states to foster these collaborations and to develop tools and resources that will increase energy efficiency investment in their state's affordable multifamily housing stock.

#### Slide 4: Why Target Multifamily Affordable Housing?

Todd Nedwick: So why is it important to target multifamily affordable housing for energy efficiency investments? Well, first of all, if we're going to achieve energy affordability and healthier housing for low income households, you know, we really have to include the multifamily housing stock and that's simply because it is home to a significant portion of these families.

Although multifamily homes make up about 20 percent of our nation's housing, it is home to half of our country's poorest families. So I think that's a very important fact especially in light of the Clean Power Plan implementation, making sure that the Clean Power Plan helps all household including low income households. And so to do that, multifamily housing has to be part of the discussion.

The second main reason is that energy efficiency investments help to sustain the affordable housing stock. Utility costs are the highest operating expense that housing providers have some type of control over. And over the long term reducing operating expenses helps makes it possible to maintain lower rents and reinvest in critical building improvements.

Third, multifamily housing is really an untapped source of energy savings in many states and can help utilities and energy efficiency program administrators meet their efficiency goals if programs are appropriately targeted to this housing stock.

Fourth, multifamily housing can help state and local governments reduce carbon emissions. Multifamily buildings can provide large scale emission reduction opportunities because you're targeting a building with many, many housing units.

And fifth, generally speaking, we know that efficiency investments help the economy by creating local jobs. But just to add to that, I think, in addition when you're lowering energy bills for low income household, that usually means more consumer spending in a local economy as compared to higher income households.

## Slide 5: Energy Characteristics of Multifamily Affordable Housing

Todd Nedwick: So I mentioned that multifamily housing is an untapped source of energy savings. And that's the case for a number of reasons. First, two-thirds of multifamily buildings nationally were built before 1980. Older buildings are likely to be less energy efficient because they have uninflated walls, single-paned windows and just fewer efficiency features.

And in fact, multifamily rental housing have been documented to have far – have fewer energy efficiency features compared with other housing types such as single family rental or owner occupied.

And even within the multifamily rental stock, research has shown that low income multifamily rental housing has been shown to have fewer efficiency measures than multifamily rental housing occupied by higher income households.

The lack of energy efficiency features translates into higher energy expenditures on a square foot basis. And rental multifamily units energy expenditures run 30 percent higher per square foot than in owner-occupied multifamily units and 76 percent higher than an owner-occupied single family detach units.

And finally, several recent studies have borne out the fact that there are significant cost effective energy efficiency gains that we had in the multifamily housing stock, and I will reference one of those studies in just a few minutes.

## Slide 6: Unique Market Characteristics of Multifamily Affordable Housing

Todd Nedwick: So I wanted to briefly lay out some of the unique market characteristics of the multifamily housing stock as compared to other types of buildings. These are important factors to consider when developing energy efficiency strategies for this building sector. In the interest of time, I won't go in to too much detail here but I just wanted to highlight some of these important considerations.

First in the multifamily housing stock, you have considerable variety in building structures, you know, based on number of stories or number of units. And that can certainly have an impact on the type of measures that are most effective. For example, taking into consideration the amount

of service area exposed to outside in a high – high-rise building versus a garden style apartment complex.

Second, you have – you'll also have variation in types of building owners. You have public housing owners, you have private owners of subsidized housing, private owners of market rate housing. So thinking about the different motivations of these owners as you develop programs is important.

Third, it is important to think about who the appropriate decision makers are to target. You know, for a comprehensive retrofit program, the building owner will be involved in the process and probably the key decision maker. But in the case where you're talking about a direct install program, the position to participate is probably more likely with the property manager.

Fourth, the lifecycle of buildings is an important consideration. Multifamily buildings tend to be recapitalized every 15 to 20 years. And at that time, a property owner may be considering significant property and equipment upgrades and so the owner maybe more open to incorporating more comprehensive energy efficiency upgrades at that time.

Fifth, there is different meter configurations in multifamily housing. You have multifamily building common areas which maybe commercial accounts while tenant units are residential account. And that's a challenge since many utility energy efficiency programs are targeted to the customer class. So it makes it difficult to address the full building when the owner has to apply to, you know, to multiple commercial and residential programs.

Sixth, successful strategies certainly require access to contractors with multifamily experience and that might be, you know, different – you know, different firms that are involved in single family programs.

And finally, there's also the challenge of securing whole building energy consumption data across multiple utility accounts in a multifamily building.

Slide 7: Features of well-designed energy efficiency programs for multifamily affordable housing

Todd Nedwick: So, again, in the interest of time, I'll just briefly touch on some of the – some of the features we've seen in well-designed multifamily energy efficiency programs. And the case

studies we'll – we thought we'll share about in a few minutes, we'll certainly touch on some of these in much more – much more detail.

One important consideration is tailoring programs to multifamily housing. It is more effective to have multifamily specific programs that provide measures to address, you know, all of the efficiency opportunities rather than have building owners have to apply, as I just said, to various individual residential and commercial programs.

It's also important to target measures to achieve whole building savings which can sometimes require providing an energy audit to really identify what is, you know, the most – the most effective from a whole building perspective.

When it comes to programs that have income targeting, it's important to acknowledge that, you know, in contrast, the single family housing, you know, verifying the income eligibility on a unit by unit basis is pretty challenging in a multifamily building.

So making that process easier by aligning income requirements with existing affordable housing programs offered by the state housing finance agency, or HUD, is an important consideration.

Another important consideration is how the program will create and grow demand for energy efficiency among building owners, aligning the program with major building lifecycle events when capital investments are to be made and help to engage owners also, helping building owners to benchmark energy usage so they understand energy saving opportunities.

Slide 8: Features of well-designed energy efficiency programs for multifamily affordable housing (continued)

Todd Nedwick: And then financing, maybe necessary to achieve deeper retrofit projects because affordable multifamily building owners typically don't have access to cash on hand to cover upfront cost required to make more comprehensive investments. So providing options for financing along with incentives might be necessary.

Finally, marketing and coordination are important – are important considerations. Coordinating with other market actors including contractors, other program administrators and providing a streamline of one stop experience for the owner has proven successful as Angelina and Peter will certainly demonstrate with the Elevate model.

Also closely working with the housing finance agency which provides financing for affordable multifamily housing and is a known and trusted partner to multifamily owners can help program administrators reach the market.

And, for example, in several states where EEFA is working, we are seeing state housing finance agencies essentially require owners to demonstrate that they've investigated available utility incentives as a requirement for funding from the agency. And this is certainly something that's going to drive multifamily owners to energy efficiency programs.

#### Slide 9: Additional Resources

Todd Nedwick: So I just wanted to conclude by referencing some resources that Energy Efficiency for All has available.

We have a lot of resources available on our website but I wanted to just quickly highlight these three resources in particular, potential certain energy savings identifies the maximum achievable, potential savings and benefits that can be captured in the multifamily affordable housing sector in eight states, our program design guide which identifies 12 best practices for policymakers and regulators and program administrators when it comes to multifamily affordable housing energy efficiency.

And finally, we recently released a policy brief that highlights opportunities to encourage energy efficiency in affordable housing in state clean power plans.

#### Slide 10: Thank You

Todd Nedwick: And with that, I will just conclude. And I'm happy to answer any questions or directly, you know, talk to anyone who wants to reach out to me to discuss any of my presentation. Thanks.

Victoria Ludwig: Thanks, Todd. That was a great overview and providing context and also including some very enlightening statistics that I think are setting the stage in a great way for our – the other speakers today.

## Introduction Part 2

### U.S. Department of Housing and Urban Development, Office of Economic Resilience

#### Slide 1: Introduction

Victoria Ludwig: So, Crystal, tell us a little bit about what HUD is doing in this area.

Crystal Bergemann: Great. And thanks so much for inviting me to this presentation. And Todd, thanks so much for sharing your introduction with me. I'm really happy to have the chance to speak to all you today and talk a little bit about HUD's role in energy efficiency for multifamily building.

#### Slide 2: Energy Efficiency and Green Building

Crystal Bergemann: So my name is Crystal Bergemann. I work in the Office of Economic Resilience at HUD. And what we do is we help coordinate HUD's Energy Efficiency and Green Building programs across the agency. We also staff a newly created climate council which works on all things energy resilience and climate related for HUD's portfolio.

#### Slide 3: What we Know: The HUD-Assisted Housing Stock in Unit Count

Crystal Bergemann: So to give you a little bit of an idea of what that means, when people think of HUD, a lot of times they think of public housing. We certainly drove a lot of assisted housing through public housing that's about a million units. But we also, as Todd alluded to, assist private landlords through our multifamily rental assistance program which is about a million and a half units there. And then our housing choice vouchers assist about two million units, two million families.

#### Slide 4: What we Know: The HUD-Assisted Housing Stock in Utility Costs

Crystal Bergemann: So, in total, that's four and a half million families that received rental assistance through our – through these three core programs at HUD. And then to further give you an idea of our involvement, the utility cost for those core programs are about \$7 billion a year ranging from \$1,200 to \$2,000 a year per unit on average. And of that 7 billion, HUD pays for 6-1/2 billion of that either directly or indirectly. So we have a strong incentives to lower utility cost across HUD program and especially in these assisted multifamily units.

## Slides 5 and 6: Energy Efficiency and HUD Commitment to Energy Efficiency

Crystal Bergemann: So HUD has a long history of energy efficiency and focus on these types of programs. The energy performance contracting program has been around in the public housing since the '90s. But just in recent years, since 2010, this has been an agency priority goal through our HUD steps process. The agency priority goal number four is to build strong resilient and inclusive communities and the sub goal of that is specifically around embedding energy efficiency and healthy housing programs across HUD.

And through that program, we have over half a million units since 2010 and are growing strong on that. And then in 2013, the White House Climate Action Plan was released and that implicates HUD in a variety of ways that through our – that our buildings challenge that we'll talk about in a moment, renewable energy efforts, benchmarking efforts are included in that action plan. And so we are taking that plan seriously and working on those efforts.

And then relatedly, the secretary formed HUD's climate council on resilience to energy just a couple of months ago. The purpose of that climate council is to focus on both resilience and climate adaptation but also mitigation through energy efficiency and green building and to maintain a high agency focus on that with a secretary overview. So, between these three high level foundations for energy efficiency, it should be clear that this is definitely a priority of this administration and this agency.

So I'm going to talk just a little bit about one program that we're working on since I just have a couple of minutes and I want to make sure we get to the other speakers. So I'll talk about one program that we're working on and one that we're working towards. So the first is the Better Buildings Challenge.

### Slide 7: Better Buildings Challenge

Crystal Bergemann: So many of you may be familiar with the Better Buildings Challenge generally. In the President's Climate Action Plan that I mentioned and throughout 2014 this initiative was expanded to multifamily buildings from these existing states. So multifamily, that includes market rate multifamily but also HUD assisted multifamily and essentially any multifamily building in the country.

And it's a voluntary initiative. Currently we have about 90 partners who have joined. And when partners joined, they commit their entire portfolio to a 20 percent reduction of energy



consumption over 10 years. We have about 400,000 units that are part of that and should have. And participants in that initiative received a variety of benefits but those who have HUD assistance can receive things like technical assistance and a variety of policy flexibilities and waivers from HUD.

We look at this cohort as leaders in the industry. The National Housing Trust is one of our Better Buildings Challenge partners and you heard from them earlier. So we look to this group when we're looking to highlight those who are doing exciting, interesting things in energy efficiency.

We also look to this group as the way to sometimes test out incentives or policy flexibilities to see if it may make sense to roll them out to the larger portfolio of HUD-assisted properties. Joining this group also gives folks access to a quarter of other leaders and ability to share best practices across other multifamily building leaders and experts.

#### Slide 8: Utilities, Benchmarking, and Data Access

Crystal Bergemann: And so, I'll just touch on one additional piece is that as I said, we spend about \$6-1/2 billion on our utility allowances which is about 13 to 14 percent of our budget. That said, we don't actually have a very clear idea of how that money is spent and where exactly it is spent.

So, we are working with EPA and their portfolio manager team, Department of Energy and other public agencies to work on a comprehensive plan for benchmarking our multifamily assisted and public housing properties over the next several years.

So we know that there are a lot of obstacles for building owners out there in getting building data and working with utility companies and entering that data but we are committed as an agency to benchmarking our properties over the next several years. So we certainly look forward to working with many of you and to talking more about that effort as we move forward.

#### Slide 9: Resources

Crystal Bergemann: So, again, I don't want to take more time from the presenters who are coming up. So I just want to leave folks with a set of websites and resources. The first website, [hud.gov/resilience](http://hud.gov/resilience) is the Office of Economic Resilience website. We have a variety of resources

on there. You can find out more about HUD's programs generally on energy efficiency, resilience, green building.

The next one is the Better Buildings Challenge portal. You can also just Google Better Buildings Challenge Multifamily, you'll find plenty of information from the Department of Energy and HUD on here. This includes some information on what incentives and flexibilities I've mentioned and what those are.

The next piece is our renewable energy portal and that includes a variety of resources and information on technical assistance for those looking to incorporate renewable energy into their HUD-assisted properties. And you can – you can see the rest there so I will leave you with that.

Slide 10: Contact Us

Crystal Bergemann: And please feel free to contact us and any of these e-mail addresses. My personal e-mail – or my work e-mail address is at the beginning of this slide which you will all receive at the end of this presentation. And I look forward to answering any questions at the end of the – end of the webinar. Thank you.

Victoria Ludwig: Thank you, Crystal. That was a great overview presentation of what HUD is doing. It's clear that you have a large role to play in overcoming some of these obstacles and promoting best practices in this area that we're going to talk about for today.

Just a quick reminder, please enter any questions you have for any of the speakers at anytime during the webcast today. But please indicate which speaker your question is directed to, that will help us a lot. We'll get to those at the very end.

## Poll Question #1

Victoria Ludwig: Before we go on to the next group of speakers, we want to do a little audience participation here and take a poll question. So please enter your choice to this question which is: Which of the following funding sources are the most challenging to leverage for multifamily housing energy efficiency?

Is it low income housing tax credits, HUD funding, DOE weatherization funding, utility funds, or state housing agency funds? You can select more than one. So please make your choices now and then we'll look at the results.

Wendy Jaglom: And we're going to give everyone just a few more seconds to send in your responses.

Victoria Ludwig: OK. Thanks for your participation. It looks like the majority of you find it challenging to leverage utility funds at 41 percent. The next highest is low income housing tax credits at 32 percent. And then HUD funding is third. After that, state housing agency funds and weatherization funds.

We hope that some of the speakers today can help you answer – or can help you understand some ways that you can better leverage the funding from some of these sources.

## Creating a One-Stop Shop for Building Owners

### Serving Multifamily Building Owners: A Full Service Comprehensive Approach for Improving Existing Buildings

#### Slide 1: Introduction

Victoria Ludwig: Thanks for your participation. We'll do another one after the two speakers from Elevate Energy who I'm going to introduce now. They're also going to be speaking in tandem. We have Angelina Benson-Glanz, who is the manager of new market initiatives at Elevate Energy where she is responsible for leading their efforts to expand affordable multifamily energy efficiency program in Indiana, Michigan, Missouri, and Western Pennsylvania.

She develops tools, templates and processes to provide technical assistance to partner organizations who are starting up such programs.

After her will speak Peter Ludwig who is the director of building retrofits at Elevate Energy. He directs multiple energy retrofit programs across the single family, multifamily and commercial building sectors. Peter has focused on developing and building Elevate successful programs for retrofitting existing multifamily rental housing. They have been successful in retrofitting nearly 25,000 units since 2008. And on average, these projects have saved 30 percent on energy cost.

So, Angelina and Peter, we're curious to hear how you've been so successful. Thank you.

Peter Ludwig: Yes. And thank you, we're really excited to participate. So, I just want to thank EPA and our co-panelists. And we're looking forward to just briefly share some of the things that we've, you know, are working on and have learned and looking forward to a great discussion.

#### Slide 2: Agenda

Peter Ludwig: And our – OK, so we have a very quick agenda. We're just going to talk very briefly about who Elevate Energy is and just building off of Todd's comments about why we're interested in multifamily housing particularly low income. We'll talk a little bit about our service model. And then Angelina will take it away and talk a little bit about how we're – how we're working nationally and some of the impacts and review a couple of case studies. And then hopefully we'll have, leave some extra time.

### Slide 3: Our Mission

Peter Ludwig: So, at a real high level, Elevate is – we’re emission-based nonprofit organization. We’re about 100 people. And we’re a little bit over 10 years old. And we really do have a triple bottom line and we work in a lot of different areas including water efficiency, we work on smart grid projects, we do research and policy.

And then a lot of what we’re going to talk about today is just that we actually get into buildings and work with owners and customers, building owners, contractors and help them make improvements to the buildings.

### Slide 4: The Elevate Energy Team

Peter Ludwig: So, that’s who we are at a high level. And this gives you an idea of the type of staff we have. We won’t – we won’t dwell on this but we often bring a lot of these different skill sets and experiences into our – into our projects.

### Slide 5: Affordable Multifamily Market

Peter Ludwig: So, just to talk a little bit about why we’re – why we see this as a huge opportunity, I know the slides will be shared so we don’t – we’re not going to go over all the detail. But our analysis of the market showing that there’s 10.5 million units, this would – this would include public housing, HUD subsidized stock, LIHTC(?) project, and also naturally occurring affordable housing. So we think it’s a huge market opportunity. We started working in multifamily roughly in 2007, 2008, really focused more in Chicago and since then we sort of branched out to serve all of Illinois.

And then as Angelina mentioned, we do have – we’re active in about 11 states. And we have some national partnerships working with Todd and his – and his group and EEFA and a couple of other partners but we’ll talk a little bit about that later.

### Slide 6: Our Approach to Multifamily Housing

Peter Ludwig: And now we’ll sort of jump in just talking about our approach. We really think it’s important – we sort of – we sort of see that building owners need a flexible service that’s

available to them at really anytime whether it's a point of acquisition, whether it's just an existing building that they want to make more efficient and just to rehab.

#### Slide 7: Our Multifamily Energy Efficiency Program

Peter Ludwig: You know, if they're just looking to do some capital improvement, we're available to the owner at all those points. And the way our service is designed, we feel that building owners are pretty stretched for time. They don't have a lot of – they don't have any extra time and they really need a high – a high touch level of service.

So, the way we've designed it is that there's an energy analyst who, as you can see on this chart, kind of takes the building owner from the beginning of the process kind of looking at their energy, water consumption across the portfolio all the way – all the way through the analysis and construction process to when you're actually examining the way the building is working.

So, by working I mean, you know, how it's performing by the energy savings being realized in a way that we project it. So we feel like it's important to have a single point of contact you can drive a process and help the customer and bring contractors and internal construction resources and other technical resources to the project as needed.

#### Slide 8: Addressing Barriers

Peter Ludwig: And so, we find ourselves working with a lot of building owners. We've done about 25,000 units. And we – what we really have taken away from it is that in order to get the retrofits done, you really need to solve problems for your customers.

And in order to solve the problems, you need to kind of understand what the problems are and you need to have a good feeling of what other needs and limitations, you know, what are their knowledge of energy efficiency, what's their knowledge correct construction techniques, financing, do they know what's out there.

And we think that there is a lot of skepticism and a lot of negativity among some owners so we think that's really important that we have what we think through kind of what some of the barriers are. And in some ways our program is very much designed on addressing the barriers on the left hand side.

And I won't read through them all but it's essentially mimics the previous slide just in a less graphic format and discussing sort of why we – why these elements of problems exist and what barrier they're designed to address.

And in the end, our goal is to help building owners access service is to help them figure out, you know, what they can do to their building, how they can do it, who can do it, and how they can pay for it and ensure that a quality installation gets completed. And we really feel like if we can create a positive experience for early adaptors, then they will become program advocates and spread the word.

So, we're going to go through a couple of just discussion about things that we think are really valuable points in the process for us for the building owners.

#### Slide 9: Best Practice-Use Assessment Time Well

Peter Ludwig: And the first is an assessment and, you know, in the course of any project, we might be at a building 3, 5, 10 times depending on how complex it is and how many different subcontractors are working on it. But we really look at the initial assessment of the building as kind of selecting two levels of information.

One is just, you know, interviewing people who run the building, talking to the building owner, finding out what their plans are, doing some diagnostic testing, collecting information about the building and systems, evaluating their ONM practices, identifying health and safety issues, all those things that are familiar probably to everybody on the webinar.

And then it's also an opportunity for us to sort of communicate who we are and what we do, you know, that we're an energy analyst, we're not city code inspector. Why – you know, what value we think we're bringing gathering really solid, actionable information that we can take back and workup our analysis with.

Perhaps help them with a non-energy related issue like a comfort issue or, you know, if there's a health and safety issue that we think that we can help them solve.

And really using the assessment at the point to build trust and confidence with the customer explaining kind of what we're looking for, reiterating our experience and success, and then really

using that as a springboard to the next part of the process which is to try to get them to do the retrofit.

#### Slide 10: Best Practice: Provide Clear, Concise Deliverables

Peter Ludwig: And I won't go on this either but we try to present a very simple report. And we can share this to the group but really just states here. Here's a list of things that we – that we've analyzed, we've compared to your actual buildings energy and water consumption and here is what we think the paybacks will be.

So we're able to pull it from our database of, you know, thousands of proposals and completed projects and savings, analysis and do our unmodeling and figure out what we think is the most accurate and conservative projection on how they will – how the projects will perform.

And we think that it's really important to give the building owners something very clear and very concise that they're not having to read, you know, a very long engineering report because they probably won't read it.

#### Slide 11: Best Practice: Speak "Building Owner"

Peter Ludwig: We also think it's important just to communicate in building owners' language so kind of talking to them about some of the benefits they might see. And the list of those on the right that is probably not new to most people but we think it's really important to sort of listen to their needs to discuss the benefits in a way that it would really resonate them. Because we think that the goal is to sort of to create a relationship and sort of provide really high level of customer service.

And that in order to do that, you know, sometimes you need to say more about what benefits to them rather than sort of talk about your program or the logistics of your internal operations, for example. So those are some of the – another thing that we have – we think is very important.

#### Slide 12: Best Practice: Coaxing the Deal

Peter Ludwig: And we also are working with a lot of owners who are unsure and they're on the fence. And we sometimes we call it close the deal but in reality it's sometimes more sort of coaxing the deal. And we wanted to sort of be proactive but we also want to engage the building owner in a conversation that sort of isn't overwhelming or, you know, maybe it's taking a small



steps in place a chiller issue or a boiler issue. You know, maybe the first step is to get a couple of quotes and then start to build the trust with them so that – you know, so that they feel like they can move forward in perhaps an incremental way if they're not entirely sure.

And also that's often we've used existing relationship with other owners who might be able to put a good word in for us with the customers because building owners trust building owners and it's a very word of mouth market. And so we think it really – you have to work hard to build trust and credibility. And once you get it, you have to work hard to continue to have it.

#### Slide 13: Best Practice: High Rigor QA/QC

Peter Ludwig: And then perhaps one of the – one of the most important things is just – maybe it seems obvious but it's just really, really high quality construction. No matter how good a proposal you write, how good a bid you write or even how good your contractor is, there can always be something that goes wrong. And there's no replacement for, you know, having someone on site to really make sure it goes well.

And we just had a project last week with a contractor who we trust and worked through a lot of projects with but they hired a new crew and the new crew didn't really know how to handle a health and safety issue that came up. And so it was really important that we are there to help them negotiate that issue.

And so we feel like this back and forth working with the contractors helping them develop and making sure the owner is getting that really high quality installation that is safe and that performs well from a comfort and energy efficiency standpoint.

#### Slide 14: Best Practice: Measure Performance

Peter Ludwig: And one more best practice that we want to talk about – or that's two more but it is really looking at how the building has performed. So we do projections in our reports and we also look at one and two years down the road, we look at how the building is actually doing.

And then we do actually reach out to building owners if the – if it's not performing well. Because we thought it would save, you know, 40 percent and they're only saving 20 percent, then we'll look into that and we'll help them figure out if there's, you know, tweaks we need to make to control system or, you know, whatever the issue is.

And that is a great system for us to really learn and get better at what we do. And we're actually more and more looking at monitoring systems in real time remotely which is really exciting and gives us a whole lot more data in a much quicker turnaround time.

#### Slide 15: Best Practice: Ask Your Customers, Reflect on What They Tell You

Peter Ludwig: And then I'd say lastly, just really making sure that we actually do listen do our building owners and sort of reflect on what they tell us.

And these are some of the things that, you know, building owners have told us that we sort of thought were probably true but when we started to – when we – when we interviewed them a lot of times, at the close of a project, this is really some of the things that they report back to us about what's really important.

And so you can see a lot of these are things that are indirectly related to the building's financial performance, occupancy, net operating income but they're not immediately about energy savings but it sort of goes back to the issue of speaking their language.

So this gives us a lot of – a lot of information. It gives us the chance if there is some existing issue that we didn't wrap up with them or a complaint about a contractor, we can kind of – we can go back and address those so that we can ensure that these customers become advocates for us and for energy efficiency in general.

#### Slide 16: Owner Insights

Peter Ludwig: And then there's just a couple of quick insights and then we're going to let Angelina jump in. But here is a build – this is – this is a story of a building owner who really did actually use the energy – the saving, the cash flow from the energy project to do a big project that otherwise he probably wouldn't have had the capital to do. So, this is a really kind of, I think, developing and kind of rich story about the benefits of energy efficiency kind of really improving a housing stock in general.

#### Slide 17: Owner Insights

Peter Ludwig: And then we have one more which was just people often talk about the split incentive. And we think that, you know, it's always an issue but also, I think, there is in our experience we do have the core folks who really are trying to understand the cost of having an apartment that are too expensive to heat especially in low to moderate income markets, the cost of maintenance to respond to those calls.

So we feel like this is just a part of listening to building owners, listening to what they're telling us, really asking in-depth questions so that we can continue to make the program better and also to continue to develop the services that we're offering.

And now I'm going to kick it over to Angelina who's going to talk more about sort of impact and case studies for a few minutes.

Slides 18 and 19: Impact, Case Studies and Where we are working...

Angelina Benson-Glanz: Thanks, Peter. So as Peter mentioned, we began our multifamily program in Chicago in 2008. And since then we've scaled it up to serve the entire state of Illinois as well as three years ago we began partnering with other mission-based organizations around the country to replicate our model and adapt it to their local market.

We're now working in 11 states, as Peter mentioned, and in close collaboration with our national partners, Now Ecology, and the EEFA team of NRDC, NHT and the Energy Foundation. As well as we're working with a number of local partners which includes lenders, implementers, community development organizations and others.

One thing that we found in expanding and adapting our program models to all these new markets is that it is absolutely critical to engage the local key stakeholders early and often and really payload the service offering to then the needs of the local owners. To Peter's point around making sure that we're serving the owners and we're also providing messaging that resonates with them.

Slide 20: Impacts

Angelina Benson-Glanz: Since 2008, as Peter mentioned, we have retrofit almost 25,000 units in the state of Illinois, saving 16 million kilowatt hours and 6 million firms of natural gas. Our conversion rate has been about 42 percent which we're really thrilled about.

We work really hard and as Peter has said a lot, to make sure that our owners have a good experience throughout the program and we really strive to provide them all the support they need to convert from an energy assessment all the way through the end of the retrofit process.

And typically our owners are seeing about 25 to 30 percent savings which is great. And in many cases, we work very closely with our lending partner community investment corporate and has leveraged \$14 million in their capital to help our owners make this retrofit. So, it's been really great.

And though we're just beginning in our expanded additional states, we have retrofit over 1,500 units as well as benchmarked 11,000 units. So, we're really starting to see the impact spread nationally and it's been absolutely wonderful.

#### Slide 21: Case Studies

Angelina Benson-Glanz: So now to dive into these case studies today, the first here is a building located here in Chicago. It's 55 units, 7-story building. And the owner, Sandeep Sood, actually purchased this building and came to us through community investment corporate, our lending partner. And he was actually able to utilize their 3 percent interest rate loan.

At that time, the utility bills were \$60,000 a year. And so we went in, we conducted an energy assessment and actually walked them through the entire retrofit process, making sure to find good contractors and inspect all the work. And the retrofit included a new boiler, domestic hot water system, pipe insulation, and a few other measures.

The savings were really significant and he was thrilled by it as you can see in this quote, his bill has decreased to about \$18,000 a year. And in 2014, he became one of the first ENERGY STAR certified multifamily buildings which was a really wonderful moment for all of us.

#### Slides 22 and 23: Case Study: 4336-44 S Drexel Blvd, Chicago, IL

Angelina Benson-Glanz: And then our last case study here is a 110-unit, 4-story 1920's steam-heated courtyard building which is a very typical building that we see here in Chicago. And the owners were a small family owned firm. They had just a few buildings in their portfolio.

And we've worked with quite a few of these smaller owners who really have the limited time, limited resources, limited knowledge that Peter spoke about earlier.

And during this assessment, we identified a significant need for roof cavity air sealing and insulation as well as pipe insulation. And we were – actually at that time, we were able to provide an incentive of about \$58,000 which is about half the cost of the retrofit.

And it resulted in tremendous savings for these owners which really, really needed, which we were just really thrilled about. And we continue to engage them about other opportunities within their buildings. But these are kind of the typical owners that we've served which has been great.

Slide 24: Questions?

Angelina Benson-Glanz: So, yes, we just wanted to present a little bit about our program and our impact in some case studies. We would like to thank EPA again for this opportunity to present. And if you have any questions, don't hesitate to submit them during the Q&A session or reach out to us directly. Thank you.

Victoria Ludwig: Thank you, Angelina and Peter, very good presentation. I think it's obvious that you've been successful in going beyond the light touch so congratulations.

And what struck me was that by going beyond the light touch, you have – your building owners have been able to provide some benefits to their tenants even if they're not paying the utility bills such as they don't have to complain as much, they don't feel the need to move out as much.

And so that's really important in this whole discussion of affordable housing as what can – how can the residents themselves benefit.

## Poll Question #2

Victoria Ludwig: So, another audience participation moment here. If you would please select your answers to this – oh, this is a tough one, you only get one answer. What do you see as the biggest barrier to implementing energy efficiency in multifamily housing? It's hard to pick one but do your best. Thank you.

Wendy Jaglom: OK. I'm going to give everyone just a few more seconds.

Victoria Ludwig: Great, thanks for trying. The most popular one is lack of access to capital which isn't surprising, 36 percent. Thirty-one percent selected limited awareness of programs and upgrade options.

And then lack of energy data and lack of time and expertise and lack of ways to track post savings. Hopefully some of the resources in the groups that have spoken today can point you in the direction of how to overcome some of those barriers we hope.

Thanks for participating. Don't forget to submit your questions as we go along and if you can indicate the speaker that your question is directed to.

## Designing Utility Programs to Coordinate Assistance

### Department of Housing and Community Development: Multi-Family Energy Efficiency Housing Affordability

#### Slide 1: Introduction

Victoria Ludwig: Moving on to our next group of case studies, we have two folks from the Maryland Department of Housing and Community Development. We have Bill Ariano, who is the deputy director of the Division of Development Finance within DHCD. He's responsible for both single family lending and the housing and building energy program.

He assisted in the growth of energy efficiency programs at the department including the creation of the housing and building energy program. This program manages single and multifamily weatherization and other energy efficiency programs for low income families as well as working with mortgage lending through the Maryland mortgage programs.

His co-worker, Scott Falvey, joined the department in 2013 as the multifamily energy construction management officer where he was responsible for program development and compliance. He has served as the Multifamily Energy Efficiency Program manager since 2014. To that position, he brings us many years of experience with commercial and residential construction that he obtained by working with his family-owned construction company.

So we look forward to hearing your state's specific perspective on this issue, Scott and Bill. Go ahead.

#### Slide 2: Multi-Family Energy Efficiency and Housing Affordability Programs

William Ariano, Jr.: Victoria, thank you very much for the invitation. We appreciate the opportunity to kind of share what it is that we've done. The Multifamily Energy Efficiency and Housing Affordability Programs, we actually created this difficult name and ended up calling it MEEHA.

And it started back in 2009 as a partnership between the Maryland Department of Housing and Community Development and the Maryland Energy Administration which is our energy administration for the state.

They utilized some SEP funds, the state energy program funds from DOE, as well as RGGI funds to provide the start of this. We then was successful in getting some EECBG funds from DOE in the BeSmart program and we were able subsequently to get funds from what's called Empower Maryland which we'll explain as we go through our presentation.

### Slide 3: Maryland DHCD

William Ariano, Jr.: The DHCD, first of all, is the housing finance agency for the state of Maryland. That is a special federal designation that allows us to sell tax, accept funds to finance low and moderate income rental units as well as tax exempt financing for mortgage lending.

We have over \$1-1/2 billion in our portfolio in Multifamily Loans with over 400 developments, which means that we have a very strong relationship with the developers and property owners, as well as understanding the complexities of tax exempt financing which makes the use of some of the money for energy efficiency a little bit more challenging.

And we also have 30 years of experience with these developers as well as 30 years of experience in the single family weatherization side.

### Slide 4: Creating Owner Incentive

William Ariano, Jr.: One of the things that we're also proud of is that we were rated number one or number two for the really the last decade by Global Green and what's called our Qualified Allocation Plan.

This is, again, is the federal requirement for us to provide what tax credits for the development of housing for low to moderate income families. And through that, we had a little bit of experience and we had some staff on our multifamily side that at least understood what the basic principles were.

One of the requirements that we put in to our QAP is that in order to get additional points for energy efficiency, that they have to have an audit firm in place as part of the initial development team. And this ensures that right from the beginning any new construction where we have needs to have an individual that understands what energy efficiency is and has to incorporate it into the building.



Slide 5: MEEHA 1 (2009)

William Ariano, Jr.: As I said, MEEHA was a partnership between us and the Maryland Energy Administration was pretty critical in the beginning because they brought some technical knowledge of what energy efficiency was and how to evaluate it and we were able to bring the other side of the equation which is the understanding of the financing mechanisms as well as the relationship with the builders, which was awfully critical.

Slide 6: MEEHA 1

William Ariano, Jr.: One of the things in the beginning is that we did not require energy audits but literally every unit that we've done was on a project by project basis. And every measure that the architect or the engineer put into their submission was evaluated and verified by MEA. We were looking at that point to measures that we're predicting a positive savings to investment ratio.

In the beginning, it was a one to one but that was changed as time went on. Construction progress and inspections were completed jointly by our construction management staff as well as MEA to make sure that there was the technical compliance as well as the – what the compliance that we required for the financing.

We consciously were designing the program to incorporate the maximum amount of flexibility with the building owners. We felt that right from the beginning a one program fits all was not going to work with building owners.

And I think one of the earlier speakers mentioned that there's a heck of an investment on the part of these owners and their building from the physical building itself. So to go in and to say you've got to do this right down the line, we knew it was going to be something that would be an impediment to getting a large scale involvement.

We also had to provide funds as grants and loans for energy efficiency. We'll talk a little bit about that later on but within the tax exempt financing world, in a lot of cases to provide a grant actually is a negative. For those that have provided the financing in the – to provide the equity to actually develop these buildings.

So we ended up going to a 1 to 1.1 and then later on a 1 to 1.5 and incorporating the DOE requirements for CER of 10 and the CER is the cost effectiveness ratio and I'm not going to get in to how you come up with that. But that was – that certainly was part of the learning process.

Slide 7: MEEHA 1

William Ariano, Jr.: We also were very careful internally because when the funds became available, the first thing that the folks on our multifamily side said was, "Boy, this is really great." Now this is going to fill other gaps that we have and equity for the development of these units.

So we made sure that we were very, very careful about separating what we've fund for energy efficiency from what needed to be done as far as the construction or the rehab. And talking to other housing finance agencies, this is an issue that constantly comes up. And we were successful in that.

We also realized early on that despite their credentials and the experience that a lot of the architects and the engineers had, their original submissions were seriously flawed, very inconsistent and over estimated the potential savings. We did do a project that was also a pilot that was very interesting, what we call a deep energy retrofit. And this was a rehab of actually three units. And one of the units we did this deep energy retrofit.

We found a couple of things with that. The first thing is that even though we have one of the best – you know, I'm not going to name him but one of the best contractors in the state in one of the largest architectural firms in the state, they over sealed the building. They didn't make a consideration for the fact that they had fossil fuel stoves in a building that they had no mechanical ventilation.

And then also in order to get the maximum savings for the deep energy retrofit, they would have had to go a lot further than they were interested, willing, or had the funds to do by doing things like having to tear out walls to put additional insulation in, reconfigure chassis, get in and put wrap around pipes.

So we found that some of our existing zoning and permitting walls also cause some difficulties in reaching our goals. Ultimately incidentally they did have to go back and put in a mechanical

ventilation as well as to open some ventilation to the outside. But this ended up literally a 50 percent reduction in bills year over year.

#### Slide 9: MEEHA 1 – A Look Back

William Ariano, Jr.: MEEHA 1 became then the foundation then for what we have done since then and identified that different projects required different funding, I think that was mentioned earlier on. It helped us to expand beyond our portfolio. We were surprised at how many – what am I doing here? Yeah, I jumped.

We also identified that there was a need for more consistency with the energy analysis. And one of the things we were trying to do was to, again, have a product that the building owners would embrace and that we easily could train and supervise the construction and architectural staffs.

It was also a significant learning curve for the housing staff. And we found that we needed to improve or to get staff that really understood a lot more about energy efficiency versus relying on our MEA.

#### Slide 8: MEEHA I Results

William Ariano, Jr.: This had a significant impact on new construction and retrofit projects. The 48 projects, 5,100 units and the average residential household bills were expected to save over \$500 annually on the utility bills.

#### Slide 10: MEEHA II (2012)

William Ariano, Jr.: Coming out of that, we had the opportunity to apply for funds from the Maryland Public Service Commission here in Maryland that they have something that they call Empower Maryland. Empower Maryland briefly is a utility rate payer funded program that is managed through the Maryland Public Service Commission and is implemented primarily by the utilities with the idea being that they're going to lower energy consumption by 20 percent by 2015.

We came in and said, "Look, we work statewide. We already have a foundation through what we found in MEEHA 1." We have an application intake process. We also have marketing and outreach in place.

But what we'll provide you is consistent reporting throughout the entire state and each one of you into these areas. And then secondly, we already have a working relationship with the large network of property owners.

We also were able to convince them that because of our experience, we will be able to continue to make progress on MEEHA 1 with what we call a Maryland centric process. Properties or construction is different area to area based on, you know, local practices as well as the local climates and those types of things.

And because we had already worked with a number of the contractors and the architects, we were able to be sensitive to some of the issues that they brought up along the way.

#### Slide 11: MEEHA II

William Ariano, Jr.: So we received 12-1/2 million work was generally restricted to individually metered electric heated or air-conditioned tenant-based units. The idea behind this is that the tenants paid the rate payer surcharge so we weren't able to do master metered units and actually we still aren't through this program.

We also were able to get an allowance of up to 15 percent of the project funding could go to do work in the common areas. We were looking forward still a minimum SIR of 1 to 1.5 for the overall project, not on a measure by measure basis but for the overall project.

With a 2012 ICC, that resulted in really a curtailment of what we were able to do in the new construction site because we found that a lot of the projects we then had submitted did not meet our requirements which was a 15 percent increase over code for energy efficiency.

#### Slide 12: MEEHA II Challenges

William Ariano, Jr.: The challenges, tenant signoff for utility consumption. Again, we've heard that is – various people was presented on the program. That has been a challenge and is something that continues to be a challenge. Our work around is we convinced the building owners to get tenant signoffs. We're able to create our baseline by getting about 60 to 70 percent of these signoffs. And then going in to the utilities website to be able to get actual usage.

We also found is that a number of auditors – and this was a warning early on – a number of the auditors per baseline weren't relying on actual usage but they were building their models off of other buildings with similar local conditions.

Again, we continue to have issues with business structures and the complexity even though a building owner might want to have this work done, their investors might balk because they think that they're going to lose basis for their tax credits.

The other thing that we didn't anticipate was going to be more of a challenge is that Empower works on three-year timelines. And it takes, in a lot of cases, up to 18 months.

And some cases, it's actually taken 36 months to complete the underwriting and construction process especially when you're looking at projects that are coming in and looking for financing either through a low income housing tax credits or a 4 percent tax exempt bonds. And, again, being challenged still with DHCD staffing.

#### Slide 13: MEEHA II – Challenges Continued

Scott Falvey: So, it was a great opportunity to learn and grow from the MEEHA 1 program as Bill has been saying. We also learned too that education and communication related – understanding the affordable housing industry by the utility partners, by the Public Service Commission and staff and our office of people at the council and other stakeholders, they really needed to understand the low income portion, you know, the low income housing industry and how their funding can help these programs out.

For DHCD, the Empower program was a new arena. We're used to as a state agency using state and federal funds for doing energy efficiency but now we're getting in to a field for the utility programs that we're not familiar with. So, we started with the utilities doing all the state energy efficiency programs. Now, DHCD is coming in as the odd man out as both a state agency and a new implementer so we kind of have two strikes against us.

And the utilities have had a historical camaraderie with each other but also with the commission staff, the language, the metrics, the evaluation, and performances are all utility centric. Again, it's not geared towards a state agency.

So DHCD is unfamiliar with the industry terminology requirements and it was kind of a learn as we go process. There were very few rules that were written outside of those that were defined at

our application to Public Service Commission but there were a lot of rules – there were a lot of unwritten rules that exist. And that was learn as we go and we still learn as we go.

#### Slide 14: MEEHA II Challenges – Continued

Scott Falvey: We spoke earlier about the 15 percent common areas – 15 percent of funding for the common areas. And the challenge we had is that we're missing a lot of opportunities while in these buildings.

So we decided that, you know, we were trying to go after getting more money for the common areas because as was indicated earlier in the presentation, the common areas are part of the building and it's still opportunity but we need to capture that opportunity. And right now, we're not getting the funding to support that.

We saw lack of consistency. Even the guys that DHCD had was not specific enough. Energy auditors still didn't quite know what it is that we wanted. And reviewing energy audits, we always had questions because they weren't given specific enough direction to give us specific answers that we needed.

We had – we allowed for too many building assimilation tools. So we get – independent spreadsheets, we would get just the run of the gamut of energy auditor – energy audit programs of submitting for funding and there's no consistency between those programs.

Utilities are funded by territorial limitations. You know, there's five participants but only one of those participants do gas. So we couldn't do gas in four other territories. Free ridership was a concern. Stakeholders were concerned that building owners would be getting free improvements that they would have paid for themselves anyways. But the program is designed to help the tenants out and the tenants who are paying for the bills.

#### Slide 15: MEEHA II

Scott Falvey: So we continue to develop those practices. We developed an energy audit guide with assistance from the Newport Partners. We actually started to implement BPI multifamily standard requirements. We created an energy auditor qualification form. We don't contract with auditors but we do qualify them. And there it is intended to identify their credentials and also have them acknowledge that they have read and understand our guidance. And we hired in-house technical staff. And that made a big difference as well.

So, we narrowed the auditing tools down to four. The tools that are actually approved by DOE for the weatherization program for multifamily buildings, to help keep that consistency in mind. One of the big steps that we did that made a big difference for the owners was putting in place a pre-qualification inspection which DHCD does.

And we go out to the properties and just try to identify if there's enough opportunity to qualify for funding. So the owners don't have to spend tens of thousands of dollars on audits, only to have it submitted and realized that there's no funding or that they don't qualify for any funding.

#### Slide 16: MEEHA II – Program in Review

William Ariano, Jr.: So, the bottom line is we're just about at time here, improving communication with all the stakeholders, keeping in mind that their language isn't the same language that we would be used to as a state agency or even within the measures that are normally used in energy efficiency.

Make sure that you get immersed in the various meetings with the public utility commissions, or the PSC, if you're using them. And also make sure that you build relationships with the utilities themselves.

Provide flexibility in dealing with those parties but make sure you get what you need. Don't stray from the mission. If there were something that needs to be done and there's pushback that you continue to make sure that you have – that you make your case because what you don't need is end up in a situation where you've agreed to something that actually minimizes your effectiveness.

Develop a clear guidance, create consistency, deliver a consistency guidance and consistent messages but do not be afraid of having to make changes as time goes on and that you learn what you're doing.

#### Slides 17 and 18: MEEHA II 2012-2014 Results and MEEHA II – Continued 2015

William Ariano, Jr.: We have been approved by the Public Service Commission for another three years, another 15 million. And then they also gave us 5 million out of the commercial side of this for the public areas.

Slide 19: MEEHA II - 2015-2017 Projected Results

William Ariano, Jr.: And we project that we're going to end up doing about another 6,000 units over this period of time.

Slide 20: Customer Investment Fund

William Ariano, Jr.: We have something else called the Customer Investment Fund but we won't get into that at this point. It does allow us to experiment a little bit. It came from the money from the merger between Exelon and Constellation Energy.

Slide 21: For More Information

William Ariano, Jr.: And the – if you really want to know what's going on, the only person that didn't talk today, Danielle England, who's our senior energy management officer is probably far more helpful than the two of us are. So, thank you.

Victoria Ludwig: Thank you, Bill and Scott. I hope others on the call will heed your advice about best practices because I'm sure there are other housing agencies on the call who have experienced some of the same challenges as you. So, congratulations on your success so far.

William Ariano, Jr.: Thank you.

Scott Falvey: Thank you.



## Questions and Answers

Victoria Ludwig: We're going to move into the Q&A session. We don't have a lot of time but we want to get at least one question for Todd, for Crystal, for the Elevate Energy folks combined, and for Maryland combined.

So, I would like to remind everyone that if we didn't get to your question, we will provide written answers to those and post those on our website along with the audio files and the PowerPoints. That should take a couple of weeks.

So I'm going to turn it over back over to Wendy Jaglom to facilitate the Q&A session.

Wendy Jaglom: Great. Thanks, Victoria. So the first question is for Todd and the question is can cities get financing for efficiency for multifamily housing?

Todd Nedwick: Can cities get financing – I'm sorry, the question again.

Wendy Jaglom: Sure, yes. So the question is can cities get financing for efficiency for multifamily housing?

Todd Nedwick: Yes. I mean, I think that there are programs out there that allow cities to apply for funding to help them develop programs. I think even, you know, DOE through some of their funding programs are, you know, geared towards cities.

So, I certainly think there are funding sources out there that can be used. I'm not an expert on what those are but I would suggest maybe focusing on what DOE has to offer.

Wendy Jaglom: Great. Thank you, Todd. The next question is for Crystal. And the question is: does HUD provide energy efficiency assistance to non HUD sponsored buildings and what are they?

Crystal Bergemann: Sure. So, multifamily building owners can join the Better Buildings Challenge regardless of if they received HUD funding and receive many of the benefits of being in the Better Buildings Challenge partnership. That said, specific opportunities of technical assistance and waivers, things like that, are limited to HUD assisted properties.

Wendy Jaglom: OK, great. Thank you. So the next question is for Angelina and Peter from Elevate Energy. The question is what are the best technologies for making an impact in electrical efficiency today, most affordable, stable, accessible, et cetera?

Peter Ludwig: So, I think the question was what are the best technologies for impacting electrical energy efficiency?

Wendy Jaglom: That's right.

Peter Ludwig: OK. Well, I guess, there's a couple of ways of looking at that question.

I mean, I think if you're looking at it from a whole building perspective, if it's a building that they have electric heat and electric cooling, you know, there might be some opportunities to both look at certain retrofit technologies, you know, more efficient heat pumps, better controls, lighting controls, things like that, that would just have a direct impact on consumption.

I think, you can also try to address kind of what the peak demand of the building is in whether you can lower that in order to put the customer in a better financial position with respect to their – with their bills.

So I don't know if there's – that I know of any one particular technology. Usually when we go into a property, we're looking at sort of what the – what the existing conditions are, what are the opportunities to make improvements and then we're sort of trying to filter those through cost, payback, what's practical as our speakers from Maryland mentioned a lot of times certain retrofits aren't practical because it involved a lot of additional construction work that the budget can't support.

So I think that's kind of been our approach.

I'm not sure if I'm answering the question in the way that it was intended. I'd be happy to follow-up kind of offline if that's helpful.

Wendy Jaglom: Great, thank you. So the next question is for Bill and Scott from Maryland. You mentioned that owners weren't as interested in grants, especially if they had done the financing themselves in the past, why?

William Ariano, Jr.: If you get a grant, what that does is literally reduces the amount of tax benefit to the outside investors that have put money into the transaction. So, what we've done is structured them as what's called cash flow loans so it's still technically a loan.

It doesn't negate the benefit of the tax credits that have been sold for these properties but the idea that we're going to get repaid on these things are – it would take an awful lot of income to income-strapped developments for them to actually repay it.

So it's a matter of structuring it. And that's part of the knowledge and the sensitivities that you need to have when you're going in to these things.

Wendy Jaglom: Great, thank you. Victoria, shall we wrap it up?

Victoria Ludwig: Yes. I'm – to the audience, thanks for your questions. I'm sorry we couldn't get to all of them but as you can tell our speakers have a lot of great information to share in their presentations. But, again, these will be available, the answered questions, the PowerPoints and the audio files at the – at our State and Local Climate website on EPA's website in a couple of weeks.

I want to thank Crystal, Todd, Peter, Angelina, Scott, and Bill for speaking and giving such great presentations and working so hard on this issue. EPA hopes that through this webcast series as well as some other products we're working on, highlighting case studies of successful programs for bringing clean energy to low income communities.

We hope that this is increasing the dialogue on this topic and helping to share some success in this hard sector to reach.

So, stay tuned for more information about future webcast as well as these case studies that I mentioned in other products. And thank you again for joining us today. Hope you have a rest of the good – a good rest of the day. Thanks.

Operator: Thank you. This concludes today's conference. You may now disconnect.

**END**