

Operator: The broadcast is now starting. All attendees are in listen only mode.

Leslie Zarker: Hello everyone and welcome to the October edition of the Better Buildings Webinar Series. I'm your moderator Leslie Zarker with ICM supporting the US Department of Energy and the Department of Housing and Urban Development's Better Buildings Initiative.

In this webinar series we profile the best practices the Better Buildings Challenge and Alliance partners and other organizations working to improve energy efficiency in buildings. Next slide please.

Today we'll hear from Multifamily Partners who will present innovative strategies for collecting tenant energy consumption data. In addition HUD will outline ways where working with Multifamily Partners to update the Multifamily sectors data reporting process. Next slide.

Before introducing our agenda I'd like to share a few housekeeping notes. Your phone line is currently on mute however we do encourage your questions and comments at any time during the presentation. Please do go ahead and type your questions or comments into the Q&A box shown on the right-hand side of your screen.

If you experience any technical issues related to the webinar platform please type your issue into the chat box on the right of your screen.

And finally, this session will be archived and posted to the Better Buildings Solution Center for your reference after the webinar. Next slide.

For our agenda today we'll kick off the webinar with two opening polls followed by a Multifamily Sector overview and update from HUD. We'll have a short period after that dedicated to answering your questions and then after that we'll hear from our three featured presenters.

While they're speaking please enter your questions into the Q&A box. We'll try to answer as many of them as we can during the Q&A time at the end of the webinar. Next slide, please.

Today's presenters. Thank you to each of our speakers for taking part in today's webinar. Our Multifamily Sector lead, Josh Geyer,

will give an overview of the sector and an update. Next, Caitlin Rood from Mercy Housing will speak on the barriers and solutions to collecting tenant utility data within the multifamily sector and a variety of resources to help you with the process.

Claire McLeish from WegoWise will address building a successful tenant tracking program in-house. And Ilene Mason from Rethinking Power Management will discuss using a tenant data sampling plan.

So with that let's move onto our first poll. Before we start with our first speaker we'd like to know a little bit more about you. So we've got two polls for this, the first just to understand who we have in the audience and the second will deal with collecting tenant paid energy data.

So let's take a minute to answer the first poll here. Which category best describes your organization? And we realize that some folks on the phone may not fall into any of these categories. We're sorry we couldn't include an "Other" category here because we only have five choices for answers in this platform. So if you are other than any of these here just go ahead and choose not to answer at all and we can take that into account.

And here are our answers. Who's on the phone today? Multifamily housing owner or managers: 17 percent of you. Commercial building owner or manager: just one percent. That makes sense. Federal government agency: about 7 percent. State and local government: 25 percent. And then NGOs, community nonprofit or consultant stakeholders within the multifamily sector: about 50 percent. So that's good to know. That's really handy for us. Thank you.

Now we'll move onto our second poll. Just a minute, we'll be moving onto our second poll. In this poll we're asking what is the primary method you use to collect tenant paid energy data if you are in fact involved in collecting tenant paid energy data perhaps for clients if you're a consultant.

We recognize that at different times you may use all of these methods but today we're asking what is the primary method you use? Do you request whole building aggregated data from the utility? Do you request account level data for 100 percent of tenants from the utility? And by account level data we mean unity by unit tenant data. And we understand that you may not always receive 100 percent of that tenant data back – the unit by unit that

you request – perhaps you only get 80 to 90 percent back but I would still go ahead and choose option B if you're requesting tenant data for the whole property. Do you request sample tenant data from the utility?

All right let's see. You request whole building aggregated data from the utility: 30 percent. That's heartening. That's good to know. Request account level data: 13 percent. Request sample data? A subset of your tenants to represent the whole tenant mix: 5 percent. From tenants directly by collecting bill copies or other forms? That's 10 percent. Or you have not been involved. We understand. A lot of folks not doing this directly. That's fine. Thank you so much. Let's move on from that.

Let's move onto our first speaker. Our first speaker is Josh Geyer from the Department of Housing and Urban Development. Josh leads HUD's – serves – sorry – in HUD's Office of Environment and Energy and is the multifamily sector lead for the Better Buildings Challenge.

At HUD he's worked in depth on the Multifamily Pace pilot in California and the Multifamily Energy and Water Conservation Pay for Success pilot.

Josh will be presenting today on the Better Buildings Challenge's new utility data reporting process for the sector. So Josh, thank you so much and take it away.

Josh Geyer: Great. Thank you Leslie. Can you hear me?

Leslie Zarker: Yep, we can hear you great.

Josh Geyer: Okay, great. And also thank you to the other panelists and everyone who is logged on to the webinar. Next slide.

So just brief overview of the Better Buildings Challenge. Public and private organizations across building sectors including multifamily but also commercial, industrial, institutional, educational commit to energy efficiency improvements across their building portfolios. They set an aggressive goal of 20 percent energy savings over 10 years portfolio wide and are also willing to share their successful strategies with the marketplace.

We have saved more than \$80 billion so far for US organizations since the initiative started in 2011. It creates jobs that cannot be outsourced and improves energy security and obviously protects

the environment to some extent. And we provide national recognition for partner sustainable leadership.

There are more than 360 partners who have joined the Better Buildings Challenge and they have collectively reported 470 trillion BTUs in energy savings and \$3.8 billion in cost savings. Okay, next slide please.

So this is a map that shows where 95 of the multifamily sector partners are located – clearly all across the country – and also a number of them have property across multiple states and regions so we really do cover a great deal of the country including 8 of the top 10 or the 10 biggest housing authorities. We are everywhere. We're doing a lot of great work. Next slide please.

And hopefully a lot of folks you recognize and some you don't. Next slide.

So the commitment as I said is a public commitment to reduce energy consumption by at least 20 percent over 10 years, also to publish two case studies and to report results annually by sharing energy performance data and participate in check-ins. That data is then used to populate each partner's page on the solution center so that there is transparency for the market and for the public of what our partners are actually achieving.

And kind of to help make that happen and to help partners make their commitment real we provide technical assistance, utility benchmarking and energy savings planning. We provide account management – specifically ICF does. There are lots of opportunities for peer-to-peer learning exchanged especially at the Better Building Summit but also in webinars like this.

We provide national recognition for your many successes so that we can lift you up and you can get the recognition that you deserve for moving the market forward on energy conservation. And there's also some program incentives that can be provided by HUD particularly – well, we can go into that if people are interested.

As a quick plug if you're interested in learning more you can go to the URL on the bottom there and get more information. Next slide.

So I want to talk about whole building data. So whole building data is energy consumption data representing all utility accounts – either owner or tenant paid – associated with the building. It is the gold standard. It's the way that we can be the most effective at

determining how much we're saving across portfolios and making the most strategic decisions about resource allocation in order to bring the most savings out of available resources.

Currently in the Better Buildings Challenge whole building data is required from all partners to track energy savings across their portfolios. Next slide please.

So I wanted to give kind of the two basic scenarios. So scenario one is either master metered or some scenario in which the property owner controls and pays for all of the energy – we're just looking at electricity here for the sake of simplicity – so scenario one is on the left where it's quite easy to get whole building data in theory because you the property owner are receiving the data yourself.

And then the other scenario which is both owner and tenant accounts in a given property and so there is a breakdown between some owner-paid accounts but also some tenant-paid accounts and those are obviously more challenging to recover data from. Next slide.

So obviously that means that the challenges for getting and reporting data are different depending on whether a given property is master metered or has tenant accounts and as a result – or it follows the challenges that are going to be – that are faced by partners really depend on how much of their portfolios are master metered versus having tenant accounts.

So again we expect that whether a building is master metered or has tenant meters property owners will receive utility bills directly for any accounts that they're responsible for; whereas for properties that do have tenant accounts property owners need to acquire data for tenant-paid accounts in one of the following ways. So either they're receiving aggregated whole property tenant data from the utility which is as Leslie said the fact that a number of you are able to do this is heartening because this is the easiest kind of simplest and most comprehensive way.

If that is not an option which is not the case for many places you can collect utility data for all tenant-paid accounts or you can follow the sampling protocol to do this via sampling. Next slide.

So we have heard a lot about partner's frustrations with the many barriers to collecting tenant data particularly in this sector. And we've worked on this for a number of years and we know that there

are both unique and challenging barriers that multifamily partners face.

Working with our multifamily partners we are establishing – we're working to establish a new approach for assessing partners for portfolio wide energy performance.

Whole building data remains the goal in the gold standard but we are establishing options for buildings – or I would say better options for building that are unable to get all the data. Next slide please.

So this chart kind of breaks down the current approach versus the revised approach that we're working on. I will say right now that if you are interested in learning more about this please do expect more information to come from us in the next week or so as we finalize the details of this new approach.

So currently the annual commitment is for partners to report data for buildings where whole building data is available and for buildings where you don't have whole building data we just don't look at them.

The basis for the energy savings calculation which is both kind of annually and for the goal achiever status is just properties with whole building data.

So with this revised approach what we're looking for is whole building data for a minimum of 30 percent of your committed square feet but for the remainder we are now looking to accept owner-paid data – meaning if you – well, I'll go through the scenario on this slide – that means that the basis for the energy savings calculation is now all of your properties and not just the properties that have whole building data available and we feel that this is going to allow us to help to support you in getting a more comprehensive look at your portfolio and ultimately being more affective at obtaining your goals under the program. Next slide.

So what does this look like in terms of the commitment going forward? So, again, we're looking for a minimum of 30 percent committed square feet but hopefully more and we will work with you to get that proportion as high as possible. That would include all master metered property, all properties with access to utility provided aggregated whole building data which as I said is our preference and I think it's easiest and best for everyone if it's available.

And then any properties with sample tenant data or I guess comprehensive tenant energy data is available.

So kind of an example scenario here would be let's say for 40 percent of your portfolio square footage is covered by a utility that provides aggregated whole building data and another 10 percent of your portfolio is master metered then you would need to provide whole building data for 50 percent of your portfolio.

So in other words we want you to be providing us whole building data for at least the percentage of your portfolio where you can get whole building data fairly readily.

For a note regarding sample data if you've been sampling your tenant's data successfully and would like to continue to do so that is fine. We encourage sampling but don't require it but we see sampling as one option to help you to reach the 30 percent whole building data threshold. Next slide.

The benefits of the new approach which I kind of alluded to earlier it includes all properties and program savings calculations and we feel that this is bridging a major gap that was there when we were only interested in looking at whole building data. This really allows us and you to get a more comprehensive look at what's going on in your portfolio.

Another benefit is – well, that's pretty much the same thing – and again, a lot of the more comprehensive approach to track progress towards BBC portfolio wide goal. Next slide.

So as I said details on the new data collection approach are coming in the next week so if you're looking for more detail please sit tight and you will have it soon. Your account manager will reach out this fall to discuss the new approach one on one. And of course as always you can contact your account manager with questions at any time.

So that's it for my part of the presentation but I'm looking forward to hearing from other folks and I'm happy to take questions at this time.

Leslie Zarker:

Great Josh, thank you so much for that presentation. As you said we do have some time now for your questions specific to this new data reporting process. I'm sure multifamily sector partners will be most interested but we welcome any of your questions if you're curious about the program and thinking about becoming a

multifamily sector partner within the BBC we'd love to hear your questions.

I want to remind our audience to send your questions through the Q&A box on the right-hand side of your screen. We'll try and get to them as we can.

All right. So the first question, "To fully understand the consumption in a building why is whole metered building the best way? While it is the easiest is it the most informative?" And this question says, "I ask because the information is consolidated and therefore the individual unit by unit segmentation is not known."

Josh Geyer:

Yeah, so I would say from a purely – pure like data perspective like if we had the more granular the better, right? But in terms of the gold standard for what we need for this program and what our partners need for this program the whole building – meaning being able to have visibility into all of the consumption that's happening in a given building is what we're aiming towards.

I think if you can get more granular data that's always going to be better but we want to focus on whole building as the standard.

Also before I wrap that question up I want to – we did get a question "What about water use?" Partners can adopt a 20 percent water saving goal alongside their energy savings goals and if they have done that then kind of the same standard applies. In many buildings the property owner just covers all water so that would be a master metered building for water, but if not, yeah, we would be looking for as much whole building as possible on the water side.

Leslie Zarker:

Great. Thanks Josh. I also want to let folks know that we have our multifamily sector data lead, David Ruggiero, on the phone with us today as well to answer questions along with Josh. And I see a second question here kind of related to the first saying, "Isn't sub-metering the gold standard? This way you can know the distribution of the use of energy and can better detect anomalies and also can direct individual's tenant's usage for better buy-in overall."

Either Josh or David would you like to address that?

Josh Geyer:

I'll take a pass at it. So I would say whole building data is the gold standard and then if you can get more granular than that that's maybe like the platinum standard.

Leslie Zarker: Okay. And just as a reminder we're looking for a whole portfolio trends and we're looking for progress towards that 20 percent energy saving goal for the BBC and so for that reason we're really looking at the whole portfolio savings rather than digging deep into the granularity of a particular building or even a particular wing or unit of the building. So I think different purposes of looking at different data depends – the gold standard depends on what you're looking for.

Let's see. Another question here.

Josh Geyer: I'll take this next one Leslie. So the question is "Does the 30 percent of whole building data plus owner-paid receipts include baseline years? Including current reporting year?"

So, yes. So any building that you're reporting on needs to have baseline data in addition to current year data so that we can determine what the delta is – what your savings has been.

Leslie Zarker: Yeah.

David Ruggiero: That's not always the case. It's always a good idea to have both baseline and current year to measure improvement on a building by building basis. That is correct to measure it on a portfolio basis. The more data you provide both in the baseline and current year the better and more accurate our assessment will be. So not 100 percent required by 100 desired.

Leslie Zarker: We have a question here about benchmarking ordinances, benchmarking policies within municipalities. The question is, "How do you interface with cities that have such benchmarking policies?"

Josh Geyer: Since I know that Caitlin is going to be talking about this let's defer that to her.

Leslie Zarker: Sure. Sounds good. And "How do you get access to whole property data for tenant paid utilities?" Well, there's a number of different ways that we've talked about today. Would either of you like to address that one?

Josh Geyer: I think Caitlin and our other presenters are going to get into this in much more detail, so I think we should let them talk about that.

Leslie Zarker: Sure. We have another question. "How will the new method impact benchmark years with regard to currently documented progress.

Josh Geyer: David should take this one.

David Ruggiero: How will it effect? We will be using a weighted average between your existing whole building properties that have been reported for years and then the new information that we'll be scrubbing that you've been providing – the owner-paid receipts.

So we've done some number crunching over the last few months, we don't see a huge shift – fundamental shift – I can't say it's going to change 10 or 15 percent, it really depends on the partners, but a minimal shift is what we've seen. If you're reporting 10 percent savings last year, you know, we've seen that go down to 9.5. We've seen it go up to 11 – just sort of anecdotal. So it really does depend on the amount of data you provide and how accurate it is and whether or not you're willing to allow us to use it.

So when we've been scrubbing data we assume if it's outside of our comfort zone we don't accept it during the data report. If it's outside of our comfort zone we ask you if it's fine. Sometimes you say yes, sometimes you say no.

So I would say that we can't answer definitively the impact we can only answer definitively that you will get a much better picture of your portfolio's performance than you have had in the past.

Leslie Zarker: Within the context of this program. So I have another question here. "If we have –"

Josh Geyer: Leslie give David the last one.

Leslie Zarker: Okay. "If we have a consultant that collects our utility data from signed tenant releases for utility calculations can that data be used?"

David Ruggiero: State that again please Leslie.

Leslie Zarker: "If we have a consultant that collects our data from signed tenant releases for utility calculations can that data be used?"

David Ruggiero: As whole building data?

Leslie Zarker: It doesn't say.

David Ruggiero: Yeah, if you could extrapolate up the whole building and put it in portfolio manager just check that little estimate box. But yeah, you can use it. It falls into sampling. Absolutely.

Leslie Zarker: And it includes consumption data.

David Ruggiero: Right. Consumption and cost data.

Leslie Zarker: All right, we do have a few more questions but I think we'll hold those until the end. So thank all of you for sending in the questions. We're going to move onto our next speaker now. Our next speaker is Caitlin Rood.

Caitlin is the National Environment Sustainability Manager for Mercy Housing, responsible for environmental aspects of all areas of Mercy Housing's operations including development, operations and maintenance, resident services and offices practices.

Caitlin's an environmental engineer with more than 20 years of sustainability and energy efficiency experience. Caitlin, thanks so much for being with us today.

Caitlin Rood: Thanks so much Leslie. Thank you for having me. Everyone, thanks for joining this webinar. I'm just going to talk for about 10 minutes about a few things that impact utility data collection.

The reason that I'm on here today is that I come from a large affordable housing nonprofit. We have about 320 properties, 22 million square feet nationwide and so we have a large portfolio that we manage our data on and so I have a bit of experience in getting this data for the BBC. Next slide.

We wanted to take a moment to acknowledge and discuss some of the barriers to tenant data collection that Josh alluded to in his representation of this new method for data collection.

Just to kind of dive into the weeds for a moment more about what are those challenges that varies groups are facing and then take a moment to talk about maybe what some solutions to some of these challenges are.

We find that aggregated data is the easiest to get but there are some challenges in getting that aggregated data. Of course there's only a limited number of utilities that offer that aggregated data in the entire country – that being kind of the primary barrier.

But once you have a utility that you're working with that offers it there are a few things to look out for. One is that you want to ask that utility for a meter list so that you can compare it to the meter list that you have of the property in question to make sure that you are both looking at and counting the same meters.

We have found that there were meters we didn't know about or there were meters that the utility didn't know about and that can get your data very off if you're not capturing everything at the property or capturing things that aren't at your property. So that's an important starting point.

It's also good to know that every utility has a different process for making a request to get the utility data or how they provide it, what format it's going to come in and to learning what that process is at your utility. Some utilities require notarized signatures on data requests. Some of them have longer wait times. All of that is important if you're looking for meeting the BBC timeline for reporting in a given year.

Also there are some utilities that just don't have the ability to aggregate or the willingness so getting clear on which utilities offer aggregation and which ones don't and how that matches up with your portfolio is an important part of the process.

If we're looking at individual data that data is more actionable or as some people were pointing out possibly the gold standard because aggregated data doesn't give you the ability to find those outlier tenants who have really high consumption at your property and then addressing those issues.

But there are many, many barriers to getting individual data. Starting with the waivers. You know we have to get those from each tenant, and the tenants may or may not be onboard with that particular data request and it takes time to get it from them.

They're specific to the utility. Some of them will accept a generic data request but not all of them. And some of them require, again, notaries to submit a data request.

There are data privacy concerns that are coming sometimes from the utilities and certainly you want to be cautious of that when you have that data so that you're protecting – sorry – appropriately protecting the privacy of the tenant.

A good time to get those waivers for many affordable housing nonprofits is during annual income verification but many of the utilities have a time limit that they won't accept a waiver that wasn't signed within a certain number of days of the time when the data is requested, so that would be an important fact with regard to when you collect it and then when you submit that data request to the utility.

It's important to be specific about a date range that you want for this utility tenant data request so that you get the range you're looking for – in this instance making sure that you have for example all of the 2019 data if you're reporting for your calendar year 2019.

Sometimes they'll only go back, for example, if you're making your data requested in March they'll go back for a year and then you might miss the beginning of the previous year.

The residents – it depends on the population that you're working with but sometimes they're skeptical of signing the waivers and releases so taking some time to get them comfortable with that is an important step.

And certainly I've heard of instances where there was a revolt within a property and nobody was willing to sign and that affects your ability to even get to the sampling level.

There definitely is a notable amount of level of effort associated with understanding the utility process, getting the right waivers, requesting the data from the tenants, reminding people to fill it out, requesting the data from the utility, managing the data.

If you can imagine if they're providing it to you say as a hardcopy and you have 150 unit property with electricity and gas and 12 months of data and you get 12 data points for every unit and then you have to hand enter all of that information if you have a hardcopy and then you have many, many, many properties it can become quite a burden to make sure that all of that data gets entered somewhere and managed.

I just mentioned electronic versus hardcopy. We certainly have received 4-inch thick worth of data on our tenants in the mail, so kind of figuring out how you're going to manage the data once you get it.

Sometimes they charge for the data. That's another factor that can come up. And then looking to make sure if you got cost data or consumption data or both. If you don't have consumption data it's not going to work for you for the BBC and if you don't have cost data it's not going to work for you for a utility analysis consumption.

So if you're trying to make this data request and pick two flowers with one hand you want to make sure that you're getting everything you need for both of those requirements.

It says POC – I'm sorry, I didn't write out Point of Contact – finding a point of contact at the utility is not necessarily the easiest thing: they change or you get a different person every time you call or they won't offer you a point of contact – you just call a general number – and having any continuity and consistency can be a challenge.

Whether or not a utility is responsive is another issue. They can sometimes go for months at a time without responding, if they have other priorities or they're working on something in the background, so that can be an issue in terms of getting your data and having it in time for your BBC reporting requirement commitment.

Some utilities limit how frequently you can make data requests of them regarding tenant data. Some of them say you can only ask for it once a year.

And then once you've made it through all of this and you have all of your data and you're ready to do something with it and you start entering it into some kind of system you need to take a moment to look at that data and see if it passes the straight-face test.

Sometimes you request aggregated tenant data and they aggregate the whole building and then you have to subtract out owner-paid bills and that's again where knowing what meters are being counted is important and what use is associated with what meter.

And then once you've done that is it accurate? If you have just your tenant data and you're looking at it is it reasonable data? And certainly with utilities in their first year of offering aggregated data it's very, very common for their first data pulls to not be accurate. When you go back to the utility and point out to them their lack of accuracy in their data – and it will take them time to figure that out because now they have to kind of re-jigger their whole system to

figure out what's going on – so data quality is a very important piece and just getting the data isn't enough and we want to make sure that it's data that's meaningful and representative of our properties. And next slide.

So with all of that we found a few things that make this process a little bit easier. While it's not as actionable as data in terms of BBC requirements getting the aggregated data is the easiest way to get the data from the utilities if the utilities offer it.

We also make it the responsibility at Mercy Housing for our third-party aggregators to manage our tenant data collection requirements. So your groups like WegoWise and Bright Power with their energy report cards and other similar organizations can include that in their fee structure that it's their responsibility to go and gather the aggregated tenant data which reduces the burden on our organization.

Annual data request is the frequency at which we request that data, so it's good for reporting but it's not again very actionable in terms of doing something like that.

We want to of course take a moment, as I mentioned, to benchmark the data once you have it in portfolio manager or better really one of the other platforms that has more specific breakdowns to make sure that the data that you're looking at passes the straight-face test and doesn't drown the errors.

And then of course you can sample to reduce data collection burdens. We were attempting an approach to take meter photos and – I'm not going to go into the details I don't think about all of that but really happy to talk to anybody offline about kind of some of the ins and outs of what it would be like to do data collection using meter photos. You can still sample using a meter photo approach.

And then finally this new solution being offered by DOE and HUD which is the new benchmarking standard. Next slide.

I've taken a moment to represent some of what Josh was talking about earlier in his presentation to visually represent what it would look like if an organization were to have less than or more than 30 percent whole building data.

So in this example this portfolio has 4 percent of their in all owner-paid and 12 percent of their data is available from the utilities in

aggregated form and then 84 percent of their portfolio is owner-billed only and they don't have any tenant data. Next slide.

And so in this scenario for 14 percent of your portfolio you would be required to collect additional data. So you could do that in one of the methods that we've been taking about. You could try to find more aggregated data. Sometimes aggregated data is available at utilities that you weren't aware it was available at.

So we have experience in calling utilities and just asking, "Will you offer aggregated data?" and sometimes they say yes. So you can go and look and see if you can find more. And then you can use any of the approaches we've talked about with samples and waivers and meter photos.

And then of course you have to have your 20 percent reduction if you want to be a goal achiever but on the data collection side that's what that looks like.

And on the next slide we're representing what it looks like if you are in a scenario where your portfolio is already in a situation that's between your owner-paid and master meter properties and available aggregated data or – it doesn't have to be available aggregated data: it could be that you are sampling or you have individual data – either of those scenarios if you're greater than 30 percent of your portfolio then you don't need to do any additional data collection with the caveat that you have reported all available data.

If you have aggregated data available to you in your portfolio that is a required reporting. So Mercy Housing for example has approximately a combination of owner-paid and aggregated data available for approximately 80 percent of our portfolio and so we're required to report all 80 percent of that because we have access to it.

So that's a little visual representation that will hopefully help everybody kind of understand a little bit more what this new data requirement is.

And then my last two slides are to provide some resources for learning about what some data sources are for you. Starting with the Institute for Market Transformation this map is one of their most in-demand resources and is regularly updated to represent what the benchmarking requirements are across the country, what cities are requiring it, what states are requiring it and so if you have

properties that are located in those cities or states this will help give you a sense of when you match it up to your portfolio where you might be able to get your data from.

IMT in general also has many resources related to the topic of energy benchmarking.

And on my last slide is a few additional resources. On the previous slide and this slide when the presentation is made available on this solutions center in about a week all of these are live links directly to these resources and so I didn't have to spend screen space giving you the long URL, so know that you have these resources and you don't have to quickly write this all down.

The HUD exchange has two great resources. The first of which is if you're talking with a utility – and we have done this before – that is potentially open to offering aggregated data but doesn't yet this is a guide for them.

So you as an affordable housing or multifamily owner/operator can talk with your utilities about this, so can the consultants or anyone else – so this is a guide to help them with their best practices for providing the data.

And then there's also the multifamily utility data collection database and that database was put together by HUD working with some of it's members – Mercy Housing being one of them originally under a technical assistance grant – to give a sense of what is the process for getting aggregated data from specific utilities – I think about 100 of them. First it kind of honed in on some of our properties and the other group we were working on this with and then it was expanded to include a lot of the very large utilities in the United States.

So it provides some information about what their requirements are and who their points of contact are and that sort of thing.

OpenEI is a resource that's called the Wikipedia of Energy Information with more than 200,000 pages including a section on incentives, policies, programs and regulation.

EPA, this resource is part of their Energy Star and it has a zip code finder for utilities that provide data for benchmarking. And flipping around in it I found that the information isn't always 100 percent accurate. For example it tells you whether or not multifamily data is included and I've seen some places where that

was inaccurately represented. So I wouldn't just throw the baby out with the bath water based on information there but it does give a sense of where data is available.

ACEEE has energy data access listing by city. This one is a paragraph description of the utility provision of aggregated building data – building energy data on a city by city basis across the country.

And then lastly DSIRE Database. We know it for incentives but it also has policies that can provide information on that site.

There are more out there as well but those are good starting points if you haven't had an opportunity to look into those.

And we're going to move through our presenters today and then for Claire and Ilene and I and any other questions we'll take those at the end. So that's the end of me and I'll hand it off to Claire.

Leslie Zarker:

Great Caitlin, thank you so much, that was really helpful. Okay, next up is Claire McLeish. Claire is a customer success manager at WegoWise by Appfolio. WegoWise is a utility analytics and benchmarking software platform focused on the multifamily sector.

Claire works with more than 40 portfolios on energy and water monitoring, utility allowance calculations, city benchmarking compliance and financial green loan reporting. Prior to WegoWise Claire worked with Smart Meter Energy Tracking and End-to-End Product Lifecycle Analysis. Take it away Claire.

Claire Caitlin:

Thank you very much Leslie and thank you to DOE and HUD for having me on this webinar today.

So as Leslie mentioned my name is Claire McLeish, I'm a customer success manager at WegoWise by Appfolio. I live and breathe in the world of utility data every day and Caitlin I think you did such a great job expressing many of the frustrations that not only the panelists have encountered but a lot of the people on this webinar today listening have encountered with obtaining data, whether it be aggregate data or tenant level data for the BBC or various programs that they're reporting for. Next slide please.

So I was asked to speak today on this webinar because of my involvement with a portfolio called Beacon Communities. In January of 2019 WegoWise partnered with Beacon Communities

for a very ambitious goal of tracking 100 percent of their tenants across 49 properties.

Beacon's primary motivation actually was to obtain tenant level data for utility allowance calculations: it wasn't necessarily focused on the BBC. But they also faced data quality issues and barriers to obtaining aggregate data. This is somewhat unique to Beacon Communities – Caitlin talked a little bit about how Mercy Housing obtains aggregated data for their portfolios is a little bit easier so it is very utility specific and region specific – but noting that this data is primarily used for utility allowance calculations but then also used for BBC reporting and a portfolio wide energy efficiency commitment as well.

So this project began in January of 2019 covering about 6500 tenants at about 50 properties. We were working with about 9 electric and gas utility companies in a mixed portfolio and the goal was to obtain tenant consent from as I said 100 percent of the tenants in order to obtain their utility cost and usage information. Next slide please.

So from January to about March we canvassed sites and worked with property managers to try and hit that 100 percent goal. WegoWise went into this project saying Beacon Communities were really excited about this 100 percent goal but you are likely to end up between having a 20 and 50 percent success rate in your tenant signature profile.

We landed smack dab in the middle of that with about a 45 percent success rate. So this number is actually suppose to say we were able to obtain signed consent forms from 2900 of 6500 units that were given release forms to sign. And actually about 10 properties achieved a greater than 70 percent success rate in signing those tenant release forms.

So from this project and other tenant tracking projects that WegoWise has worked on – and this covers enterprise green communities certification, Fannie Mae reporting, Freddie Mac, Earth Craft certification – we've put together some lessons and best practices to help you build an in-house tenant tracking program. Next slide.

The biggest thing in building a tenant tracking program to get tenant level data for the BBC or other reporting requirements that you have is to get the utilities first. As Caitlin pointed out there are a number of barriers and number of obstacles that you'll face

during the tenant data collection process and understanding those upfront is extremely important.

Caitlin referenced the HUD multifamily utility data collection resource – the link is above in her section of the webinar – and we believe that that's a really great resource to start with.

It will be extremely important though for the property manager or for someone that's a point of contact at you're your organization to give a call to each of the utilities. Every utility has a different process for obtaining tenant level data unfortunately but having a property manager make that call to understand the process upfront we feel like empowers the property manager to then call utilities when they have issues with their own billing, issues with meters and just to establish a general connection with the utility company.

Questions to ask are things like "Do you accept a generic release form? What is the process for obtaining data? What is the turnaround time?" – that being a big and key one here – and "What data is available? Is just usage or is it usage and cost?"

The next thing is to build a really great tenant release form. You're going to get partially completed releases that tenants have given up halfway through signing, so asking for both a release form and a bill copy will be important in that.

The third note is to really explain the purpose of why you're asking tenants to sign these forms. We've found that during the course of the Beacon Communities case study that having a bilingual cover letter helps properties achieve a lot of success with this program. Definitely the language barrier being a huge one and understanding why they're giving out personal information in order to allow you to track their usage and cost history. Next slide.

So now for the signatures. This is when we all sort of beat our head against the wall and get better at this every year. It really is about persisting and keeping up with the utilities but also keeping up with the tenants.

So getting tenants to sign tenant release forms is difficult. Property managers know this more than anybody else but all know that. The most important step is to build the release form into the move-in packet. This establishes from day one the precedent that your portfolios and companies are committed to energy efficiency and to tracking your tenant's data.

The only way we can really manage utilities is if we measure them and so starting from day one sets the precedent that you're committed to this goal and to the BBC in general.

It also helps avoid utility theft. This is an interesting thing that came up during the course of a few different projects we were working on. When asking a tenant for their utility account number it's important to know to ensure that tenants have put utility service into their name. And we've found that within some portfolios – you know, a tenant moves in and doesn't transfer the service into their name – and so asking for this information upfront ensures that that step is completed and that they have proof that it's now under their service name.

The next step is to canvass strategically. So if you are focused on existing tenants and getting them to sign tenant release forms canvassing in person to elderly and multilingual communities we've found has had a lot of success within the Beacon Communities case study – so we handed out tenant release forms to 6500 tenants and I got one call throughout the course of this program.

I got it from a woman who was a self-proclaimed rabble rouser within her community and who not only refused to sign the tenant release form but said, "I'm going to go around to all the tenants in my site and tell them not to sign this release form as well. And what should I do and why is this important?"

After about a 40-minute phone call I learned that her apartment had Energy Star appliances in it – mine does not. I learned the name of both of her cats. She asked to connect with me on Facebook – and don't worry, I didn't – but she said at the end of the 40-minute phone call that she was not willing to sign the form but understood our intentions and would not tell others not to sign the form.

Within all of your communities are these self-proclaimed rabble rousers and so during the tenant release form signing process this is a great time to build allies in energy and water efficient practices across your site.

Again, you're not going to get 100 percent of these but aiming between 20 percent and 60 percent is a good place to aim. You're going to get pushback and you're going to get rabble rousers but persisting and keep up on this and having a plan starting out is really key. Next slide please.

So to conclude this the last part of this is obtaining the tenant data itself. There are a handful of utilities where this tenant data can be done online and of course that's the easiest one. Resources like the ones that Caitlin linked are going to be really important in guiding you to obtaining that data.

Most utilities require a process where release forms are submitted and data is e-mailed or faxed back. It's extremely important to pushback on hurdles. Requesting the data to be sent to a centralized location is one of the biggest ones: not to have it sent to each tenant – that's why you went through the process of getting these release forms – having it sent in Excel wherever possible to avoid the situation of hand transcribing information, and calling to check in on the utilities will be key in this process. Be persistent and expect utilities to be slow.

I put a picture here of envelopes that I've received from PICO. It's one of those where you will continue to change processes within utility companies if you continue to ask and we hope that BBC participants are first and foremost in asking and changing utility company processes.

Most important and to wrap this up I would strongly recommend to begin requesting data in mid-January – put January 15 on your calendars as the day to begin requesting tenant data especially for the BBC.

Utilities typically provide data about 12 to 13 months back and so if you mark your calendars in January or that January 15 date that's a really important one to start your request for the BBC in order to hit that 30 percent that Josh had mentioned earlier with tenant sampling or aggregate tenant data.

So thank you very much for you time and attention during this and I'm going to hand it off to Ilene.

Leslie Zarker:

All right, Claire, thanks again. That was wonderful. That was really, really interesting. Our final speaker today is Ilene Mason with Rethinking Power Management. Ilene's been working in the field of sustainability for over 25 years in various positions focusing on energy, solid waste, communications and manufacturing.

Ilene founded Rethinking Power Management in 2009 with the goal of helping sustainable practices become standard operating

procedures for public, nonprofit and commercial organizations.
Thank you so much Ilene.

Ilene Mason:

Well thank you Leslie and again thank you to everyone to HUD and to DOE for having us on this webinar. We've heard a lot of information about data so far – I'm going to try and keep my remarks relatively brief – but what I really do want to talk about is the sampling plan for when whole building data is not available and some of the roadblocks that we've run into and how we've overcome them.

Before I do – next slide – just a little bit about us. Rethinking Power Management is a sustainable practices consulting company in the Northeast. We work with organizations that want to go green but where their senior management doesn't have the time or expertise to make that happen.

We consult on two levels: business strategy and building systems engineering. We've been working with the Schochet Companies to develop and implement a robust sustainability initiative for the last 10 years and in that capacity we've used the BBC sampling plan to report whole building usage for their sites. And I want to point out that in some instances I'm going to be sharing information that they've provided that we don't have first hand.

Before diving in I'd like to take a moment and just ask everyone to use their imaginations. And I'd actually like everyone to imagine that you're trying to pick up an elephant. Next slide.

So not necessarily a giant elephant but a pretty big baby elephant. And how would you do that? How would you go about it? Where would you start? Next slide.

What's the plan? What resources will you need? Will you need a lot of people? Will you need five people or ten people? Will you need a net? What other kinds of things will you need to gather up this baby elephant? What will you do when you catch him? How will you work with him. And how are you going to manage him long-term? What's the care and feeding plan for maintaining this elephant over time?

So now I want you to put down the elephant and I want you to – go to the next slide – and think about what if that was a big dog instead? And now it's much smaller, it's much easier to manager – if we go to the next slide and think about the resources you would need – maybe you only need one or two people. Maybe you just

need some treats in your pocket to make him go where you want. And certainly the long-term care and feeding is a lot easier.

And I use this analogy because I think it really describes what it's like to try to gather 100 percent tenant data versus using this very, very simple sampling plan that the BBC has put together for extrapolating whole building data. Next slide.

So I'm just going to go over the guidelines for just a minute and then we'll talk about some of the issues. Next slide.

So obviously this is an alternate pathway to meet reporting requirements for BBC. If you're not a BBC participant then it's certainly a way to get a glimpse into tenant utility usage without having to have the heavy lift of a whole elephant.

The low sampling requirement maximum is 10 units even for a facility that has 200 apartments. It does provide some insight into tenant usage and their manual is really terrific – the appendix C on the website really gives you all the information that you would need to know in order to use this sampling plan.

I will say that it still can be a fair amount of work. For example if you have 25 sites and you have to take 10 sample units from each one you're still looking at gathering data on 250 meters but it's certainly easier than doing all of the sites.

For the BBC reporting you only need to gather usage information. If you want to look at cost data or if you're looking at other spaces – commercial demand data – that's something that we'll talk about at the end. Next slide.

So the step by step instructions, these are all charts that are taken directly from appendix C of the sampling guidelines but you can see you just simply do a percentage of each type of unit to come up with how many units you need to sample.

You do need to have the sample represent all the tenant paid utilities, all the different unit styles and the number of bedrooms within each style. Next slide.

So as you look at this the tenant sample data then is averaged for each unit type and it's extrapolated for the full site. Those averages are then summed and you combine it with the owner-paid utilities to get whole building data.

As you can see here these are units in kBtus – you'll likely get your data from the utility in kWh or therms or Ccf – and you can work with it in those units you don't have to convert it to kBtus. What we do is we use an Excel spreadsheet, we take the data from the utility and we enter it all into a spreadsheet, put it all together and upload it into portfolio manager – I'm sorry – we then extrapolate it for the site and put it into portfolio manager.

Portfolio manager will then do the conversion into kBtus and do the calculations that you need for EUI greenhouse gas reductions and other things of that manner. Next slide.

So it seems very simple and straightforward but the first year of reporting was not 100 percent smooth sailing so I'd like to share a few of the things we've learned along the way. Next slide.

It's a pretty step by step process. You're going to select your tenants, get your authorization forms which you've heard about, get the utility data and compile and upload it. It seems like it should be very straightforward but it can take a surprisingly long time.

Step one is obviously the easiest. The others – getting the authorization forms, getting the utility data – are out of your control and they can be very frustrating. For example it took us about six months to get the requested data from one utility partner.

It sounds surprising. Until you realize that many utilities don't have a way to automate these requests – they're still manually pulling the data – so if you're asking for a lot of data it can take a while.

The QC step can also be frustrating and time consuming. It's the nature of large data sets that they're challenging to work with. And you'll also, as was mentioned earlier, need to confirm the data.

And lastly the data upload can take a while if you have a lot of data.

I'm going to go through these steps in just a brief detail. Next slide.

So selecting tenant data. As you look at the tenants you want to use for this small sample it's easiest to track long-term tenants. That can be hard to predict. It varies whether it's a market rate property or an affordable property. Market rate we understand that the average tenancy can be one to two years which means that you might have 50 percent move outs in any given year. Affordable has longer tenancies but still hard to predict. Family sites tend to have

longer tenancies. But you really do want to try to the best of your ability choose tenants that are going to stay put so that it gives you a strong more stable data point. Property managers can be very helpful in trying to select that.

You definitely want to get at least double the sample size that's required for reporting. That's because you may not be able to get all the tenants to sign the authorization forms, you may have move outs, you may have data issues, so we recommend at least double the sample size when you're selecting the tenants that you're going to sample.

And you also want to be as representative of the whole building as possible. We talked about the requirements for BBC but you also want to be careful that for example you're not choosing all corner units or if you have a high rise building that you're selecting units that will be representative of all the floors in the building to the best of your ability.

You will have move outs during the term that you're reporting for and as you choose replacement sample units we would suggest that you talk with your BBC representative about that switch and the need to look back at historic data, but that's something that can get handled on a case by case basis.

Step two is to solicit the tenant authorization forms. You've heard a lot about this. I'll add a couple of comments from our friends at Schochet. Their suggestion is that if you're going to get tenant authorization forms that you tie it into some process that you're doing – whether it's at least sign in or as was mentioned during utility check-ins once a year or if someone's renewing their lease – and do it for all tenants across the board not just those that you want to sample even if you're planning to do a sampling plan.

The other point that was made was that you get the tenants to come in separately for doing the lease signing and all of the paperwork signing than having them do it directly before move in. If the move in van is idling in the parking lot it can be hard to get people to sit and go through all the paperwork. And in addition you need to have consistency among all the paperwork. In addition to having the names correct and avoiding utility theft as Claire pointed out the name on the authorization form has to be the same as the name on the tenant account – the utility account – and that can sometimes be a challenge especially in affordable housing where there may have been credit problems and a different family member gets the utility account number.

So again, doing the signings a couple of days prior to move in date can give you time to address some of those issues.

The last thing that Claire also mentioned is that language can be a barrier. The properties that we work with sometimes will have a whole form translated into another language, sometimes just the important paragraphs if they have to have multiple languages on a given form or working with interpreters. Next slide.

Requesting and confirming utility data. The first is to establish a relationship with the utility person. Claire has gone through that so I won't say much other than to say it can be very challenging to call the customer service number on a utility bill. We usually try to suggest that people ask for whoever handles utility data requests or handles utility billing questions – that can be a better route to take.

And also voice calls always tend to be more productive – at least in the early stages we have found than using e-mail. So establishing that relationship persistence is key, quality check the data received.

Also as you look to go out to the utilities you want to streamline your requests. It can be hard to add details later or to go back for more information. Another reason to ask for more sample data than you think you're going to need. But also make sure if you're going to look for cost data or demand data or any other kind of information that you ask for it all at the same time.

Lastly you want to quality check your data. We have received information for wrong accounts. You want to make sure that you cross reference data you receive with the data you requested. We've also found that data has been halved or doubled in the data that we get back from the utility so really just diligence there is an important component.

Looking to step four, compiling and uploading the data is pretty straightforward as I mentioned. We use Excel spreadsheets and that works well for compiling the data. You want to create portfolio manager accounts or meters to facilitate future error checking. We're happy to talk about that more and other data uses if that's of interest. Last slide.

So we did take a look at how representative the sample data is to whole building data and we looked at a very, very small, very niche sample of five buildings in Boston because those buildings report for the BERDO Reporting Requirement and what we found is that the sampling data really was a good indicator of the relative

amount of utility used in different buildings. So we did find that it really was a good way to make a comparison between building usage. And we also think that it was a good way to look at did you have a lot of spikes or unusual usage in the data that you looked at? That might be an indication that there's an opportunity to look more broadly and look into behavior programs for your tenants.

So that's it for me. Next slide. Questions? I'm happy to answer. Thank you.

Leslie Zarker:

Wonderful Ilene. Thank you again. We are going to have Q&A in just a moment so please go ahead and enter your questions into the Q&A box on the side of your screen.

Before we get to your questions though we'd like to do one final poll that we're pulling up right now. The question is "Which category best describes how your organization uses tenant or whole building data other than BBC recording?" So for those of you who are collecting tenant data if you could let us know the best description. We realize you use it for different things but if you could pick out the primary way that you use it that would be of great interest to us.

I think we'll wind up this poll in just a moment. Here are our answers. So I guess we have a lot of affordable housing organizations out there. One of the main ways that we use this data is for utility allowance calculations for HUD – for HUD reporting. For annual budgeting purposes: 9 percent. Utility tracking: i.e. to look for trends and spikes and anomalies in our data, perhaps equipment failures, things like that – 21 percent of you use the data for that type of purpose.

For the purpose of building prioritization: i.e. targeting buildings for energy efficiency upgrades or for other measures – that's the biggest chunk of you – 30 percent of you use the data for that purpose.

And then for tenant education. Identifying tenant behavior patterns that you may want to call out and do some awareness programs or education programs around energy consumption usage patterns to help tenants reduce their energy consumption and of course their bills. 13 percent of you use the information for that purpose. So that's really interesting for us. Thank you.

We will now go to your questions. Very quickly I'll just mention that we have some additional resources we'd love for you to look

at. These slides will be made available to you online and you'll be able to click on these links. The multifamily utility benchmarking toolkit is up on the HUD Exchange and that is step by step really comprehensive guide to the type of work that we're describing collecting tenant and whole building data, so a really useful guide. I urge you to go to the HUD Exchange and look for this benchmarking toolkit.

Also on the HUD Exchange is the multifamily energy and water efficiency resources library which has a number of resources specific to the multifamily sector on these topics you see here on this screen.

So I'll move from that and let's go ahead and take your questions now – we have quite a few. We'll pick as many of them as we can.

The first question I have is for Caitlin. The question is "Is time of use data useful for your purposes? In our 276 unit high rise we have quite a few tech business persons who use lots of electricity with their banks of computers."

Caitlin Rood:

So for the purposes of BBC time of use data is not required but it could be of value to owners for looking at their data and taking action especially related to avoiding costs by shifting their consumption profile outside of time of use if they're able to do something like that. But it isn't a BBC issue.

Leslie Zarker:

Sure. The next question – or rather it's a comment to Claire's presentation – "What about providing a terminal in the building for tenants who might otherwise use a paper form to submit data – or to building owners who may otherwise use a paper form to submit data?"

Claire Rood:

Yeah, this is a great comment. So this is in reference circulated tenant release forms that are paper copies underneath doors or in mailboxes and then providing some sort of receptacle to drop them off. I think that's wonderful. Not only providing kind of a strategic either time of the month or time of the year to collect these in person but doing an ongoing collection via some sort of locked terminal in the building I think is a fantastic suggestion.

Leslie Zarker:

Yeah, I thought it was cool too. I have a question here for Ilene. "Could property managers ask tenants to volunteer to report their data?"

Ilene Mason: So I think that that's certainly a possibility. I think it would be important to confirm that you end up with a representative and random sample of tenant units and that they are properly representative of the unit styles, number of bedrooms and the facility that you're trying to represent.

So if you had a good volunteer group you could perhaps choose those samples but I think it would be important to make sure that you dot the I's and cross the T's.

Leslie Zarker: Great. Thanks Ilene. I have a question here for Josh. "Is the Better Buildings program doing anything to engage utility companies that currently don't offer whole building data – aggregated whole building data – so that the utility companies understand the importance of providing this data?"

Josh Geyer: Yeah. So that's outside of ICF responsibility but I feel like they have at times interacted with utility providers but it's not their job to be like running after utilities. I mean it shouldn't be anyone's job really: they should just provide the data because they should do it.

But we know that this is an issue obviously. We just went through a strategic planning process for our multifamily sector and this was one of our things we identified as something we need to work on going forward. When current presidential candidate and former secretary of HUD, Julian Castro, was secretary he sent out a letter to all of the utility companies to ask them to cooperate and it had very little impact and I think that there's more that we can do, and I think there's more we can do in partnership with DOE.

So nothing to report yet but it's definitely on the radar.

Leslie Zarker: Excellent. Thanks Josh. This next question is for Caitlin. It's surrounding the issue of basically where to find a template for legal data access and release – tenant data access and privacy release – that can be used for residential lease agreements – where could people find some sort of template or form to add to their lease agreements?

Caitlin Rood: Sure. So on HUD's multifamily data collection database there is a resident release waiver template that's available. A few thoughts I would add to that before everybody goes and looks for that is that many utilities have their own specific release form required. So you wouldn't want to go to the trouble to have all of your residents sign the wrong release form. So I would work closely with your

utility – each utility – before you put their signature packet the wrong form.

And second of all I haven't been able to find very much lease language itself but there are – I have found some data out there and so if the asker of this question would like to reach out to me directly I'd be happy to share the resources that I have – and anybody else could reach out to me and I'd be happy to share that. Just a word of caution about making sure that you work with your utility on the waiver because you don't want to go to the trouble to collect the waivers and then have to do it all over again.

Leslie Zarker:

Great. And by the way to all of our attendees we do have the e-mail addresses of our speakers on the last slide in this slide deck and we'll be getting to that in a minute and of course the slide deck will be posted on the Better Buildings solution center.

Last question today that we have time for. This is to Ilene. "Is there a place for providing financial incentives such as rebates for getting tenant information?"

Ilene Mason:

So for this – I don't think I 100 percent understand which direction – I can think of this in two directions – one is whether the utilities or others would provide financial incentives to support an organization's tenant data collection efforts. I have not seen that in the Northeast but I know that a lot of the utilities are moving towards providing more technical assistance and helping to overcome some of these barriers. So my suggestion there would be to check with your specific utility to see if their technical assistance incentives can be used to help with this initial data collection.

On the other side of this is the tenant's interest in incentives for – will they be more likely to provide data knowing that you're looking to improve and reduce energy consumption in the common areas and in the tenant spaces? And in our experience tenants have been very willing to participate and to be more cooperative when they know that there's value for them in moving forward.

Many of the utility programs will come in and do lighting upgrades or water saving measures or those kinds of things in the tenant units. I hope that's helpful.

Leslie Zarker:

That is helpful. Thanks Ilene. Okay, next slide please. Unfortunately we have to stop the questions now. I'd like to provide a little bit of information about the upcoming webinars in

our Better Buildings webinar series. We do have a wonderful series through the spring of 2020. Some of the topics are listed here. Next slide.

We hope you'll plan to attend the next webinar on Tuesday, October 22. It's entitled *Energy Efficiency and Renewable Energy in Small and Rural K-12 Schools*. And just a brief description. Small and rural K-12 schools have unique opportunities for improvement due to their size, location and available resources.

The webinar will cover energy efficiency and renewable energy resources and strategies to help schools to train a robust workforce and achieve energy and cost savings. We'll also spotlight a few stories of states and K-12 school districts that are successfully navigating the challenges. Next slide please.

This is a big announcement. We're very happy to announce the next Better Buildings 2020 Summit. We're asking everyone to save the date for the summit being held in Arlington, Virginia, from June 8 through 10 next summer. Registration will open in January with an early bird special so please do keep you eye out for more details. Next slide.

With that I'd like to thank all of our speakers again so much for taking the time to be with us today and for all the preparation that went into this webinar. For everyone attending in our audience today please do feel free to contact them directly with additional questions or if we weren't able to get to your question during the webinar.

If you'd like to learn more about the BBC or alliance please check out our website or feel free to contact my colleague Kendal Sanderson at the e-mail shown on the screen. I encourage you to follow the Better Buildings initiative on Twitter for all of the latest news and you will receive an e-mail notice when the archive of this session is available on the Better Buildings Solution Center.

So for that I conclude this webinar and thanks to all of you for attending with us today.

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