

Nina Wuerch:

Hello, and thank you for joining the webinar today. We're going to give folks another moment to log in, so we'll be starting soon.

[Silence from 0:00:29 to 0:01:23]

Okay, let's get started. Hello, everyone, and welcome to today's Better Buildings webinar, dedicated to bringing you the latest actionable insights from leading industry experts. Better Buildings webinars are a chance to explore the topics, technologies, and trends that affect your organization, as well as efforts to accelerate decarbonization and energy efficiency adoption. And the next slide, please.

Today's webinar is called "Hacking the Code: Building Performance Standard Integration and Implementation." Really quick, before we dive in, there are a few housekeeping points that I would like to cover. Please note, today's webinar will be recorded and archived in the Better Buildings Solutions Center.

We'll follow up with today's recording and slides and have those made available for you all. Next, attendees are in listen-only mode, meaning your microphones are muted. If you experience any audio or visual issues throughout the webinar, please send a message in the Q&A box located at the bottom of your Zoom panel, and our tech support team will be in touch. Next slide, please.

I'm excited to have you join us. We have a wonderful panel of speakers today and they're bringing us a lot of expertise. Following some introductory polls, we will have our speakers share their experience with building performance standards implementation or integration, and then we'll be concluding with a 15-minute Q&A. And next slide.

And with that, I'd like to introduce myself. My name's Nina Wuerch and I'm your moderator for today. I'm the DOE's Lead for State Partnerships within the Better Buildings Initiative, and I'm also located within DOE, the US Department of Energy's Office of State and Community Energy Programs. And with that, I support cross-cutting technical assistance public sector-wide. Next slide, please.

Now, today we will be using an interactive platform for Q&A and polling. Please go to www.Slido.com on your mobile device or by opening a new window in your internet browser. Today's event code is #DOE.

If you would like to ask our panelists questions, please submit them anytime throughout the presentation. We'll be answering your questions near the end of the webinar, though. You can select the thumbs up icon for questions that you like, which result in the most popular questions moving to the top of the queue. Next slide, please.

We want to learn more about you, so let's start off with a couple of questions. Please join us again over at Slido to respond to the following questions. And if you're having any issues, again, please message our tech support team by using the Zoom Q&A function. Okay.

And then, if you could, our first question is "What stage is your area in regarding a building performance standard?" So, we have no building performance standard plan, development, policymaking, and implementation.

Awesome. Yeah, it looks like we're coming through with a lot are in the no BPS plan yet, but definitely some who have the development starting out. Wonderful.

Yeah, we'll give a little bit more time to have those results keep flowing in. It's good to know who's on this panel – I mean, who's joining the audience today, so thank you so much.

Okay, perfect. So, I think we'll transition to our next slide and our next poll. And thank you for joining us. The next one is "What challenges are you facing with implementing a building performance standard?" This is an open text one, so reply and type in what you have. Awesome. Thank you, everyone.

"Too many properties across different standards." "How to track utility data." "Legal authority from the state to do so." "Government review." "Building data capture." "Money." And "the age of the portfolio." Yeah, wonderful. Thank you so much, everyone, for putting those in. We'll wait a bit more, but this is fantastic for us to hear and to share. So, thank you. Okay, perfect. Yeah, no, thank you.

"Lots of older housing stock with different systems." "Budgeting and approvals." "Mentality, older mentality of contractors." "Complexity around metrics." Thank you. I think at this point, we'll transition to – please keep putting them in, but we'll transition to today's presenters.

So, we have a great lineup of presenters today. Our first speaker is going to be JoAnna Sanders. JoAnna serves as the Program Analyst Operations Lead within the Building Performance and Enhancement Branch at the District Department of Energy and Environment. In this role, JoAnna provides operational oversight and program management to the district's longstanding Energy Benchmarking Program, as well as the Building Energy Performance Standards Program, leading coordination with technical compliance team members, assisting with outreach and education, and conducting data reviews and spearheading enforcement activities.

Our speaker after JoAnna is Michael Miranda. Michael Miranda is the Director of Portfolio Sustainability at the National Housing Trust and he supports the real estate team in achieving NHT's Better Climate Challenge goal by 2033. After receiving a master's of architecture from Wentworth Institute of Technology, Michael joined the Massachusetts Renewable Energy Trust, where he worked on the Green Affordable Housing, Green Schools, and Commonwealth Solar Initiatives.

Our third speaker is Jennifer Pritchard. Jennifer has worked in nonprofits and government administration for several years and has expertise in data analysis, planning and development, and process improvement. Currently, Jennifer is managing Seattle Housing Authority's energy reduction plan to prepare for building performance standards reporting and implementation. In addition, she has assisted SHA with solar and battery storage feasibility and storm watcher projects. Jennifer serves as SHA's Planning and Sustainability Division.

And our final speaker rounding out this webinar is Billierae Engelman. Billierae sits on the Commercial Buildings Integration Program in the Building Technologies Office within the Office of Energy Efficiency and Renewable Energy at the US Department of Energy. She leads the Building Technology Office's Building Performance Standards Program, including managing technical assistance offerings and coordinating federal resources and analysis with national labs and support contractors. Prior to working at the Department of Energy, she spent seven years managing energy efficiency projects for utility programs in Massachusetts. Thanks to you all for being with us today.

And with that, I will hand it off to JoAnna to kick us off.

JA: Thank you, Nina, for that introduction. And welcome, everyone. Thank you for attending. As Nina mentioned, my name is JoAnna Saunders. I'm a Program Analyst here at the District of Columbia Department of Energy and Environment and in my role I help oversee the implementation of our building energy performance standards. Next slide.

So, today, I'm going to go over a couple of things. I will give a quick BEPS program overview just to set the stage and let you all know how we thought about our BEPS program and how we are implementing it currently. I'll touch a bit on our affordable housing work and then finish out with just some general successes and challenges in being the first jurisdiction to pass a building performance standard in the United States and how we are working to improve it every day. Next slide.

So, I always like to start with the broadest context, which is that here at DOEE, we are operating under this Sustainable D.C. Vision, which is to make D.C. the healthiest, greenest, most livable city in the country. Next slide.

And in order to do that, we have developed a number of plans that are focused on general sustainability goals, energy goals, carbon goals, net-zero goals, all of which are driving us towards what was originally a net-zero carbon by 2050 goal. But if you advance one more, we have actually become even more aggressive with our goals in recent years. So, our Sustainable D.C. and Clean Energy D.C. plans are driving us towards some interim goals of 2030, which are cutting energy use by 50 percent, reducing our greenhouse gas emissions by 60 percent, and again, all of this getting us towards zero carbon by 2045. Next slide.

So, in order to do that, we needed to obviously understand where our energy use is coming from here in the District of Columbia. And if you advance one more, it's pretty clear that the majority of our greenhouse gas emissions are coming from buildings. So, those three highlighted squares represent almost 75 percent of the district's greenhouse gas emissions. And it's somewhat evenly split between residential buildings, our government buildings, and then commercial and industrial buildings. So, unlike other cities or states, we don't have any industry here. We don't have a huge transit sector. And so, most of our emissions are coming from buildings.

So, of course, if we are talking about reaching zero carbon, if we're talking about reducing our energy use, we have to start with our existing buildings. Next slide.

So, in order to respond to the findings of the Clean Energy D.C. Act and to actually get us towards those sustainable D.C. goals, our D.C. Council and the mayor signed into law the Clean Energy D.C. Omnibus Amendment Act of 2018, which had a number of different facets, including some additions to our existing energy benchmarking law. But of course, most importantly, this is the law that established our building energy performance standard. Next slide.

And I think that it's important to highlight that we were able to pass a building energy performance standard program law because we already had an existing robust energy benchmarking program in place. Buildings have been actually required to benchmark their energy and water data to DOEE since the law passed in 2008. But really, the public sector buildings started reporting data to us in 2010, so 14 years ago. And then privately owned buildings over 50,000 square feet have been annually reporting their data to us for a decade. So, they have a long standing history of having to understand how their building's operating, gathering those energy bills, and submitting it to DOEE for review. The Clean Energy D.C. Act also expanded this energy benchmarking requirement, making the eventual requirement drop all the way down to privately owned buildings over 10,000 square feet in order to best set us up for future building energy performance standards cycles.

That law also added a third party data verification requirement because as we were thinking about the implementation of the BEPS, we realized that we wanted to have even more mechanisms in place to ensure that we were evaluating buildings based on the most complete and accurate and verified data possible. So, now buildings are starting this year required to have their benchmarking data verified and every three years after that. Next slide.

So, following that same kind of ratcheting down over time, as do our BEPS, we are currently in BEPS period one. So, if you advance one, that is covering privately owned buildings over 50,000 square feet and those D.C. publicly owned buildings over 10,000 square feet. So, this is our first cohort in BEPS period one. But as you see, this will eventually drop down to buildings over 25,000 square feet and then eventually it'll cover all private and publicly owned buildings over 10,000 square feet.

But as I mentioned, because we have that energy benchmarking law in place and because these smaller buildings will have had a number of years under their belt before they have to be subject to the BEPS, we felt that this was a good way to implement the BEPS and make sure that building owners had plenty of time to get familiar with their data, familiar with Energy Star Portfolio Manager before they actually had to make performance improvements. Next slide.

And this snapshot, it's got a lot of information here but it's basically just capturing everything that happens within our BEPS revolution. So, right now we are in BEPS period one. So, going from left to right, year one, that started on January 1, 2021. And that is when we set our first BEPS. This first BEPS period, buildings are subject to a six-year compliance cycle if they did not meet their standard. And then, that final year seven is for DOE to do all of our analysis and potential enforcement. You'll also see that within the cycle there are a number of third-party data verification years. It's important to note that third-party verification is due in year seven but it is for the data of year six. So, when it comes to our final evaluation and analysis, we are doing it based on third-party verified data. And of course, all buildings are still required to submit their annual benchmarking to us every year.

If you click "Next," we passed our first big reporting deadline last year. So, buildings were required to notify DOE how they intended to come into compliance with BEPS by submitting and selecting their compliance pathway. We had a really great success. Over 90 percent submitted right around that April reporting deadline for our pathway selection, which showed us that buildings were really engaged. They understood. They knew that they needed to tell us what to do and hopefully meant that they were also thinking about how they were actually going to implement that compliance pathway. If you do one more, we are currently in year four. So, year four of six, we're more than halfway through with our first compliance cycle. And so, as I mentioned, this is the first year that buildings are going to have to meet that third-party data verification requirement and of course submit their annual benchmarking report. Next slide.

And I'm not going to go too much into all of the details of all the pathways we offer. All this information is on our website, and we'd be happy to talk about this at another time. But I basically just want to highlight that we have a lot of flexibility. We have a lot of options. From our most straightforward, just reduce your site energy usage by 20 percent, all the way over to our alternative

compliance pathways, which are specifically built out for special circumstances, unique circumstances, really making sure that we are offering a viable option for all buildings that are subject to BEPS while still meeting the spirit and the intent of the law, which is to reduce overall building energy usage. I will note that 95 percent of the pathway selections we received were either the performance or standard target pathway. So, in the vast majority of cases, buildings are opting for the pretty straightforward maximum flexibility. But we have also received alternative compliance pathways where we are able to work with building owners for their unique circumstances. Next slide.

And of course, while we hope that all buildings in the compliance cycle actually meet the requirements of their selected pathway, there is of course the enforcement mechanism there if they don't. And so, we determined our alternative compliance penalty based on a published cost benefit study that we were required to conduct in order to set our penalties. So, our penalty is currently set at \$10.00 per square foot at the maximum. And so every building that is subject to BEPS is potentially subject to their maximum penalty, which is the size of their building in gross square feet times that \$10.00 per square foot, though there is a cap at \$9.5 million. But of course, we don't want to punish buildings that have made some efforts but maybe didn't get all the way there, so our penalties are adjusted based on the actual performance relative to the pathway target.

So, the simplest way to explain it is if a building is 100,000 square feet and it didn't meet the BEPS, it has a maximum penalty of a million dollars because 100,000 square feet times \$10.00 a square foot. They opted to do the performance pathway, which required them to reduce their site energy use intensity by 20 percent. At the end of the cycle we find that they actually only lowered their site EUI by 10 percent, so they only performed 50 percent of the target that they were supposed to hit, but therefore their maximum penalty is also adjusted by 50 percent, meaning it would be \$500,000.00 Next slide.

All right, so now that I've gone over the basics of the program, I figured for this audience, it would also be important to note what did we do to get here today? And really, what this slide is trying to highlight is that we tried to start work as soon as possible. So, the Clean Energy D.C. Plan was published in August. Just a few months later, D.C. Council passed the actual Clean Energy D.C. Act. It was signed into law in January of 2019. Three months later, the branch that I currently sit in was established, and we pretty

much immediately got to work. We started holding working group sessions. We worked to build out our grantee, the Building Innovation Hub, to start helping us with outreach. Our BEPS Task Force was appointed in November of 2019 and those members started meeting biweekly. All the way back in September of 2019 we issued scorecards, pretty much notifying buildings where they might fall relative to the BEPS, understanding that the BEPS were not going to be established until January of 2021. But we wanted to give buildings a heads up, like "Hey, you have been improving your performance over time. That's great. Keep it up." Or "We've noticed a decline in your performance over time. You should keep an eye on that, as you could be subject to BEPS."

We also started holding focused affordable housing group meetings in 2020. We did monthly update webinars, and of course we had our rulemaking period. But this is mostly just to highlight a full year and a half of outreach and engagement before the first BEPS were even established. Next slide.

And of course, since then, we have been working really hard to put out a lot of information and make this program as accessible as possible. So, of course, we published all of our regulations that outlined how buildings actually comply with the law. We published a 100-page guidebook that really dives into the nitty gritty of what are all of the components of the pathways, who's eligible, what are the timelines, what needs to be submitted and when. It goes into all of our alternative compliance pathways and even the penalties. So, really just, like, the guide to the BEPS. We also published a cost-benefit analysis study that I mentioned that helped us determine the alternative compliance penalty. We published our schedule of fines and also a greenhouse gas study, which we were required to conduct in order to basically evaluate if the standards and the setup of our program as it is today is really the most effective and viable into the future.

We also have put out a number of technical support tools. We revamped our energy benchmarking visualization and disclosure map. We have an entirely new website. We have a BEPS owner portal that better equips building owners to be connected with their data, to understand their compliance, to see their BEPS milestones. And we also have a help desk, which moved us away from just answering e-mails on Outlook, which we did for years, to now having a robust ticketing system that allows us to actually pair communications with buildings and keep track of those communications over time so that we can really streamline our

assistance, as we are answering close to 8000 inquiries per year at this point. Next slide.

And this is just showing some of those tools. Really, what we wanted to focus on was an increase in data access and transparency. We don't want to hide anything. Everything is pretty much out there for public consumption. There is very little that's behind the screen. And it also emboldens building owners to take more ownership of how their buildings are operating and feel that they have a good understanding of not only the BEPS program, but how they can improve their building's performance moving forward. All right. Next slide.

Like I said, all of this is publicly disclosed. You could look up a building that you reside in, that you work in, that you're thinking about leasing or buying and seeing how it performs, and maybe that helps inform decisions moving forward. Next slide.

I'll quickly touch on some of the work that we did on affordable housing. And so, this is obviously something that we thought about from the get-go. Affordable housing is a building stock that we know faces unique challenges, and we certainly did not want our BEPS program to further burden an already burdened housing group. So, our partnership with the D.C. Sustainable Energy Utility and the D.C. Green Bank, along with funding from the American Rescue Plan, ARPA funds, allowed us to establish the Affordable Housing Retrofit Accelerator, which was intended to provide financial and technical resources to help affordable housing buildings comply with BEPS. Next slide.

So, as I mentioned, we were able to leverage ARPA funds that we applied for in 2021. We identified around 140 affordable housing buildings that did not meet BEPS that might be eligible for assistance, and we applied for that funding, identified our partners, and pretty much immediately got to work. Next slide.

So, through AHRA, we were able to provide financial assistance for energy audits, retro-commissioning, installation of new energy-efficient building equipment, and low-cost construction loans for deeper energy retrofits for buildings that were interested. And on top of that, it allowed us to provide one-on-one guidance, like staff time, to help building owners understand the BEPS, to help them uncover further energy-saving opportunities in their buildings, and then, of course, help ensure that they are meeting all of the milestones and steps along the way. Next slide.

And this just shows the eligibility for these buildings is a multifamily building over 50,000 square feet that didn't meet BEPS and, of course, met the definition of affordable housing. Next slide.

So, my final two slides here is just really quick high-level successes and challenges. There are so many more that couldn't fit on here, but I thought it was important to highlight a few. So, one is we feel really proud of the amount of stakeholder engagement that we've done. There is never a limit to how much you can do. There's always more. But as I think some of those slides early on showed, we started this work pretty much immediately from the get-go. We wanted to engage with all of the relevant stakeholders, make sure that they were brought into conversations.

We also had a really open and transparent process. We have been holding BEPS task force meetings on a regular basis for four years now. Those are open to the public. They are recorded. All of the notes and PowerPoint slides are published on our website. All of our data is accessible. Like I said, we're answering thousands of inquiries. We are not hiding everything – or, anything. We want everyone to know everything.

We also developed flexible compliance options. We have those compliance pathways available so that if your building just for some reason doesn't fit into one of those predetermined pathways, we will work with you to establish a plan. We also have a number of really awesome tools and resources, as well as technical assistance programs. I highlighted that we had a 90 percent compliance rate with our first BEPS reporting deadline. I'll say now it's at 98 percent, so almost 100 percent. And through AHRA, we have been able to offer over 60 free ASHRAE level 2 energy audits for almost 100 affordable housing buildings. Next slide.

So, this is my last one. I won't read through all of it, but obviously there's challenges. We've been dealing with the effects of COVID with building owners really focused on COVID and recovery and not really thinking about BEPS until very recently, making sure that there's a robust enough workforce available to actually do this work, thinking about short-term versus long-term compliance. How can we ensure that our program gives certainty to building owners while also driving them towards eventually that zero carbon goal? And of course, funding can be fleeting, and so you have to act quickly and responsibly or you might leave money on the table.

And with that, that concludes my presentation, and I will pass it over to Michael Miranda with NHT.

Michael Miranda: Good morning, everyone. You can turn to the next slide, please.

Yeah, the National Housing Trust is a non-profit owner-developer of affordable housing along the East Coast. Roughly half our portfolio, controlled portfolio, is in the District of Columbia. In addition, we're a lender and developer of renewable energy to the affordable housing community. But I want to highlight our policy team's great work as they've worked with affordable housing stakeholders in numerous jurisdictions across the country to ensure the affordable housing community is represented in crafting BEPS regulations.

And I'll be talking about the BEPS landscape in general, not just the District of Columbia. Of course, there's a number of metrics that can be used. Hopefully, we're seeing alignment. I know in some jurisdictions that I'm working with that's the case. But multiple metrics can be difficult for owners to deal with. In general, from the owner perspective, a number of programs deal with certain aspects differently of reporting. And so, lesson learned, really, is to ensure that you understand what your jurisdiction is, what we'd like you to report in that method, in that manner. We've seen some differences. Reorganize your data to align with that, and then fix, of course, the data issues that come after that. There's definitely a benefit to hopefully reporting one of your communities early in the process, learn from that community, and then take those lessons learned, once you understand the methods and the guidelines that they have in place fully, and transition the rest of your communities to the correct alignments.

I'll mention that there's a number of great green building and energy efficiency building certifications, such as EPA's Energy Star new construction certification for multifamily housing. Those certifications are great. I highly recommend them. But building performance standards evaluates operations. Those certifications will get you headed in the right direction. But even a passive house certified building doesn't guarantee efficient operations of that building. In addition, some BEPS performance levels are more aggressive than expected. I'm seeing that a bit. And there's also different building performance standards structures. Some have clear long-term performance targets, while others have cycles, compliance cycles with a new performance level set at the beginning of each cycle. From my perspective, that clear long-term

performance target is a benefit, but there's other ways to sort of compensate for that lack of transparency if that's not the case.

And to JoAnna's earlier point, the affordable housing community has a unique sort of situation with renovation cycles every 17 to 20 years, and mid-cycle improvements being very difficult on a very tight operating budget. So, I think consideration for those constraints is necessary. Next slide, please.

One of the other things that we've learned is that one of the best ways to QC your property is with the gross floor area of the property. That's a huge impact on the performance of the building. And within our portfolio I've found that this is key. We've definitely – I've definitely found some communities where it would benefit from taking a look at this and increased the GFA by 20 percent or more in a number of communities. This can be difficult. We have certain communities where we don't have building plans, and so we have to use an alternative means. A building survey works well if the ground floor has really the same massing as the upper floors, and sort of the same footprint on the ground floor is the same – kind of relatively the same footprint on upper floors. But otherwise, there's other means of doing that and some tools that can be used. But I would highlight this as an important sort of consideration. Next slide, please.

Internally, when we're looking at our portfolio's energy efficiency performance, my preferred metric is site energy use intensity, site EUI. It's fuel neutral and I think it's the best metric for energy efficiency of a building. In some parts of the US there are – all electric buildings are more common, specifically in the Southeast and the Northwest.

Just a couple images from EIA. We have commercial buildings, roughly 31 percent are all-electric in the US, and you'll notice even the buildings that aren't all-electric, they use a good amount of electricity in their various end uses of course. Electricity is quite common in air conditioning, the vast majority, but even in heat and hot water. And when it comes to a metric, I prefer site energy use versus source energy use as the other sort of common metric that's out there. ENERGY STAR scores are based on it as well. It tries to account for the energy losses from the creation of that energy. And so, to get to that source energy use you actually multiply the actual usage of the site energy use by a certain multiplier depending on the fuel source.

The issue is that in our portfolio, that multiplier from site to source energy, that multiplier is from 1.67 to 2.67 in our portfolio. So, an existing building site EUI of 40 could range from a – could have a source EUI of between 67 and 107 based solely on the ratio of gas to electricity usage on site at that building. So, in that case, more electric consumption in a building kind of skews the source energy metrics to higher and to look worse. It might be the case just looking at a pure energy efficiency metric of the building. And so, I don't think that's a true reflection of the performance of the building and try to avoid the use of those metrics. Next slide, please.

The other thing that I'm seeing is the use of greenhouse gas emissions in building performance standards. But I think there are some clear ways to go about this and that work well and that really show true emissions of buildings. A great one is direct greenhouse gas emission intensity. Some building performance standards are using this as a metric and I think it's a great one, just looking at scope one GHG emissions onsite – from onsite combustion. When you go into kind of whole building greenhouse gas emission intensity, scope one and two – so, adding in electricity. Just using it as it is, I think, is also another great metric. I kind of want to caution against the use of carbon offsets or renewable energy certificates to use as a way to kind of show compliance. I think that can be difficult if it's not aligned with GHG accounting principles, and a key one is additionality, going beyond business as usual. Not all renewable energy certificates are carbon offsets, and so they don't necessarily reduce GHG emissions, and so I wanted to – we've seen that grow a bit.

The issue – a clear issue here is just make sure we're aligning with GHG accounting principles and that we're kind of avoiding a way for some owners to potentially greenwash their buildings. And I would say also the difficulty comes with smaller developers, such as our case where having more – adding more complexity to the process and reporting can disadvantage some smaller property owners.

Thank you. I'll turn it over to Jennifer Pritchard with the Seattle Housing Authority. Thank you.

Jennifer Pritchard: Good morning. Again, my name is Jennifer Pritchard with Seattle Housing Authority. I'm the Sustainable Buildings Advisor. Next slide.

Seattle Housing Authority serves over 30,000 people and we manage over 300 locations. In asset management, the team that I work in, our goals are centered on race and social justice and the customer experience, quality standards, maximizing the use of agency assets to best serve Seattle, and preserving and expanding affordable housing. Next slide.

The environmental stewardship and sustainability team grew out of those commitments and values to equity, quality, and wanting to both reduce climate pollution and reduce the negative impacts of climate change on SHA residents. The work began in 2016, and in 2019 the agency adopted its first sustainability agenda. SHA started to incorporate building performance and energy reduction goals into this broader agenda, and this initial work has really dovetailed into BPS policy and better climate challenge participation. Next slide.

SHA got involved early on in the development of BPS policy in Seattle by participating in an advisory group, and I just wanted to provide you the recommendations from the director's report from that group. These were important factors for SHA, was to avoid overlap between the city and state policies, to provide technical assistance, to comply at a portfolio scale, to be able to do that in aggregated form, to allow ample lead time, to meet gradual targets, and considerations for density.

We also participated in a case study at one of our buildings, Stewart Manor, in partnership with the City of Seattle, the Office of Sustainability and Environment, and the University of Washington, the Integrated Design Lab, to do an energy reduction study. The results of the study have been used at SHA to extrapolate to our other buildings and can be used as a resource to other multifamily providers, and OSC has used it as an example of energy reduction plans and trainings. And I've sprinkled some links to resources and reports that I'm hoping our facilitators can drop in the chat as I go. Next slide.

So, far, from my experience with the rollout, I think the City of Seattle incorporated most of the feedback from the stakeholder group. So, I just want to go over a few points and resources here from both the standards from the state and city. So, the state's targets are EUI-focused, and those have been released. We will be doing our energy management plans at the state level and those will include the operations and maintenance reporting. And the state has released early adopter incentives for certain building types. We're still waiting on the multifamily development. And the

Department of Commerce regularly provides updates through webinars. And for the most part, the city has layered their standards on top of the state's and there's been pretty effective coordination between agencies. For example, the city has hosted the Seattle Clean Buildings Accelerator, which is a learning lab that SHA has participated in. And the city's targets are greenhouse gas intensity-focused and those targets have been released.

We're still waiting on some of the compliance guidance from the city but we do know that one pathway will include aggregated portfolio measures. So, that's good. That's one of the key recommendations from the stakeholder group. And I provided a couple links to some resources that I think are good examples of how governments can provide accessible information to building owners.

So, with this information in hand, we know that amongst our portfolio of about 70-plus buildings that need to comply, about 40 of those need to reduce their EUI targets and about half of those 40 need to reduce their greenhouse gas targets. Next slide.

So, this is our timeline. We are currently doing baseline reporting, energy reporting with the city of Seattle. We are preparing our energy management plan reporting with the state. And I also included the Better Climate Challenge goal here because we've layered that strategy on top of the BPS plans, which you'll see in our strategy on the next slide. But I just also want to – I included this picture as a reminder of why these long-term goals are important for future generations living in our communities. We want to make sure that we incorporate strategies that both employ short-term resiliency and long-term collective reduction strategies. So, next slide.

So, this is really a high-level picture of SHA's reduction strategy. Number one, SHA has created a planning and sustainability division to bring together housing quality, sustainability, capital planning, and budgeting into one team. Number two, one example of a resiliency strategy that we're incorporating is having a plan to address extreme heat and smoke events in Seattle, where most residents do not have cooling systems. SHA has already installed heat pumps in several community room spaces to address this issue, and we're continuing to do that work.

Number three, some examples of upgrades that we will employ are water heater electrification, corridor ERVs, and roof insulation. And then for buildings that are all-electric, one strategy we're

considering are changing out electric heat baseboard systems, which are inefficient. And number four, single-family and duplex homes are not included in BPS compliance policy, but SHA sees a huge potential to reduce greenhouse gas emissions in two of our community portfolios, where we mostly have single-family homes. So, we've incorporated this electrification work into our Better Climate Challenge goal, and our goal here is to electrify 600 homes. Next slide.

So, I just wanted to give you a sense of what the work looks like on a day-to-day basis. I'll just highlight a few of these areas. So, under team development and communication, I mentioned that we created a new team, the Planning and Sustainability Division. So, one of my roles is just to make sure everyone is updated on pertinent information about priority buildings so we can start to weave those into our capital planning. And then, under data management – so, energy data – Washington State chose Portfolio Manager as the data system that we are all using and we've been working with that for a while. And then, one other area that we would like to look at is capital assets data and making – moving towards a more robust database for that work to track inventories and maintenance plans and capital improvement tracking. Next slide.

So, I just wanted to show you the Portfolio Manager and highlight a couple of tools that I think are beneficial. So, the sharing tab at the top, we can share with government agencies and external partners. That makes it very useful in terms of compliance, but also just implementation projects. We can also pull reports in the reporting tab to create customized dashboards to track internally, which is – I provided an example there at the bottom picture. And then, the link at the bottom, the article from IMT, "Beyond the Meter," I just wanted to stress the importance that they talk about in terms of utilities dedicating time in the rulemaking process to work out issues with whole building data access. And then, also the importance of state agencies building the capacity to assist utilities to address issues. And just to say, we can see that difference on the ground when it's working well.

And with that, I will hand it back to Nina and Billierae.

Nina Wuerch:

Wonderful. Thank you so much, Jennifer. Yeah, thank you so much. Really quick, before we move into Billierae's sharing, I would just want to have a quick reminder that we will be taking questions at the end. And so, if you submit those through Slido.com with the event code #DOE, we're excited to be able to

answer and talk to them. Okay, and with that, I will pass it over to Billierae. Thank you.

Billierae Engleman: Yeah, thanks, Nina. Hi, everybody. I will keep this very short and sweet. As Nina mentioned, I'm from the Department of Energy, working in our Building Technologies Office. Next slide, please.

We can go one more.

So, yeah, we have a variety of federal resources and support for building performance standards that we launched the last couple of years after we saw some of the leading jurisdictions, such as Washington, D.C., embark on this very ambitious and exciting policy effort with these policies. So, we launched with our colleagues at the Environmental Protection Agency a technical assistance network. And this TA network is specifically for state and local jurisdictions who are pursuing or interested in building performance standards. And so, we help jurisdictions with a variety of different technical and implementation questions and opportunities as part of their process. Here's just a list of some of them. I'll also drop the link that you see on these slides in the chat once I'm done for folks. But if you go to the next slide... and then one more...

In addition to that, especially as I understand it on this call, we have a variety of different actors and stakeholders. And so, it's obviously jurisdictions are a core piece of this policy effort. But there are third-party consultants that are supporting jurisdictions with the adoption and implementation of these efforts. There are building owners and operators that are faced with understanding these regulations that are out there. And so, our team at DOE and others in the federal sphere have put together a ton of different resources on a variety of different topics. These are just a couple of examples. This can also be found on our web page. So, I highly suggest folks check those out. Next page, please – slide.

And then, as you've heard and probably understand at this point, these policies are incredibly data-heavy and can be complex. And so, we recommend the use of different software and data tools that are out there. Department of Energy alongside our colleagues at EPA do have a workflow of different data tools that do work together to be able to collect data, manage data, and sort of track across different portfolios for a variety of different audiences. So, these are just a couple of those.

But if you go to the next slide, here's kind of that workflow that I was mentioning where we really want to move both jurisdictions, building owners, and operators and other actors towards a more integrated cloud-based suite of software. As we've seen, a lot of folks are relying on pretty outdated methods, such as Excel spreadsheets and, as JoAnna mentioned, Outlook email. And so, we definitely recommend folks to seek out these different tools that are available, both from a federally-funded perspective but also third-party tools as well. Next slide.

We've got a couple of specific areas of research and support within our technical assistance and resource development that I just wanted to highlight. So, a big piece of our support is around embedding social equity implementation opportunities into building performance standards. We're not just trying to exempt certain building types from compliance because they might be under-resourced or might have historical considerations, but instead we're trying to suggest or encourage flexibility and adaptation of these policies to meet different building owners' needs in this area and to continue to improve the building stock. So, we help jurisdictions with mapping, who actually lives in their jurisdiction and what kind of buildings are there. We also know that stakeholder engagement is a very key element of these policies, and so we encourage a variety of supports around that.

And then, there's also considerations for equity within staffing and implementation of these agencies that are actually implementing these policies. And so, thinking about how many staff you need, what's your budget, the software infrastructure, like I mentioned, and there's other aspects of this as well. But next slide, please.

And then one area of emerging research, and a few folks have mentioned the importance of this, but utilities are a key actor in this space because these policies rely very heavily on benchmarking data and knowledge about the building energy and emissions use. And so we're doing a ton of research on the different ways that utilities can both be active participants in this policy movement and also the different sort of opportunities and challenges that are present currently with the way that utilities are structured. And so I just wanted to highlight that piece. We expect to have more research in this area coming out towards the end of our fiscal year. Next slide.

And then another big piece, a lot of folks have questions about how are we going to pay for these upgrades? How are we going to meet this compliance if we need to do significant retrofits? And so

we're doing quite a bit of research into different financing and funding vehicles for building owners and operators and other parties in this space, and just sort of highlighting the relevance for building performance standards in specific. So, next slide, please.

And then, there are two federal funding opportunities that I did want to highlight. I'm sure a lot of you on this call have heard of these, but the first is coming out of the Bipartisan Infrastructure Law funding. It's our resilient and efficient codes implementation funding. There have been two rounds of funding where the deadline has already passed for application but there will be future funding rounds announced and those deadlines as well, and so please keep a lookout for that.

If you go to the next slide, you kind of see the different areas of interest for that funding opportunity, one of them being innovative approaches such as building performance standards.

And then if you go to the next slide, the final funding opportunity I wanted to highlight for this area is the Inflation Reduction Act codes provision. And so there's formula funding for updating to the latest building energy codes and then there's also a competitive component.

And if you go to the next slide, states, localities, and territories across the US are eligible to apply for the competitive funding that does include an opportunity to support building performance standards as well. So, you see that these are some of the dates and we can drop the links in the chat as well.

If you go to the next slide, I believe that's it. Here are some links. Again, I'll make sure they're in the chat, but thank you all.

Nina Wuerch:

Thank you so much, Billierae, and thank you to the rest of our speakers. We will transition and use the last remaining time to do a Q&A. So, if you could, yeah, please again submit questions to Slido.com or upvote those that are similar to yours. And the event code is #DOE.

So, the first question that we'll start with is "We benchmark buildings down to 15,000 square feet but people are focused on electrification as the answer. How do we change their focus away from the shiny objects and get them to improve their leaky windows, lack of insulation, and draftiness?" And then, I will bounce this over to our speakers over here. And Michael Miranda, will you kick us off with an answer? Or –?

Michael Miranda: Well, yeah, I mean, I do think efficiency should be the number one priority. Electrification is an important one as well, especially if local stakeholders advocate for it. Thanks.

JoAnna Saunders: Yeah, I would just add also that – save money. You might be leaving money on the table if people don't want to live, work, spend time in buildings that are drafty, don't have good insulation, all these things. So, obviously from a climate perspective efficiency is important, but also from a monetary perspective, these are things that are going to save building owners money.

Nina Wuerch: No, thank you. We have for Seattle Housing Authority, Jennifer, "Can you say more about your strategy, structure, tools to weave energy reduction planning and capital planning together? Was this primarily a reorganization or did the team also expand?"

Jennifer Pritchard: Sure. Yeah. Primarily, it was a reorganization. There is one new role. Yeah. But it's a reorganization in the asset management department. And I mean, I would say that previously the sustainability work and weatherization work, which – to answer from the last question, we have a great partnership with the office of housing. They've had a weatherization program for a long time called HomeWise and we work with them on weatherization. So, that work has been going on for a while but hadn't always been woven together with capital planning. But with the VPS compliance and the work that we need to do around that, it was just more and more important that we are working more closely together.

Nina Wuerch: Thank you. For our next question, "What are the most impactful building owner outreach strategies used by D.C. and Seattle to increase awareness of benchmarking and building performance standards?" We can start with JoAnna for that one.

JoAnna Saunders: Yeah, it's a great question, one we're thinking about all the time, we send a lot of physical mailers because we don't always have good e-mail addresses for people. So, I would say multiple times per year we are sending physical mail to the premise address, the building owner address if they have a registered agent. We do a lot of newsletters, email campaigns. We try and leverage existing relationships with stakeholders. For example, we had a really impactful effort by partnering with an organization called Interfaith Power and Light, which had great inroads to a number of the worship facilities in D.C. and we were able to connect with them and achieve 90 percent compliance for buildings benchmarking for

the first time in that category. So, it can be overwhelming to look at 3,000 buildings that have to submit data to us or engage in BEPS, but I think breaking it down by maybe a building group type or something smaller and then figuring out who are known existing stakeholders, groups that already have an inroads that we can build off of, I think is most effective.

Jennifer Pritchard: Yeah, I would say similar with the city of Seattle and the state of Washington. We attend multiple webinars with the state, which are helpful. And then, in addition to the e-mails with the city of Seattle, just to highlight again the Clean Accelerator Program, which is a learning lab, I think that has been very helpful to Seattle Housing Authority. This is our second time participating in that, just to really be able to ask the questions that we have right now to a technical advisor as we're going through the process of developing our plans.

Nina Wuerch: Thank you so much. That will be our last question. So, yeah, thank you again, everyone, for joining us for this webinar. And we will – this was part of the Better Buildings 2024 summer webinars lineup. As you can see, we have a great collection of presentations every Tuesday for the next two months. Please visit the Better Buildings Solution Center to learn more and register. Next slide, please.

We hope that you will also join us next Tuesday, the 18th, for our webinar titled "Turning Waste into Wealth: Sustainable Food Management Strategies." Join this webinar to learn more from food retailers and producers about the environmental benefits of sustainable food systems and best practices for managing food waste from production and packaging to refrigeration. And then I – last slide, please.

And with that, I'd like to thank our panelists very much for taking the time to be with us today. Please feel free to contact our presenters directly with any additional questions or if we can't get to your question during the Q&A period. And with that, I'd like to encourage you to also follow the Better Buildings Initiative on LinkedIn and X for all the latest news. You can find our handles by their respective icons on the left half of the slide and then you will receive an e-mail notice with today's recording slides and transcript and they are all available on the Better Buildings Solution Center. Thank you again to everyone. Have a great day.

[End of Audio]

Hacking the Code: Building Performance Standard Integration and Implementation

Additional Resources

Learn more about the topics discussed on the webinar by visiting the resources below.

Better Buildings Resources

- DOE Building Performance Standards [website](#)
- DOE BPS [Library](#)
- DOE Technical Assistance for the Adoption of Building Energy Codes [website](#)
- Better Buildings Alliance Benchmarking and Building Performance Standards [Resource](#)

Explore more resources on the [Better Buildings Solution Center](#)

Other Resources

- DC Department of Energy and Environment Building Performance [Helpdesk](#)
- EIA “Less than one-third of U.S. commercial buildings were all-electric in 2018” [article](#)
- Seattle Housing Authority Environmental Stewardship [website](#)
- Seattle Building Emissions Performance Standard Policy [Proposal](#)
- [Seattle Office of Sustainability and Environment Steward Manor Affordable Housing](#)
- Washington State Department of Commerce Clean Buildings Performance Standard Document [Library](#)
- IMT Building Performance Standards: Beyond the Meter [article](#)
- Seattle Clean Buildings Accelerator Self-Led Education [portal](#)

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