Hannah Debelius: – everyone, and welcome to the 2021 Better Buildings, Better Plants Summit. I'm really excited to kick things off here today with our commercial sector meetup, and for the first time, we've actually joined all of our sectors under commercial, which is commercial real estate, health care, hospitality, higher ed, and retail, food service, and grocery. So thank you all so much for joining and I'm really looking forward to having the many industry partners that we have speaking today, and then, of course, some time for Q&A discussion.

So you can go to the next slide, please. You're in the right place if you have come here for the commercial sector meetup, but before we dive in, I do want to go over just a couple of housekeeping items. The first thing is that today's session will be recorded and archived on the Better Buildings Solution Center. So we'll be able to follow up with a recording and slides from today where you can click on links, and revisit, and all that good stuff.

Additionally, today all of our attendees are in listen-only mode, which means that you can't unmute yourself, but stay tuned, because we still have plenty of ways where you can interact with us and our panelists. If you do experience any audio, or video, or visual issues, or tech issues, please just send a message in to the chat window in Zoom, which is in the bottom right. I think probably most folks are familiar with that by now, but put a note in there and we'll get it worked out as soon as we can.

All right, next slide, please. So for those of you who don't know me, my name's Hannah Debelius and I'm a fellow in the Building Technologies Office at the Department of Energy. And normally, I get to work with the commercial real estate and higher education sectors as part of Better Buildings, and I also wear the hats of working with our waste reduction pilot, as well as low-carbon pilot. And I'm joined by two of my colleagues, and I'll let them introduce themselves. So, Cedar.

Cedar Blazek: Thanks, Hannah, and hi, everyone. I'm Cedar Blazek and I am the DOE lead for retail, food service, grocery sectors of Better Buildings.

Hannah Debelius: Thanks, Cedar. Mariana.

M. Egea-Casalduc: Hi, everyone. My name is Mariana Egea-Casalduc. I'm an ORISE Science, Technology, and Policy fellow like Hannah in the commercial building integrations team that is within the Building Technologies Office here at DOE. I am the lead for the Better

Buildings health care sector and I am the new lead for the hospitality sector. So it's a pleasure to meet you all and connect with those that I've already met.

Hannah Debelius: Awesome. Thanks, Mariana. You can go to the next slide.

So we've got a lot to get into today, but before I actually even jump into the agenda, I would first like to a very heartfelt congratulations to two goal achievers within the commercial sector. The University of Nebraska Medical Center is a goal achiever in water this year and Walgreens is a goal achiever in energy. So congratulations. We are excited to see more about our goal achievers in opening plenary just after this, but it's a really amazing and incredible impact, especially considering the last year that we've had, to achieve your goal, so congratulations.

Today, we, of course, are starting with a little bit of welcome and introductions, which we've already gotten into. But then we're actually going to be going into some rapid-fire presentations on four different topics, which are carbon and greenhouse gas accounting; efficiency and resilience; the pandemic and COVID-19, of course; and diversity, equity, and inclusion. And we have a strong mix of DOE staff from industry partners and from Better Buildings partners. So we'll hear a lot of diverse perspectives. And then at the end, you'll have time to interact with all of those speakers and panelists that we have today through a lot of time dedicated to Q&A.

So we'll go to the next slide, please. This is the part I mentioned about still getting to interact with us, which is that this year and today, we're going to be using an interactive platform that's called slido. We'll be using this platform for both Q&A and also some polling questions to engage you all. So right now, if you could open either your mobile device or another browser on your computer and go to www.slido.com, then you're going to enter the event code, DOE, which is here on the screen. And then you'll have the opportunity to choose from a dropdown this session. So this session, again, is called the Commercial Sector Meetup.

So just to review, right now, you should open up your phone or another browser. Go to slido.com. The event code is DOE and then you're going to choose from the dropdown Commercial Sector Meetup. So I'm just gonna give a couple of moments for us all to do that. I know that it can be a lot for a different browser, but this is what we're gonna use for polling and also for Q&A, so if you have it up, then you'll be able to interact with us and our panelists,

and it'll create a much more robust session for you.

Great. And again, if you have any questions, or confusion, or issues, you can use the Zoom chat function to interact with one of our technical assistance people for AV.

I see something in the chat, so I'm hoping our tech assistants can do that. The event code is DOE and then it should be a dropdown and you can find the Commercial Sector Meetup in the dropdown. If you're already in a thing and it looks confusing, on the top left, it will tell you which session you're in, so you might need to reevaluate in the top left and choose Commercial Sector Meetup, again.

All right, well, we are gonna give it a go for those of you that are able to make it into slido, and so if we could please launch our first poll. This is an easy question for you, but it helps you get set up in using slido. Great. So the first question is what sector are you from. So I'll give it a moment for you to tell us about that.

All right, excellent. All right. This is great. We have at least somebody from all of our commercial sectors in Better Buildings, which is awesome. Not surprising, a lot of commercial real estate. Glad to have you on board. Some government staff. I saw higher education down there, health and hospitality. All right, excellent. We are gonna be using this poll at the beginning of each of our four rapid-fire sections, so keep this browser open because we're gonna be doing more polls to launch all of that.

Excellent. Thanks so much. We can go ahead and close the poll and bring up our panelists again, 'cause I'm looking forward to introducing them. And again, one last plug. If you're having AV issues, you can put your question into the chat and we should be able to help you out there.

All right, so these are our wonderful panelists today. We are joined by Alysson Blackwelder, who's the project manager, advocacy and policy at the US Green Building Council; Dean Stanberry, who's the second vice chair of the global board of directors at the International Facilities Management Association; Kara Brooks, who's the sustainability program manager for the American Society for Healthcare Engineering; Kirby Brendsel, who's the assistant vice president, sustainability and ESG at Welltower; Nikitha Radhakrishnan, who's a technical adviser and research engineer at Pacific Northwest National Labs; and Mary Statz, who's the program director for energy management and

sustainability at UW Health. So as you can see, we have a lot of sectors covered and I'm looking forward to diving in with that.

So with that, we are gonna go back and kick off our carbon section, which is our first, with some polls. So if we could bring our first poll back up. Again, you're gonna go to slido.com. The event code is DOE and then you can choose Commercial Sector Meetup. I'm also seeing in the chat that after you put in DOE, there is a join button that you hit before choosing the Commercial Sector Meetup.

And with that, we can go ahead and launch our first poll, which is about carbon. We are wondering if you are tracking carbon or greenhouse gas emissions, what scopes are you covering? And this is one where you can select all that apply. And we know that a majority of our partners are tracking this, and so we're really curious to know if it's just operational or if you're including other scopes such as Scope 3 would include waste, or transportation, and travel, and that sort of thing.

All right, so most people it looks like are tracking Scope 1 and 2, which makes sense, and looking at Scope 2, which is that operational and purchase electricity. All right, so that's interesting. We have about a quarter of people who are tracking it may be at least something, oh, who are not tracking. Could you scroll down for me, Kendall and show me who is tracking Scope 3? Okay, about 18 percent, so maybe a fifth of people then who are tracking Scope 3, which is really interesting, and 15 percentish limited Scope 3. All right, thank you. Well, I hope that resonates with some of you.

We can go to our next poll, which is what emissions tracking or reporting frameworks are you using if you're tracking this? And this is just an open-ended question, so you can let us know, but I know so I'm thinking of a lot of you that a common one is the Greenhouse Gas Protocol. You might be doing it for science-based targets or to report to GRESB. Okay, the Climate Registry, Energy Star. Of course, I know a lot of our partners are using Portfolio Manager not just for energy, but also for greenhouse gas emissions. WRI's Greenhouse Gas Protocol, which I know is a standard for a lot of the other ones, as well.

Yeah, and Measurabl is definitely a common tool that we've been hearing to report to GRESB, and also to report to other frameworks, as well. Energy Watch. That's interesting. I've not heard that one, but interested to learn more. All right, excellent. I'm

seeing a lot of these similar answers. Energy Star, Greenhouse Gas Protocol, GRESB, Energy Star, all rising to the top, which is what we've been hearing.

All right, excellent. Well, as you all can continue to put some answers in there. Oh, that's fine. So thank you so much for sharing that. Before I turn it over to our speakers who are going to share about carbon and greenhouse gas emissions, I did just want to mention two topics that are Better Buildings related within this space. The first is that a lot of you probably know that we've launched a low-carbon pilot and you can see who's joined us in that effort so far in our opening plenary, although I'm looking at our names here and I know a lot of you who have joined the low-carbon pilot are on the phone with us today.

But that pilot has asked partners and Better Buildings to commit two specific existing buildings to pursue low or no-carbon over the next two years. And through that effort, they'll be working directly with us and our technical assistance experts at the lab in order to achieve those goals and to really make tangible progress in carbon reduction. It's not too late to join the low-carbon pilot. If you're interested, you could still join for about another month. You just reach out to your regular Better Buildings contacts, your account manager and sector leads to do that.

And I'm really excited that over the next two years, we'll also have the opportunity to package and share a lot of those solutions that are coming out of the low-carbon pilot in all the usual ways that you come to Better Buildings for, whether that's through webinars, or solutions, and showcase projects, and that sort of thing.

I also want to throw out there that with this low-carbon pilot and knowing that so many of our partners are already tracking their greenhouse gas emissions, and that we just saw tracking a lot of operational emissions, and using all these different frameworks. This is also something that Better Buildings is exploring right now and we're interested to hear from partners what your experience is in tracking greenhouse gas emissions and if you were to join at the portfolio level of Better Buildings something in regards to a carbon commitment what that might look like.

So we're interested in having those conversations with you. Again, you can reach out to your Better Buildings contact, or if you've not joined Better Buildings yet and you are tracking carbon or thinking about it, it can be a great time to join. And all of our contact information will be available on the last slide of this presentation,

which will, again, be on the Better Buildings Solution Center, so you can reach out to us to have those conversations.

So with that, I'm excited to turn it over to our first rapid-fire panelist here. I'll be joined by Alysson Blackwelder, from the US Green Building Council. Alysson serves as the project manager on the advocacy and policy team of the US Green Building Council. In this role, she advocates for federal, state, and local-level policies that are supportive of USGBC tools, including LEED, as well as enhanced resilience, efficiency, and sustainability of the built environment, in general. And USGBC is one of our Better Buildings affiliates. So thanks so much, and Alysson, please share with us on the topic of carbon and greenhouse gas emissions.

A. Blackwelder: Yes, thank you, Hannah. Again, my name is Alysson Blackwelder, and I'm part of the advocacy team at the US Green Building Council. Today, I'm going to discuss USGBC's newest certification program, LEED Zero. We'll explore the critical role of data in helping business owners establish and track progress across net zero goals and discuss how third party certification provides credibility to net zero claims. I'll speak a little bit about Arc, our global benchmarking and reporting platform for buildings and portfolios, and LEED Zero, and how they can be leveraged as tools for sustainable market transformation.

At USGBC, our goal is to transform the buildings industry to enable a healthy and prosperous future for all. We know that better buildings equal better lives. Our most successful tool for market transformation is the LEED green building rating system, which many of you have heard of, which has certifications for new building projects, interior tenant design and construction, and existing buildings operation or maintenance. The buildings and buildings construction sectors combined are responsible for over one-third of global final energy consumption and nearly 40 percent of total direct and indirect CO2 emissions. The building industry has an opportunity and a responsibility to reduce its resource use and advance sustainable regenerative communities.

As we've been tracking data on the global building sector, especially since the Paris Agreement, we see that buildings are not where they need to be, not yet on a path to reduced warning scenarios. On the positive side, the energy use intensity of buildings continues to come down by about 1.5 percent per year. But energy demand from buildings and building construction continues to rise, driven by improved access to energy in developing countries, greater ownership and use of energy-

consuming devices, and rapid growth in global buildings' floor area.

So we've seen a huge jump in that zero pledges over the last five years, but without a clear understanding of where actors are starting out and detailed implementation plans for getting to zero, it can be difficult to determine the real ambition and impact of net zero pledges.

So important things to remember coming from there are transparency enables accountability and positive pressure to translate targets to ambitious action. Data tracking is critical for the real estate sector to define baseline performance, set targets, and report on progress. And third-party certification programs such as LEED can help real estate owners easily communicate their buildings' performance in lend credibility to net zero claims.

So LEED Zero. USGBC launched LEED Zero in 2018. LEED rating systems focus on holistic sustainability performance and provide a foundation for teams to design for and operate high-performing green buildings. LEED Zero builds on a holistic LEED ND or EB certification by recognizing buildings operating at net zero. The program aims to inspire action and greater achievement of net zero goals during building operations. We are offering four distinct net zero certifications, LEED Zero Energy, LEED Zero Water, LEED Zero Waste, and LEED Zero Carbon, which we're focusing on today.

Each certification verifies achievement of net zero goals over the last 12 months of building operation. LEED Zero Carbon recognizes buildings operating with a net zero carbon emissions over the course of the past year. LEED Zero Carbon addresses the balance of carbon emitted from energy consumption and occupant transportation to carbon emissions avoided or offset. Carbon emitted is a result of energy and transportation, and occupant transportation can be responsible for as much as operational carbon emissions as building energy use and sub projects. So it's important to recognize that source of Spoke 3 emissions in the program.

Carbon avoided can include onsite renewable energy generation, offsite renewable energy procurement, and if necessary, the purchase of carbon credits. Our LEED Zero program guide is now available on our LEED Zero website and it explains how projects should prepare to achieve certification and provides a breakdown of the LEED Zero Carbon balance, LEED Zero Energy balance, and LEED Zero Water balance.

For all certifications, projects enter resource consumption data in the Arc platform. Arc is a sustainability performance platform that all projects can use to benchmark their consumption of resources and track improvements over time. Arc is free and available to all projects and LEED projects use Arc to report their performance data. As a developer of a global green building certification program and as a real estate professional, it's difficult for USGBC to overstate the importance of robust and accurate data in helping ensuring a net zero carbon future.

Legislative landscapes and technological advancements vary across regions, but data or numbers is a global language that can transcend boundaries and language barriers. Cities, states, and countries need data in order to report a nationally-determined emission targets and verify performance claims. The Arc platform enables buildings to track resource consumption across a portfolio of buildings, having a centralized repository for building portfolio data gives owners and operators the information needed to benchmark the performance of each asset.

So LEED Zero, again, we have about 20 LEED Zero-certified projects, at this time, and more than 20 additional projects registered. The first LEED Zero Carbon building is the LEED O+M platinum-certified Hanergy Renewable Energy Center project in China. This is an all-solar, green building, featuring Hanergy's own thin-film solar modules on the top, insides of the building, and hand brick on the walkway. We don't have any slides for this particular part of the presentation, but I can follow up if you have any specific questions about these projects I'm speaking about. But I just wanted to give you a mental picture.

So another exemplary project I should mention is the Colgate-Palmolive facility in Burlington, New Jersey. It's the first project in the world to receive LEED net zero certification in all four categories, carbon, energy, water, and waste. To accomplish this, they demonstrated net zero carbon emissions from energy consumption and occupant transportation either avoided or offset as source energy balance of zero and a potable water use balance of zero all over a period of 12 months. Additionally, they had to earn true zero waste certification at the platinum level, and all of this is in addition to their LEED Silver certification.

So three key messages to remember. This is takeaways from LEED Zero here. Net zero goals help inspire action and greater achievement. Data reporting and tracking underpins all robust

implementation plans and credible net zero claims. And third-party verification of performance helps real estate owners and asset managers make claims about performance and showcases leadership.

And that's all for me today and I look forward to your questions. Thanks.

Hannah Debelius: Awesome. Thanks so much, Alysson. And just as a reminder for everyone, you can use the Q&A in slido any time, and you can both input questions in there and also you can click the little like button on it, it's the thumbs up, and that'll move questions that you like up to the top for our panelists. And we'll have plenty of time for Q&A at the end, so just a reminder. Any time, you can put a question there.

With that, I'm excited to introduce Mary Statz, who leads energy management and sustainability at the UW Health System, which serves more than 600,000 patients each year throughout the Midwest region. In her position, Mary is responsible for the corporate vision and strategy to make UW Health a more environmentally friendly enterprise.

So, Mary, please take it away.

Mary Evers Statz: Thank you. Can you hear me, okay?

Hannah Debelius: Sure can.

Mary Evers Statz: Okay, great. So thank you for having me. So Hannah just gave you a little bit of background on UW Health. UW Health is governed by the UW Hospital and Clinics Authority Board and we partner with the University of Wisconsin School of Medicine and Public Health, the School of Nursing and Pharmacies, to fulfill our mission of advancing health without compromise.

Every major medical and health association in the United States has declared climate change a public health emergency, including the American Medical Association, American Academy of Pediatrics, and the American Health Association. So our goal is for UW Health, the UW Madison School of Medicine and Public Health, the UW Madison School of Nursing, and the UW Madison School of Pharmacy, to acknowledge that climate change is a public health emergency and collectively commit to achieving net zero carbon emissions.

We are currently in the process of developing a net zero plan across all three scopes. We have collaborated with our partners in the UW Medicine Sustainability Department since the academic pieces really fall under their purview. We have met with the dean for the School of Medicine and Public Health, who chairs UW Health's board of directors and we presented our case to him. We have his full support and the support of his leadership team, and we're in the process of scheduling meetings with the deans of the School of Nursing and the Schools of Pharmacy for their input.

Since this is a public health issue, we think it's important for our health sciences partners to be aligned with us on this goal. Once we have our health sciences partners on board, we will present this to our CEO, and in the meantime, we have been meeting with our vice president of population health and our vice president of facilities and support services for their advice on our strategy as we get ready for our CEO presentation in the coming months.

Healthcare has really been a leader throughout the COVID-19 pandemic, and as we are emerging from this public health crisis, I believe we can be leaders on the climate change crisis by addressing our own significant climate footprint and climate impacts. Thank you.

Hannah Debelius: Great. Thank you so much, Mary. That's really interesting about I don't have the benefit, of course, of working as closely with health care as my colleague, Mariana, and that's a really interesting connection between the public health emergency and climate change. That seems very relevant.

So thank you so much to Mary and Alysson, to both of you. As a reminder, you can use slido for Q&A at any time and then up vote the questions that are most interesting to you. And with that, I will turn it over to my colleague, Cedar, to address efficiency and resilience.

Cedar Blazek: Great. Thanks so much, Hannah. To kick off this topic, we are gonna launch a poll and get some feedback from you all, from everyone, regarding the efficiency resilience nexus. So if you haven't already, go to slido.com, enter the code DOE and select the Commercial Sector Meetup from the dropdown menu on the top right. In one to two words, what projects or themes are you exploring at the efficiency resilience nexus? We would love to hear from you. Hopefully, the answer is not nothing, but I'm curious to see what you all are working on.

Updating floodplain guidance, interesting. Lots of solar and storage. Micro grid solar batteries, some electrification in there. Great, more PV. All right, so some themes emerging, you can see the ones that are typed in the most are definitely focused on solar, PV, as well as micro grids, and storage, having backup power. For me, that's really at the crux of efficiency, and resiliency, and how these concepts all tie in.

All right, we'll let you keep adding your words in there, but I'm gonna go ahead and jump into this overview, and thank you for participating in our polls. It's really helpful.

So sustainability, energy efficiency, and resilience all play a critical role in ensuring today's businesses and buildings meet the needs of both customers and employees. Incorporating resilient building design and infrastructure greatly influences an organization's ability to anticipate, absorb, adapt to, and rapidly recover from disruptive events. Types of disruptive events may include extreme weather events, such as hurricanes, fires, or floods, as well as power outages at the building or grid level. As disruptive events become more frequent due to the pressures of global climate change, companies that own and operate buildings need to be prepared to adapt and respond all while limiting the impact on business operations.

We're seeing a number of organizations in the commercial sector prioritize resilience in their operations and risk management planning. I'd like to highlight a few key examples of resilience leadership that we've seen in the commercial sector. Health care organizations, as Mary mentioned, provide essential patient services and often need to ensure that their facilities and equipment can run uninterrupted regardless of external factors. We're seeing a growing investment in micro grids and renewable energy systems for health care facilities.

Kaiser Permanente pioneered California's first medical center micro grid at the Richmond Medical Center. This micro grid provides sustainable emergency power to critical systems in the event of a widespread outage. Additionally, Kaiser's medical office building in Santa Rosa, California became the first health care facility in the United States to achieve net zero status by combining energy-efficient technologies like electric heat pumps and electric chromic windows with onsite renewable power.

Climate change also presents a financial risk to the global economy. A number of commercial real estate investors have

begun incorporating resilience into their risk mitigation strategies. This year, LBA Realty and CBRE shared strategies for developing climate risk assessments as part of our Better Buildings webinar series, which is available online. LBA Realty was able to generate property level resilience plans to respond to their identified risks. Some retail companies provide food and essential services to communities during a prolonged power outage or extreme weather events.

As an essential business, Walgreens remained fully operational throughout the pandemic and continued improving the energy efficiency of its facilities. This year, they achieved their Better Buildings challenge goal of 20 percent energy use intensity reduction across their stores. Another retailer, Kohl's, worked with the National Renewable Energy Lab to complete a grid interactive efficient building value potential analysis to identify opportunities across its portfolio that could achieve deeper carbon emissions reductions, additional cost savings, and improved building resiliency.

Over 400 higher education institutions have formally committed to reducing carbon emissions and many recognize that onsite renewable energy is a key strategy to meet these goals with the added benefit of engaging students. Some institutions are also pursuing micro grids with the ability to island, establishing a more resilient power supply to serve their students, faculty, and staff.

Hospitality faced a challenging year, with record low occupancy rates across the US. Loews Hotels and Co. was able to creatively identify opportunities to cut back on energy, water, and gas consumption during periods of lower occupancy. These flexible operational changes during these periods managed to save Loews roughly seven million dollars in energy costs without any impact on their guest experience.

Better Buildings is committed to supporting commercial partners in their resilience efforts. The US Department of Energy brought together a roundtable of Better Buildings partners, allies, and stakeholders to foster collaboration and guidance on emerging resilience issues. The main outcome of this work is the Resilience Roadmap. It's a set of resources and case studies that are designed to help commercial building owners develop a plan for measuring, managing, and mitigating resilience risk. I encourage you all to explore this resilience roadmap on the Better Buildings Solutions Center.

And now I'll hand things over to my colleague, Mariana Egea-Casalduc, to discuss the impacts of the global pandemic on commercial building energy programs.

M. Egea-Casalduc: Thanks, Cedar. Before we dive into the topic of pandemic preparedness and COVID-19, we're going to quickly launch another poll to kick off our conversation. So attendees, if you haven't already, please go to slido.com and enter the event code #DOE and select the Commercial Sector Meetup from the dropdown menu on the top right.

So here's our first poll. How will building operations change in the long term? Definitely one of the biggest questions of the moment, many looking to find the correct answer. More automated buildings, more data, definitely more data, remote working, AI. Smarter, more grid-interactive buildings. Automation control systems, tenant engagement. Rental building owners will be interested in selling energy. IoT devices, smart grid, new patterns of occupancy, flood space, more automation, indoor air quality. Definitely really important, indoor air quality and HVAC. Better trained operators, big data, new thermal products. It's all great. Thank you so much.

Automated systems, yes. Smart systems, more as a service, more energy efficiency as a service. Like I mentioned, IAQ and HVAC, real-time data, improved awareness. Owner operators will focus on smaller buildings. Yes, smaller buildings are definitely a big focus for us moving forward, as well. Advanced asset management. Optimization for storage and micro grid, and edge computing, okay. Wonderful.

Awesome. You're all welcome to continue to input all of those amazing comments. We can definitely see that on the back end and that's super helpful for us to know what you guys want to see moving forward, as well.

So I'm going to be talking a little bit about what Better Buildings has done to support our partners during this very difficult time. So in order to overcome many of the challenges associated with pandemic preparedness and response, our team launched the Better Buildings COVID-19 Resource Center, which can be found on the Better Buildings Solution Center. Here, partners can learn from the experts with resources from ASHRAE, EPA, DOE, and more, as well as view resources by technology type, watch webinars, or register for upcoming virtual learning opportunities with us and industry experts.

In addition to this, our team also launched the Building Operations During COVID-19 webinar series. We've had national laboratory scientists, IAQ experts, and building operators join our monthly installments of this webinar series and speak to a wide variety of topics, such as HVAC best practices. We had a conversation about how HVAC guidance has changed and evolved since the start of the pandemic. We know that was a big issue for many. We also talked about the energy implications of major COVID-19 risk mitigation strategies and also how to best navigate air purification technologies.

Through our check-ins and conversations with partners, as well as through informal polling through interactions like these and informal polling through this monthly webinar series, we've learned that some of the common barriers to addressing COVID-19 and reoccupying buildings for many of our partners and others across in other sectors include insufficient knowledge and guidance on pandemic preparedness and response, shifting and changing guidance on pandemic preparedness and response, insufficient trained staff to adjust building operations, and of course, the cost to implement HVAC upgrades and IAQ measures.

We've also learned that the most commonly adopted COVID-19 mitigation strategies adopted by individuals that have interacted with us and our partners include promoting social distancing and face coverings, increasing outdoor air ventilation rates, increasing filter ratings in HVAC systems, mostly upgrading to MERV 13 filters, and installing additional or portable filtration and ventilation equipment. That being said, the beauty of Better Buildings is that our inboxes are always open. So if there's a specific topic or technology any of you would like for us to have an expert address on this webinar series as you all begin to reopen your buildings safely, please let us know and we'll make sure to include that.

David Landman, from the Lawrence Berkeley National Laboratories Building Technologies and Urban Systems Division, will be joining us on Monday, June 21st, from 1:00 to 2:00 PM Eastern time, to discuss how to best monitor healthy buildings using energy management information systems, also known as EMIS by their acronym, and identify issues with ventilation, air quality, and thermal health. So keep an eye out for June's Better Buildings newsletter or visit the Better Buildings COVID-19 Resource Center to register for that installment. This has been an incredibly difficult year for all of our partners and we very much

appreciate all of the time that they take out of their busy schedules to engage with us and help us make Better Buildings a more useful and helpful experience for them.

So next up, we have Dean Stanberry, who's going to be talking about this topic. Dean Stanberry is a solutions-oriented facility professional with over 25 years of broad-based experience in facilities management, real estate portfolio management, process and quality improvement, procurement, sustainability, information systems implementation, and critical environment operations.

So, Dean, take it away.

Dean Stanberry: Thank you, Mariana. Am I on the screen? Can you hear me?

M. Egea-Casalduc: Sure can.

Dean Stanberry: Okay, thank you. All right. As mentioned, I'm actually the second vice chair of IFMA'S global board of directors. So IFMA is the International Facility Management Association, so it's a professional association for facility managers. We have about 23,000 members, 112 countries, and those members represent about 78 billion square feet of building space and about $526 billion of annual spending. So it's a fairly influential group of people.

One of the things that happened when COVID first came about, you may remember, they were trying to identify who were the essential workers, and initially, the facility managers were not in that group and we do have some people in Washington that helped advise legislators that this was a group of people that were basically keeping those buildings not only open but functioning. I do have a day job. I work as a contractor for the General Services Administration, and so I was able to see some of that in action because not all of the federal agencies went to work from home, not all of them can. So there's some of them that operate service centers and those are things that they've not really moved into a work from home scenario yet.

So many of the buildings that are managed by the General Service Administration had to support people in those buildings, and in the meantime, they still needed to maintain those buildings. They still needed to do the maintenance work on them to make sure that they were safe and secure, the cleaning, the extra cleaning was being done. So there was a lot that went on there. There was some other things that were related that were unique to COVID, so looking at

indoor air changes, and how we had to change programming, and things like that.

Many buildings have been somewhat idle for some period of time, so as we get ready to start moving people back and they're looking at the water flushing requirements to make sure that the water systems are clean, and healthy, and don't have any contaminants or things that have been built up in there. So there was a lot of things that that happened over that period.

One of the things that IFMA did in 2020, is we undertook a study. It was actually a Delphi study and we called it the experts assessment, but a Delphi study essentially brings together subject matter experts from a variety of disciplines to talk about a particular topic, and what we were looking at is not the immediate return to work but how will the pandemic change the workplace over a period of time. And that's what we were hoping to get some insights on. And we had about 250 subject matter experts from around the world, multiple disciplines, not only design, construction, facilities, real estate, HR, IT, a variety of disciplines weighing in on those topics.

The subsequent report is available. If you go to IFMA.org, you can look for the knowledge library and it is available. We also have a pandemic response center that was put in place by our IFMA staff. So they were also collecting, as Mariana mentioned, collecting any information, viable information as well vetted as we could get in a short period of time, and making it available to our members so that they could actually respond in real time to problems that are occurring every day.

Back to the Delphi study, that had some interesting results that came out of it, and as a result of that, we've actually been doing some webinars, pandemic response series. We've actually got six recorded already. We've got another one scheduled I believe next week. So if you're interested in that again, go to the IFMA.org website and go to the knowledge center, knowledge library, or search for it on YouTube and just look for the IFMA subscription on YouTube.

I've participated and actually hosted a couple of those webinars and one of them was about the effect that the pandemic return to work will have on sustainability of buildings and projects. There's a lot of speculation that the commercial occupancy will be reduced and I believe that it will maybe in the short term, maybe in the long term. We don't really know yet, but there will be a reduction in

commercial occupancy.

So some tenants will be looking to reduce the amount of space they have or consolidate into fewer spaces, and some of the speculation is that some buildings that may be hadn't been looked at for sustainability upgrades will be looked at now. So that since they have fewer buildings to manage, that the ones that remain will get some of that money available to them.

So again, we have people on site every day. They never really left. They were wearing the masks every day. I just read today that the federal government is going to start allowing vaccinated people to remove their masks, so it looks like we're starting to come out of the darkness and back into the light. For those that are interested, I'm also a bit of a climate activist, and as we know, the climate crisis did not go away during COVID. It's been laying there kind of waiting for us to come back. So we'll have another thing to discuss for the next Better Buildings Summit on what are we doing about the climate crisis.

Thank you, Marianna.

M. Egea-Casalduc: Wonderful. Up next, we have Kara Brooks. Kara Brooks is a sustainability program manager for the American Society for Healthcare Engineering, also known as ASHE, A-S-H-E, a professional membership group of the American Hospital Association. Kara Brooks manages the sustainability programs and goals for the association, including the Energy to Care program. Kara has nearly 20 years of experience in energy engineering providing professional services and program management.

So Kara, if you're ready, feel free to take it away.

Kara Brooks: Awesome. Thank you, Mariana, and thank you all for having me here and to join the panel today. I'm excited to really be a part of the panel and to discuss some of the things that we're seeing out there in terms of how buildings will change long term. When the polling question came out, I took notes about really the big trends of what people are saying. Some of those included smart building technologies, automation, and data driven. But the one piece that Mariana brought up that I think is going to be a key factor comes with the HVAC systems, and in particular, with ventilation.

We've seen through the pandemic how this has really come to the forefront and that it has come to the forefront for both health care buildings and all sorts of other commercial buildings. For health

care facilities, all of our guidance is based around the ASHE ASHRAE Standard 170. For other types of buildings, it's 62.1. That's great guidance, but we've seen this growing interest in the building ventilation and the effects on controlling infection. And what one thing that the Mariana also brought up was that people automatically saw that there was an insufficient guidance on pandemic response for different types of buildings.

So I wanted to kind of go through a little project that we're working on right now and that is to come up with guidance for this type of work. So the CDC is working with a number of different partners around the country, including universities and associations, on a project called Project First Line. And the intent of the project is to create guidance around infection control that would provide training for over six million frontline health care workers. ASHE is a partner on that project and we're developing guidance around ventilation. The guidance that we're working on is actually geared toward a number of different audiences, everything from the clinician who may or may not be in a health care facility, the technician or the facility manager within a commercial building, or even the facility director for a hospital.

So as a partner, we are developing the guidance to really hopefully help in the next pandemic with having that guidance and understanding what to do. The guidance that we're creating with the CDC is really looks at the how for one thing, which is how to convert a space and even what questions need to be asked. If I'm a clinician and if I am the pediatrician in a downtown commercial building in Chicago, what do I need to ask in order to work with patients in my space who could potentially be COVID-positive or other types of infectious disease. And then, also, what types of spaces even need to be converted? Do we need to convert to negative air pressure, things like that.

The other thing that we're looking at is the why, and that provides the background on why we're doing, and developing, and helping develop the understanding around that effort. It could obviously include things like in for medical office space, commercial buildings, questions a provider might ask a facility technician, or the facility manager, or building engineer in a large building. And it's important to know that as we move forward and we start to look at this guidance, that we really weigh how practicality and science, the science of infection control, work together.

As an example, does it make sense to put a HEPA machine in an elementary school classroom? Well, we heard early on that

ventilation was going to be the thing, negative pressure, but that's not really a practical use for that because it can be very noisy, and you have a teacher trying to speak over a machine, and you have kids trying to learn in that atmosphere. So I think as we move forward, we really need to look at what makes sense with the science of ventilation rates and evacuating infection, and also, how does that tie into energy efficiency.

Obviously, if you're ventilating spaces more, the conditioning that is required to keep the spaces comfortable could increase energy use. A lot of questions have come in about did we see that early on. We didn't necessarily because many hospitals had really evacuated a lot of their normal patients and normal patient flow, but it is a big question and I think the trend was, yes, we did see energy use go up.

We also need to really weigh against the goals toward decarbonization of buildings and our reliance on fossil fuels for thermal loads. And I know the labs are working on this. I know CDC has a variety of projects where just looking at what that ventilation is, how that affects these systems, and really growing our standards and codes, and having them completely based on science.

So I really think that I've seen it, I've heard it, that ventilation is definitely a key factor. I'm excited to say we're working with the CDC on guidance around that, but it is something to keep in mind, especially as we look at departments and programs. So, thanks, Mariana.

M. Egea-Casalduc: Wonderful. Thank you so much, Kara. I see a lot of questions in the chat about the resources. Just know that after we wrap up this like conversational and discussion portion, you're going to see a list of all of the links that you need to check out in order to learn more about everything that we're talking about here today.

So now I'm going to guide us into the diversity, equity, and inclusion discussion for today. So in order to do that, I'm going to launch a poll and request feedback from everyone regarding this topic. So attendees, again, if you haven't already, please go to slido.com, and enter the code #DOE, and select Commercial Sector Meetup from the dropdown menu on the top right.

So here is our first poll. What is the focus of your organization's internal or external DEI efforts? We know that some people hyper focus on certain areas, so we want to know what those are. So right

now, we have 60 percent reporting that they're – 54 percent, reporting that they're really focusing on workforce development. We have long-term strategic planning. That just came up to the top. We have, "My organization is not pursuing DEI." We have workplace safety. These are moving very rapidly, but thank you, again, for your participation.

Okay, so first, we have workforce development. Then we have long-term strategic planning, workplace safety, and DEI training at 34 percent. Organization's mission, 29 percent. Can we scroll down? Community engagement and outreach at 24 percent. Stakeholder engagement and outreach at 23 percent. Awesome.

Thank you all so much. This is very helpful for us. Can we scroll back to the top, see if anything's changed? No, workforce development is still number one, and I know that for us here at DOE, workforce development is a huge focus moving forward, so thank you all for sharing your thoughts and interacting with us through slido.

So I think now I can introduce our first speaker. So starting off this very important conversation is Nikitha Radhakrishnan. Nikitha is a technical advisor for the building technologies office at the US Department of Energy and a research engineer at the Pacific Northwest National Laboratory where she is on loan to BTO. She is also the diversity, equity, and inclusion lead for BTO and helps with improving the diversity of BTO's research partner base.

So, Nikitha Radhakrishnan, if you're ready, please feel free to take that away.

N. Radhakrishnan: Thanks, Mariana. Yeah, so I am a research engineer. I work with building automation, building energy management systems at Pacific Northwest National Lab, and right now, on loan to BTO, but today here, I'm in my capacity as the DEI lead for BTO this year, and I'll tell you a little bit about what that means. So we heard about all the enormous energy challenges we have for the 125 million buildings we have in the US and it is hard to achieve our goals as it is. And at BTO, we recognize that we can't do it unless we are inclusive of the views, backgrounds, and expertise of very diverse set of players.

So a couple of years ago, we started asking new questions at the office. We asked questions like who's not represented at the table for everything that BTO does, be it research projects or any event we host. What is the gender breakdown of our participants? Who

are we partnering with year after year? Who else could we partner with and where should we be present so that others know we exist and want to collaborate?

So we started asking these questions, talking to a ton of internal and external folks and having honest conversations around representation. And this led to the formation of a DEI working group for the office and this constituted of folks who were particularly interested in spending some time on these issues at the office. The working group came up with a DEI strategic plan for BTO and I saw in the poll that a lot of people were interested in long-term strategic plans.

So the plan lays out a few milestones and activities to be tracked by the office. So, for example, the first thing on there is the need for a DEI lead, someone who is required to carry out the rest of the activities of the strategic plan, and that's where I come in. I'm the DEI lead for BTO this year and I'm required to spend a fixed amount of hours on DEI activities for the office. As part of this effort, we are also participating in a ton of minority student-focused internships and fellowships to bring in diverse voices into the office, and a couple of examples for that, the Minorities Educational Institution Student Partnership Program.

By being a part of this program, we are able to host minority students for a ten-week summer internship at BTO. From this year onwards, we are also part of the gem fellowship in collaboration with the National Renewable Energy Lab and that program recruits high quality underrepresented students to pursue masters and doctoral degrees in STEM and they get paid summer internships with BTO. So it's a win-win.

From last year, we have entered into a new partnership initiative with the MSIRDC so that stands for Minority Serving Institution, MSI, Research and Development Consortium. So the agreement is basically a unique funding vehicle that allows MSI's to directly negotiate research awards with DOE, and this way, we get to form new working relationships with faculty at these institutions and bring their diverse voices in.

So those are a few of the external-facing activities. Then there are a few purely internal activities around DEI, too. We are doing training and having regular discussion on DEI topics so that we are always thinking about these opportunities. We are looking more closely at our hiring processes and expanding outreach for them through alumni networks or any other services that DOE can

leverage. We're also incorporating DEI considerations in individual staff work plans. So we assist individual staff members to consider DEI when they're setting goals and milestones for their programs for the year.

And of course, we'll be tracking everything we're doing. We'll be taking a strategic plan, reassessing at the end of each year, and setting new goals for ourselves for the following year. And the hope is that we see our metrics improving the diversity of the office and the stakeholders improve with it, and with that comes a better understanding of technology challenges and market barriers that leads to better innovation and creativity for building energy efficiency for the products, better homes, better buildings across all market demographics for a clean energy future, and that's our goal. That's it for me on DEI.

M. Egea-Casalduc: Thank you so much, Nikitha, for giving us all of that incredible information.

So now I am going to pass things on to Kirby Brendsel, Kirby Brendsel leads Welltower's strategic sustainability, environmental, social, and governance initiatives, also known as ESG initiatives. Welltower Inc. is a real estate investment trust. Previously, Mr. Brendsel consulted for Deloitte, where he assisted in the creation of Deloitte's federal sustainability practice and diversity and inclusion program. Mr. Brendsel's other past roles include active duty service as a military intelligence corps major in the US Army.

So, Kirby, please feel free to take it away.

Kirby Brendsel: Thanks. I appreciate it, Marianna, and thank you to the DOE Better Buildings for having us here today, really appreciate it. So building off of what Nikitha said, just wanted to share a little bit about our journey around justice, equity, diversity, and inclusion, and give some thoughts around how you set it up from a strategics perspective.

So thinking strategically, thinking about how do you start this within your organization, it's best done by kind of starting at the beginning and doing an all-inclusive organizational strategy. So that really addresses things like a challenge, like your challenge on making connections and building a sense of community within a complex organization, like many of ours are, severely matrix, one of those types of things. This really allows you to best represent organizations and employees based regardless of factors such as the size, or the composition, or other things along those lines for

the organization.

But an approach, really thinking about how you could do this, really starts with expanding your networks really beyond offices, functions, teams, et cetera, very similar to what Nikitha was talking about, how you tried to build those up just not siloed into any one area. You really try to connect people of different interests, of similar backgrounds, to try and see how they can kind of go from there, and then you really work to enable everyone within the organization to establish communities that represent their backgrounds, their interests, as well as allowing anyone, and that's anyone within the organization, to really kind of contribute and share. That's what you want to work for.

Now, I mean, how is this really the strategy kind of made concrete within an organization? So bottom line, just the one kind of key takeaway or one kind of thing to really think about when you're thinking on this is it takes multiple resources, departments, and tools to really make it happen. One of my favorite resources and one of the ones that we've looked at before in terms of how we come up with this is Deborah Plummer came up with what I believe is one of the best illustrations of this and it's called Going Plaid, and it's integrating diversity into a business strategy, structures, and systems. And really how she does this, it's almost I wish I could show you the slides. It's a little tough on this. It's horizontal and vertical, so it kind of looks like a plaid.

But in looking at this, you take ideas and considerations from multiple fronts to bring everything together. So, for example, on the horizontal, you think about things like talent acquisition, talent management, contemporary work design, leadership performance, globalization, and balance it with HR, operations, education, and business development. And then on the verticals, you really kind of take the intersection with aspects like employee resource groups, business resource groups, employee network groups, whatever you'd like to call them, affinity networks, diversity recruitment strategies. And while we may be more familiar with kind of the horizontals that have been deployed here, those are the ones we've had in the past, the verticals are newer but they're really kind of rising in the forefront, and that's really what we'd like to endeavor to share a little bit more about.

Just remember, the biggest key take away from that is that it takes much, and much, much work working together to build a robust D&I structure and strategy. But so what might that look like? What does it look like within an organization? I think Nikitha's is a

perfect example of that, as well, but really in thinking about how this looks in practice, I'll share a little bit in terms of examples of what we've done at Welltower to support our solid foundation on diversity and inclusion, which includes things like we've started, over the past 18 months, we went from one employee network group to where now we have over nine.

And so these are things like our core, our women's network, which was the first one, and it was kind of the stepping stone or the cornerstone to really kind of allow us to build further. And we've added to those employee network groups from there with things like African American, Hispanic, LGBTQI-plus, veterans, and young professionals. And just to show that all of these are open to all of our employees, I'm even a part of our young professionals network, so they're open and inclusive to everyone within the organization.

We've done things like training programs, so really kind of working to do things around like unconscious bias training and civil and respectful treatment. We've done things like recruiting, so making sure that we've expanded recruiting to include historically black colleges and universities, to make sure that we have a diverse state of candidates, really reviewing things along those lines. We've had extensive work on partnerships, so these are things working with national organizations and partners to really kind of discuss things around equity, diversity, and inclusion, and ways in which we might continue to evolve.

And then just that huge internal espousal of diversity, so things like making sure that our leadership and our senior leaders really kind of are looking like and reflecting and we're practicing what we're preaching as far as diversity. But we continue to build in terms of how we look at equity, diversity, inclusion all the time. So these include things like we've recently worked to launch our Foundation 2.0, so the Welltower Foundation, to have a focus that has been much more myopic around equity, diversity, inclusion, and has been employee-based, so what are the things that our employees want to focus on around this topic and where can we match their monies from the foundation.

And that's really it. Just once again, thanks for having me here today. Looking forward to the questions, and as anything comes up, please feel free to type it in the chat, and look forward to discussing further. Thank you very much.

Hannah Debelius: Wonderful. Thank you so much, Kirby, and also to all of our panelists and speakers. I really appreciate your willingness to try out this new format with us, which was, as you all could tell, without slides, and just working on that, and sharing your quick different perspectives on some of the trends that we've seen really rise to the top this year.

For the next 20 minutes, we're going to be moving into our Q&A session, so it's not too late to submit questions for any of our panelists there. And again, you can also click the like button, which is a thumbs up, to move things to the top of the list. So thank you so much for bringing those up. And actually, if all of our panelists, if you haven't already, could turn on your cameras, as well as my DOE colleagues, that would be wonderful, so we can see your faces.

The first question I think I'm actually going to direct to my DOE colleague, Cedar, which is that someone is very interested in the best ways to upgrade or retrofit a commercial building for grid interactivity. Cedar?

Cedar Blazek: Thanks. I think that's a great question and a really key resilient strategy when we're talking about the efficiency resilience nexus. I would strongly encourage all of you to attend our roundtable discussion later this afternoon on building decarbonization. I think grid interactivity is going to be a huge role in that and I will say there will be an announcement this afternoon about the publication of a document that I think is going to be incredibly helpful.

It's a grid interactive efficient buildings roadmap, and in that document, you'll be able to find guides around commercially available grid interactive technologies including smart thermostats, smart connected water heaters, and automated window shading attachments, as well as other technologies that might have limited availability are available in pilot forms such as dynamic glazing, advanced controls for lighting, and HVAC integrated with thermal energy storage. So please attend that session and keep an eye out for that publication.

Hannah Debelius: Awesome. Thanks so much, Cedar.

Do any of our panelists by any chance want to weigh in on that before I move to the next question? I told everyone they'd have the opportunity. Great.

Wonderful. The next question is what trends in commercial

buildings that came up as part of the pandemic are here to stay versus a temporary change? So maybe I'll open up first to one of our panelists, either Dean or Kara, who spoke about the pandemic, but I really think anyone on our panel could also jump in after them to talk about this.

Dean Stanberry: Well, Hannah, I do have one thought. So prior to the pandemic, most commercial buildings, if they had a business continuity, disaster recovery, or pandemic plan, it was gathering dust in the drawer. It was usually delegated down to some mid-level of the organization who had absolutely no authority to go out and try to test those plans across all the different departments. And so I think there's going to be a renewed interest in maintaining a workable disaster recovery business continuity plan going forward, at least for a decade or so until everybody forgets, and then we'll see what happens .

Hannah Debelius: Yeah, that's interesting, Dean, and Dean, that question did remind me of a conversation I think we had earlier this year and you talked a little bit about it of facilities managers really transitioning and leaning into the role of essential employees. And I think at least for me when I'm speaking to you, that's another thing that I feel is, at least for the foreseeable future, unreversible, really. That is the way I think that so many people have come to rely on facilities managers in their buildings.

Dean Stanberry: Thank you.

Kara Brooks: Yeah, and I can just add to that. I'm health care focused and in health care and in hospitals, you have to have these plans in place, and so it's a little bit different. But I do think that commercial buildings, there's gonna be, I guess, this bigger focus on how to keep the air quality good, what to do if something like this happens again, that type of stuff. So I think there's a lot of those things that we're gonna see, and as I mentioned, with the ventilation. We're definitely hearing a lot more questions about that and our field has become a lot more exciting to people, for whatever reason.

Hannah Debelius: Yeah, thanks, Kara, and Marianna did mention this, but we've been doing a COVID webinar series, of course, and filtration, and ventilation, and IAQ, and all of that are things that have come up in that and we'll continue it this summer post-Summit.

Would any of our other panelists like to weigh in on this question about the pandemic and changes that you think might stick around for a while?

Mary Evers Statz: This is Mary. I can weigh in a little bit from a health care perspective. I think one of the things, a couple of things, actually, and it sort of relates to the next question, what's the biggest focus for health care. It's really what we saw in the pandemic that we think is good and we're going to keep. I think that we're seeing remote work is definitely, definitely something that can stay and that will reduce the number of buildings that we have, which will, in turn, reduce our carbon footprint. So I think that's one of the things that's definitely going to stay.

I think telehealth has been accelerated through the pandemic, which I think has been really a great thing for both our providers and for our patients, that you can just have a remote appointment, again, reducing your carbon footprint by not driving to the building. If you think of everything that goes into seeing a patient from the time they arrive to the time they leave and the amount of supplies that are used and the cleaning that has to go into that room after they leave, telehealth has been significant for us. So I think that's definitely something that's going to stay. So those are those are just a couple of things that have been fantastic.

And then if I can just touch on what the biggest focus for health care is this year, it's really the pandemic and what things can we keep and what things are going to change. So we are masking now and the CDC's recommendations are that health care continues to mask. And the other thing that we have seen is we have reduced the number of visitors in our facilities. So although there are some areas where we're using more energy, because we have less people in our buildings, we're actually saving a significant amount of energy. So if we can sort of limit visitors, that's going to help us. So just my two cents on those two topics.

Kara Brooks: Yeah, I can add the biggest focus on health care, as well. Obviously, we're seeing hospitals were impacted huge in terms of financial constraints. I think the AHA did a study in the middle of 2020 and estimated about $320 billion that they lost in revenue. So we've seen a huge push toward making up that revenue. I think that's great for energy efficiency because you can definitely make up some ground, but again, energy is not a huge portion of the health care facility budget or a health care total budget.

So we see that as a big issue, as well as codes and standards as the Biden Administration is working toward with the infrastructure bills and things like that. Deferred maintenance is an issue, just bringing hospitals back up to where they need to be, and then how

to take that next step, and also make sure that the codes and standards we can follow, according to CMS, are brought up to date, because right now, they're dependent on about 2010 technologies. So that was a lot. I'm sorry.

Hannah Debelius: No, that's great. Thanks, Kara, and actually, Kendall or Andrew, I'm not sure which of you is behind the slido, but you can go ahead and highlight that question, the third one down, about healthcare this year, since that's what we're leaning into is great.

So, Kirby, I'll give you the opportunity if you'd also like to weigh in on that.

Kirby Brendsel: So, yeah, I mean in terms of things that we're looking at around what's our biggest focus, I mean, there's, of course, a lot of things that we have on our plate because there's never any one answer. It takes bringing multiple different aspects to the table to make sure that you're purely addressing all of those ESG, or in this case, probably, most specifically, sustainability asks. The topics that have been raised already, things like IAQ, resilience, all come into fold, but the other things that I would just kind of make sure that everyone doesn't forget is that you need that solid foundation based on data to be able to help to drive these decisions.

And so really one of our biggest areas of focus is continuing to improve, augment, add to our use of data to help us make solid, strategic decisions, whether that's data around our actual consumption, and footprint, and what we can do with it from there against our goals, or how do you integrate that data into the rest of your organization to be able to help drive decisions. So while you may not be the primary aspect of decisions, can you help influence them when you think about things like climate change and resiliency to help think about your sighting and what you want to do around adaptation and climate change for your properties going forward.

Hannah Debelius: Great. Thanks so much, Kirby.

Kirby Brendsel: My pleasure.

Hannah Debelius: So we'll say for the next question about preventative maintenance, unless one of my DOE colleagues can correct me, I don't know the answer to this off the top of my head, but I'll say that my contact information and e-mail will be at the very end of this presentation, so please whoever wrote that, anonymous, please go ahead and e-mail me and I'd be happy to follow up one on one.

So with that, I'll actually hop down to the next one, which is what DEI efforts in BTO or DOE could another organization get involved with or replicate. So Nikitha, I think that one's probably directed towards you.

N. Radhakrishnan: Yeah, so a lot of it can be replicated. So a few things I can talk about is have a point person on DEI, someone who is required to do DEI activities for your organization as part of their day job. That helps a lot, because then that person is forced to think about it in their everyday work. You could look at your recruiting practices more closely and see where you're really missing the mark on reaching different demographics of people.

Are you just recruiting through word of mouth? Then you're only going to be talking to people who you're used to talking all the time. So what else can you do? There are a lot of resources you can leverage out there to nonprofit organizations, and trade associations, all of that. So it depends on your organization.

You could create a safe space for your staff in the office somewhere where they can come and talk about their concerns to their colleagues and just open up, and that gives you information about where you have challenges in your workplace, and only then can you actually address them, or you could even do this through surveys, anonymous surveys. Having regular discussions around the DEI topics helps a lot. We have monthly discussions in the office around different topics.

We've had about women and workplace issues, race, disabilities, STEM education, a lot of varying topics. So ask. More often than not, some of your colleagues already know about some of these issues and is ready to talk about it, so ask around and you could have a discussion around it.

Kirby mentioned ERGs, so encourage your employees to join employee resource groups or create their own. Training, look at your training. Are you doing DEI-based training? And the last thing I'll mention is that you may not be an expert in DEI, but there are a ton of experts out there who can help. So if you have the budget for it, you don't need to try to figure this out on your own. Just go find someone who you can hire and who can help your organization combat these challenges and look at where the opportunities are.

Hannah Debelius: Great. Thank you so much. That's some wonderful advice and I know as just a fellow staff person in BTO, having someone so deliberately invested in this from a staffing perspective has made and it feels like such a difference, at the very least in awareness, and hopefully also in long-term change.

I think I'll go to the next one here, which is, again, back to our health care folks, which, "Is the connection of public health and climate change is interesting. Is that philosophy accepted across the industry in health care?" And I believe that Mary originally brought this up, but Kara is also, of course, connected to a broader health care. So if either of you would like to address it, that would be wonderful.

Mary Evers Statz: Yes, definitely. I mean, there's definitely a connection between public health and climate change. In fact, I'll find it and drop it into the chat, but the CDC has a really good – Center for Disease Control and Prevention, who we rely on in health care, has a really good graphic that talks about the impact of climate change on human health, so very much so.

Kara Brooks: Yeah, and I would agree with Mary. I think that interest is also growing as it becomes a higher and higher priority, but there's definitely you see it from our clinical folks, you see it from all the different levels within the health care organizations that public health and climate change are coming and they are emerging to the forefront, so I would totally agree.

Dean Stanberry: I'd like to throw in a little bit about what is driving that towards the health care industry. Climate Reality Project puts out a lot of information, but one piece of information is that over the next couple of decades, we could see upwards of 1.2, 1.3 billion climate refugees. If you look at south of the border, a lot of the people are leaving that zone not because they're looking for "the better life." It's because there's such a severe drought, they can't grow crops. They can't feed anybody. We're seeing the increase in drought everywhere, so water scarcity becomes a problem. As the heat increases, it affects crop yield, but it also affects the nutrition value of those crops, so you won't be able to grow as much, and then what you can grow doesn't have the nutrition value.

And in some places like North Carolina, where you're subject to a lot of pollen, you might see the pollen count increase by as much as 40 times. So people who are very sensitive to that, will be very affected. And then finally, there are zones. They're mostly in Africa now, but moving into India, that are considered

uninhabitable just because of the heat. They get such a high amount of heat that you cannot survive it for any periods of time. So those are some of the things that we're going to see happening more and more, and that just starts driving more and more health care issues as we move along. Thanks.

Hannah Debelius: Yeah, thanks, Dean. That's a great point.

So this next question, I will go ahead and field myself, actually, which is what's the best way to connect with DOE and get technical assistance. And I'm glad someone asked us, 'cause I know a lot of the questions that haven't made it to these top ones do seem to be pretty specific and technical in their nature. So for those of you that aren't partners already, one of the best ways is just to connect through Better Buildings as a partner. So you can either do that right now through the Better Building Alliance, and I'm hopeful that one of my colleagues maybe we'll drop in the chat the Better Building Alliance join link.

But that really gets you a part of the network. You'll hear about more opportunities like Summit or other webinars, and also, you can join one of our technology teams, the National Lab, to dig in deeper into something like building envelope or EMIS, and a couple of other topics there. You'll also have the opportunity to join the Better Buildings challenge, which is where you commit to a tangible goal of energy reduction of 20 percent over the next ten years, and then we help you a little bit more closely there, including a data reporting element.

Cedar, you work with our tech teams more closely. Anything additional that I forgot on that or you'd like to add?

Cedar Blazek: I dropped the links to join the Better Buildings Alliance in the chat, as well as the link to our tech teams with a whole bunch of resources online. And tomorrow, during lunchtime, we do have a special event called Ask an Expert, where you can go chat one on one with some of our technical experts and get your questions answered.

Hannah Debelius: Awesome. Thanks, Cedar.

The next question I'll bump to you here, which is can we share resources regarding building electrification. I will say that so right before this, I was with our low-carbon pilot participants at a roundtable, and building electrification is not surprisingly really rising to the top with people that are exploring it, people that are

facing challenges and barriers, people that want to explore and share those solutions, and all of that. We do have a roundtable later today about electrification and I think that you'll see, especially for the low-carbon pilot, more resources coming out on that.

But I will toss it to either of my colleagues at DOE or any of the panelists, in particular, Alysson. I'm not sure if there are resources, if you can speak to anything of that with USGBC, as well. But I'll throw it out for my other panelists in case there's something to add there.

Dean Stanberry: Yeah, there's a there's an organization in California called Greenlining.org, and they have a pretty good paper out there on equitable electrification and some of the issues we're going to run into. Everybody talks about commercial buildings, but the bigger problem is probably going to be in the residential areas because there's a lot of lower-income housing where they're using gas furnaces, gas stoves, and they don't have the disposable income to replace those appliances with electric units. And until their costs come down, as well as we reach parity with natural gas and electric service for the same, whether it's heating or cooking, that's gonna be an increasing problem.

The city of Denver actually has a program ongoing right now. They've hired a consultant to develop a strategic electrification plan for the city of Denver. It's targeting mostly the high-rise buildings, but it is expanding out into the residential areas, as well.

Hannah Debelius: Great. Thanks, Dean.

A. Blackwelder: Yeah, this is Alysson. I think that building electrification, I think we have a lot of resources on our website, particularly educational resources with past webinars and past trainings, things like that. We don't have any specific advocacy briefs on building electrification. I know that's one of those things that's on my list to develop because it's become more and more of an issue, especially probably in the past five years. So I would stay tuned for that, and once we have something, we'll post it to our website and we'll do a little article about it just so that it's publicized. But I do think that it's become more and more of a visible issue, so I would say stay tuned on that, so thank you.

Hannah Debelius: Great. Thanks, Alysson.

And with that, I think we're got a couple of conclusion slides here that'll wrap up our session. So I want to, again, just say thank you

so much to all of our panelists. We really appreciate you being here today. We tried out something different to hear from these different perspectives on these top trends and, yeah, we just appreciate it. And this recording, as well as the slides that'll be at the end here, will be available on the Better Buildings Solution Center.

So speaking of the Solution Center, we'll show a short video here. But as a reminder, the Better Buildings Solution Center has over 3,000 solutions to help you find proven and cost-effective strategies to help you reach your energy, water, and waste reduction goals. So if we can bring that up, let's check it out, and then we'll just have a couple of slides after that.

[Video played, 1:26:19 to 1:27:06]

Great, thanks. And if we could bring back up the slides, these are some of the resources that we mentioned. First and foremost, we wanted to highlight a couple of other sessions that will be DEI-related over Summit, in case that's something that really piques your interest and you'd like to hear more from our partners about that. So these three are going on this week, and if you haven't signed up for it directly, every morning, you'll get an email that has all the links for that day, so it's not too late to join a session even if you didn't originally register for it.

On the next slide, I'd also like to share some additional resources from all of our partners here. These are some of the links we mentioned, and again, this slide will be available on our Better Buildings Solution Center along with the recording. So you can check this out, as well as some of the ones we put in the chat, including the interactive publication that just came out today in our Better Buildings Progress Reports.

Finally, go to the next slide, please. Summit is not the end of your journey with us. We have a really great webinar series that'll be starting after Summit and go through this summer. So I think you'll probably see these topics that pique your interest and I think a lot of the familiar faces on the speakers and panelists. You can join this by going to the Better Buildings Solution Center and click on events and webinars.

Finally, and here's our contact information. So if we didn't get to your question or you'd like to reach out to one of our panelists, you can go ahead and do that. You can jot down our e-mail now, or again, you'll have it in the recording.

Additionally, we have launched a short feedback survey in slido, and we ask that you please take a couple of minutes to give us some feedback on this session. We really rely on your feedback to design webinars, or future summits, and more. The poll will be open till tomorrow, and it's anonymous, so your responses won't be visible to other attendees, unlike the other polls that we did in slido today. And I believe that that link should be – one of my colleagues should be putting that in the chat or correcting me on this. Okay, well if we get it up, it'll be available and open until tomorrow.

So, thank you so much, again, to our panelists. I hope to see you all at the opening plenary, which is right after this. Oh, the poll is live, someone's telling me. Wonderful. Yeah, I hope you'll join us for the opening plenary right after this where you can hear from more partners, and have a wonderful and happy 2021 Better Buildings Summit.

[End of Video]