Adam Guzzo: Good afternoon, or good morning to our folks joining us out West. Welcome to the 2020 Better Buildings Better Plants Summit Virtual Leadership Symposium. Thank you all for joining us today for the local government sector meetup. We have a wonderful session prepared and some really fantastic speakers. And I hope you like the color pink, because you're going to be seeing a lot of that color on your screen today.

Well, my name is Adam Guzzo. I'm a senior advisor at the Department of Energy, and have the pleasure of leading our engagement with local governments involved in Better Buildings. Before I go over a few housekeeping items and run through today's agenda, I want to briefly highlight the Department of Energy's Better Buildings Initiative for those that were not able to join our opening plenary and may not be familiar with it.

So through Better Buildings, DOE works to accelerate investment and energy efficiency, technologies, and practices. In particular, DOE works with partners, stakeholders, and other market leaders to address the key barriers to greater energy efficiency. DOE also works with a subset of partners driving additional savings from other linked opportunities such as waste and water. By focusing on effective financing, innovative solutions, leadership, workforce development, and better information, the Better Buildings Initiative is helping drive significant and lasting change. And as you can see on this slide, we have a number of different ways we do that in each of these four areas.

Across the Better Buildings Initiative more than 950 partners have saved nearly 1.8 quadrillion BTUs of energy across 12.5 billion square feet in 3,200 industrial facilities, amounting to nearly $11 billion in cost savings. Shortly, you will hear from AnnaMaria Garcia about the specific savings and achievements of our local government partners.

Since 2012, we have hosted an annual Better Buildings Summit to provide a forum for our partners to share best practices and real-world solutions that have been demonstrated to drive greater energy productivity. This is our first time hosting the summit in a virtual environment, so let me walk through a few housekeeping items. So, first of all, please note today's session will be recorded and archived on our Better Buildings Solution Center, and we will follow-up when today's recording and slides are made available.

Next, attendees are in listen-only mode, meaning your microphones are muted. If you experience any audio or visual

issues any time during today's session, please send a message in your chat window, which is located on the bottom of your Zoom panel. We also ask that you keep your webcam feature off during this session. We would certainly love to see all 400 of you, but that will help us minimize the distractions and draw attentions towards the panelists. So thank you for doing that.

We also hope you join the conversation on social media. So here's information on how do to that. And we'll just leave that up for a second in case folks want to go ahead and jump in, and start engaging with us that way. Okay. Let's go to the next slide.

We're also going to be using an interactive platform today called Slido for Q and A and polling. So if you haven't done so already, go ahead and go to Slido.com using either your mobile device or through your preferred Internet browser. And then once you get there, you'll enter today's event code, which is BBSummit. Again, that's BBSummit. And then once you enter that code, you'll see an option to select from a set of sessions in a drop-down menu. Please select local government meetup, or Local Gov. Meet-up. It should be the orange dot in the drop-down menu.

And if you'd like to ask our panelists any questions or submit any other types of questions in response to what you hear today, you can do that through Slido. We're going to be answering your questions at various points during the session. And we're also going to be using that feature to launch a few polls to give us a better sense of who's in our room, in our virtual room, today. And who is some other specific areas of interest you have on some of the topics that we're going to be discussing.

So, we're going to go ahead and launch that first poll. Hope you've had an opportunity to go ahead and get into Slido. So we're going to ask where you're joining us from today. You're going to be able to enter that in directly into Slido. For example, I'm joining from Falls Church, Virginia. So welcome from Falls Church. And we should start seeing on our screen here – yep – as folks respond. Atlanta, Georgia; Washington, DC; great. I see some folks out on the West Coast, from California and Washington; fantastic. Yeah.

This is fun. It's fun to see that we've got folks represented really from all different parts of our country. See folks from the central part of the country. Certainly a number of folks here on the Eastern side of the country. Great. Hopefully, you guys are seeing this, as well.

We've got, I think, a really good diverse audience represented here this afternoon, which is really exciting. It's one of the – obviously, we'd love to be together in person, but doing so virtually allows us to perhaps reach a broader set of audience that we normally otherwise could be. Okay. So another couple of seconds if folks haven't had a chance to tell us where you're calling from, and then we'll close this poll. Okay.

All right. So get ready for the next poll that's coming at you. So now we want to get a sense of who's in our virtual room today. So question here is what sector best describes your organization? Should see a number of different options via multiple choice to choose from. Great. Got a number of folks joining us from cities across the country. A fair percentage of states, as well. Glad you were able to join us this afternoon, or this morning. Some county folks, too. Looks like a number of organizations from the non-profit or NGO side of the house, I imagine that work closely with the local government sector. Still seeing a few responses jump up, so we'll give this another five seconds or so, and then we'll close the poll. Okay.

Great. Let's go ahead and – that's fantastic. Well, glad to see we've got so many cities with us, a number of folks on the county side, and states, as well. This is great. We look forward to the discussion this afternoon. Okay. Well, let's talk briefly about our agenda.

So momentarily I'm going to turn it over to my boss to offer her welcome on behalf of DOE and recognize our Better Buildings local government partners. Then I'll highlight a few resources before introducing our panel and spending the bulk of our time in a facilitated discussion that includes some more poll questions and an opportunity for you to submit questions directly to the panel. And my colleague, Nate Allen, will wrap up things by highlighting some other summit sessions for you to consider and how to stay engaged with Better Buildings and DOE beyond the summit.

So with that, it's now my pleasure to introduce my boss, AnnaMaria Garcia. She is the director of the Weatherization & Intergovernmental Programs Office at DOE. So, Anna, I will now turn it over to you.

AnnaMaria Garcia: Thank you, Adam. As Adam mentioned, my name is AnnaMaria Garcia, and I am the director of the Weatherization & Intergovernmental Programs Office at DOE. It's my pleasure to welcome you to the 2020 Better Buildings Better Plants Summit and the local government sector meetup today.

This has been – and continues to be an extraordinary time in our country's history. So, I hope you, your colleagues, and your loved ones are safe and well during this challenging time. I want to sincerely thank those of you that work in cities and counties across this country. You and your communities are on the front lines working to keep our nation safe and operating. We appreciate all that you are doing. Thank you for your participation this afternoon, given the pressing priorities in front of you.

Although we cannot be together in person today to celebrate your leadership and exchanging ideas, I look forward to our virtual discussion this afternoon as we share strategies on how to reduce wasted energy and harness energy technologies that improve the resilience, competitiveness, and the health of our communities. I hope you take advantage of the opportunity, not only in this session, but over the next four days, to learn and share your insights. We go to the next slide.

It's my pleasure to offer a special welcome to the more than 70 local governments that have partnered with us through the Better Buildings Challenge and Better Communities Alliance. You represent 80 million Americans across 29 states; more than 22 percent of the country's total population. You range from large cities like New York and Chicago to small communities like Gillette, Wyoming, and Perry Iowa. We are grateful to have such a dedicated and diverse set of partners.

You are leading by example, reducing energy in your facilities, passing innovative policies to increase energy efficiency and renewable energy adoption, and working to ensure the benefits of clean energy extend to all populations within your communities. We value your front line perspectives about the challenges you face and the opportunities you see to bring clean energy to your communities. We recognize the way to do that may look differently, depending on your local context. But we appreciate your singular desire to harness the power of clean energy to make your communities better and more resilient. Next slide, please.

So the US spends $600 billion each year to power our homes, plants, and buildings. On average, 20 to 30 percent of that energy is wasted. Local government buildings alone consume 2 quadrillion BTUs each year, and have the potential to save $3.7 billion annually through a 20 percent improvement in building energy use intensity. So back in 2011, we issued a challenge to state and local leaders, CEOs, university presidents, manufacturers,

and building owners to commit their organizations to 20 percent energy savings or more – sorry, 20 percent energy savings or more – in 10 years, and to lead the market by sharing their solutions.

Forty-seven local governments across the country stepped up and joined the Better Buildings Challenge, and have collectively achieved cumulative savings of $461 million, 48 trillion BTUs, and 240 million gallons of water. Ten of our local government partners have already met their goal – ahead of schedule – including three cities that achieved or exceeded their 20 percent energy savings goal this year. Congratulations to Fort Lauderdale, Florida; Rochester, New York; and Margate, Florida on achieving your Better Buildings Challenge energy saving goal. It's a real achievement.

In addition to the ten goal achievers, six other partners are on track to meet their goals, with more to come as we work with partners to finalize their data. Our 2020 Better Buildings progress report, which is linked at the bottom of the slide and featured on our Better Buildings Solution Center, profiles the achievements of the goal achievers and highlights the many other exciting projects and actions local governments are taking to support and deploy clean energy in their communities.

I look forward to hearing more about your successes and strategies to achieve an even greater savings during this year's virtual symposium. Thank you for your continued partnership and leadership. Before I turn it back to Adam to highlight a few key resources and a funding opportunity announcement that DOE intends to issue later this summer, let's take a look at this short video that profiles the leadership and achievements of our 2020 goal achievers.

[Video playing from 0:12:35 to 0:14:52]

Adam Guzzo: Thank you, Anna, and congratulations, again, to Fort Lauderdale, Florida; Rochester, New York; and Margate, Florida. We're excited to recognize you for your leadership. Before I introduce today's panel, I want to spend a few minutes highlighting a subset of DOE resources and a Notice of Intent DOE released earlier this year that will likely be of interest to many of you.

So on this next slide, you'll see three featured toolkits. The toolkits include best practices gathered from partners that participated in one of our targeted short-term and partner-focused activities. We call them Better Buildings accelerators, and they're designed to

address persistent barriers that stand in the way of greater energy efficiency or renewable energy.

I want to start by highlighting the energy savings performance contracting, or ESPC toolkit, the first one on the left side of your slide. This toolkit I don't a collection of resources that will enable state and local communities to learn and benefit from the work of the Better Buildings ESPC Accelerator. The toolkit includes the best practices and innovative approaches that states, cities, and K through 12 schools have used to successfully establish and implement performance contracting. Resources are grouped so that users of the toolkit can easily find the information they need at each stage of their ESPC decision-making process. So, for example, DOE recently published three new ESPC measurement and verification resources, which are included in the evaluating ESPC results portion of the toolkit.

Next up is the wastewater energy management toolkit, right in the middle of you screen, which will be available late this summer. As many of you know, water and wastewater operating costs typically account for 30 to 40 percent of annual municipal energy budgets. Upgrade projects in these facilities can reduce total facility energy consumption by up to 50 percent.

So to target energy-saving opportunities in that sector, DOE launched the sustainable wastewater infrastructure of the future accelerator, which we lovingly refer to as SWIFT. SWIFT was a three-year partnership with 25 state, regional, and local agencies. It engaged with more than 70 water resource recovery facilities and their jurisdictions to accelerate a pathway towards sustainable infrastructure. The best practices and innovative approaches successively used by water resource recovery facilities to establish and implement energy management and planning will be featured in the wastewater energy management toolkit. So be on the lookout for that.

Finally, the outdoor lighting toolkit. It's a collection of decision tools, lessons learned, and other resources, resulting from our outdoor lighting accelerator that demonstrate practical and effective best practices to accelerate the adoption of high-efficiency outdoor lighting and improved system-wide replacement processes at the municipal level. As some of you may have directly experienced, upgrading outdoor lightings to LEDs, for example, can reduce energy costs by approximately 50 percent over conventional technologies, and provide additional savings through lower operations and maintenance due to longer lifetimes.

Now, I want to turn and highlight a few recently or soon-to-be released resources from the Department of Energy. The first are a set of resources from our Commercial Property Assessed Clean Energy, or CPACE, working group. Since the launch of DOE's commercial PACE working group in 2018, five of our partners have closed more than $34 million in CPACE-financed projects. And six additional partners are expected to close by the end of this year. You can learn more about the working group from our recent resources that are noted here on the screen. Our CPACE working group year in review, which is the first bullet; highlights progress from cities like Chicago, Milwaukee, and Reno.

And then the second CPACE resource which I want to briefly highlight is the CPACE financing and the special assessment process. Notably, in this issue brief, our research finds that defaults and tax foreclosures happen very rarely. In fact, since 2008, only one CPACE project has defaulted out of almost 1,900 completed projects.

And then finally – not finally, excuse me – the next resource I want to highlight for you is on the topic of resilience. It should be on the bottom left of your slide. As many of you know all to well, natural disasters are often costly to local governments. And without onsite backup power, these disruptions endanger public safety, security, and health. So DOE's recently published step-by-step guide how distributed energy resources can improve resilience in public buildings, can make it easier to better prepare for these situations by considering options to reduce the energy demand of your critical operations for energy efficiency by making new microgrid investments.

For example, this resource explains how Hillsboro, Oregon – one of our Better Buildings Challenge partners – worked with DOE to leverage two freely publicly available tools to identify eight sites that could rely on CHP, solar PV, and storage technologies to power critical facilities in the event of a grid outage. So I encourage you to take a look at that resource.

And then now, finally, a resource called the Energy Data Management Guide, which will also be released later this summer. This interactive online resource includes case studies, worksheets, and a step-by-step approach to establish a robust and sustainable energy data management program in the public sector. Our 47 local government Better Buildings Challenge partners are excellent

examples of the importance and value of data-driven energy management. And many of them are featured throughout the guide.

Next up, I want to make you aware of that Notice of Intent I mentioned earlier that we released earlier this year. It will, I think, be of interest to many of you. So the NOI, Notice of Intent, outlines that DOE intends to release a funding opportunity announcement in August, investing up to $42 million in connected communities. You can see how we define that below the picture on your screen.

Through the FOA DOE wants to demonstrate and evaluate the capacity of buildings as grid assets by flexing load in both new developments and existing communities across diverse climates, geography, building types, and grid and regulatory structures. So if you're interested, start forming your strategic team of stakeholders. And I also want to encourage you to bookmark EERE Exchange, which is on the top right of your screen, so you could stay abreast of other relevant funding opportunities that may be issued by DOE in the future.

Okay. Now we're going to turn back to the audience and back into Slido. You should see another poll coming up. We want to better understand your role within your organization as we get ready to launch into the panel. Gives a sense of who we've got in the room with us. And you'll see from the options here on the screen, this is really geared towards our local government represented in the virtual audience today. Great.

Not surprisingly, a lot of energy staff in the room, as well as those who work on sustainability. It looks like we've got a combination of those who are at the energy manager level, as those at the staff level, some sustainability directors or leaders with us, as well. Great. This will be really helpful feedback as we think about, as we turn to the panel, and hear from them, and know who's in our audience today. Another ten seconds or so here for folks to finish filling this out.

Thank you, again, for you feedback. Okay. Let's go ahead and close that poll. Great. So as to be expected, lots of sustainability staff, lots of energy staff, and we've got some folks who both manage those staffs, it looks like, as well, which is great.

Okay. Another poll coming at you before I introduce our panel. Now we want to get a better sense of what your are of expertise is within your organization. So we've heard a bit about your role.

Now, tell us a little bit more about what kind of work you do, or what your area of focus is.

Great. I see a lot of folks who work on commercial or municipal energy efficiency, not surprisingly, given this is the Better Buildings Summit. Also, a lot of energy and climate planning, renewable energy, as well. Some folks who work on finance; obviously, a very important part of this process in terms of getting projects done. Now a few folks who work on the transportation and residential side of the energy space. Great. Again, thank you for your feedback.

Let's go ahead and close that poll. And as I mentioned, this is going to be really helpful as we shift into our panel discussion and have a better sense of who we're talking to today. So thank you for your feedback.

So panelists, if you want to go ahead and turn on your radio, I'm going to briefly introduce you, and then we'll dive into our first topic. So we have a really fantastic panel lined up today. Our panelists will further introduce themselves as we jump into the topics, but let me just briefly say that each of these panelists is responsible for leading their respective government's energy and sustainability efforts, and we're proud to partner with all three of them through the better buildings challenge.

So first, Chris Castro. He's the director for the mayor's office of sustainability and resilience in the City of Orlando, Florida. So for those that joined us in person for last year's summit, you will remember Chris was one of our keynote speakers during the partner panel. We're really glad to have him join us this afternoon.

Next is Lauren Faber O'Connor. She's the chief sustainability officer for the City of Los Angeles, and I would be remiss if I didn't note that LA recently increased its Better Buildings Challenge commitment to a 22 percent energy reduction across 150 million square feet, which actually makes LA the largest local government commitment and fourth largest commitment of any partner overall. So, Thank you, Lauren for your leadership in joining us this afternoon.

And then finally, it's my pleasure to welcome Grace Rink to the panel and to the Better Buildings family. She is the recently-appointed executive director of the new office of climate action, sustainability and resiliency in the City and County of Denver, Colorado. And I'm really looking forward to her perspective on

these topics as she works to implement them as part of a brand-new office.

So, as we dive into our first topic, we're going to go right for the elephant in the room, and that's the challenges – and maybe some potential opportunities – facing local governments as they work to advance clean energy during COVID-19. We know the impacts of COVID-19, the pandemic on local governments are significant and well-documented.

So, for example, in April, the US Conference of Mayors and National League of Cities published the results of a survey that show, among other impacts, that 59 percent of large municipalities, those 500,000 or more in population, will have to furlough their employees; while 50 percent of smaller municipalities – those less than 50,000 in population – anticipated having to cut public services, with that number reaching 70 percent for municipalities with a population between 200,000 and 500,000.

So we know the impacts are very real and significant, and before we ask our panelists how they're working to continue their mission under these conditions, let's get a sense of what our audience is facing. So back into Slido now. I want to ask what's been or what do you think will be the most significant impact of COVID-19 on your ability to meet your energy goals? This is one of the things where as we hear from you, the panelists will take note of this and try to address some of these things in their comments, as well.

Yeah. I've heard a lot about projects being delayed or suspended, budget cuts. Yeah. These are really, really tough things. I'm glad that we've got Lauren and Grace and Chris here to talk about what they see and what they're doing in their cities and as they deal with some of these similar issues. Okay. Another ten seconds or so. Okay. Let's go ahead and close this panel – this poll, rather. Yeah. So it looks like, panelists, projects delays or suspended is the top issue. Budget cuts is right there by it. And then furloughs is a little further down the list. So hopefully that's insightful feedback as we engage on this discussion.

And then one more question before I jump over to the panel. And this is a little bit more specific now to what the impacts have been at the staff level. So have any of your energy or sustainability staff been laid off or furloughed due to COVID-19? I just want to remind folks that all these questions are shown as aggregated results. So thanks for being willing to offer your insights here.

Well, that's a little surprising, but I'm really pleased to see that no is the highest answer by far. Yeah. I have heard from even our panel about staff being reassigned to support other functions. Okay. That's really helpful feedback. Okay. We're going to go ahead and close that.

And now I'm going to turn to the panel, and we're just going to ask them to talk a little bit about some of the challenges that they see or foresee as they address this. So, here is the first question, panel. And Lauren, we'll start with you. As leaders of your respective sustainability offices, how is your jurisdiction, LA, working to advance clean energy? And what are the most significant challenges that you see or foresee as a result of the COVID-19 pandemic to achieve your mission? And then perhaps, how are you working to overcome some of those challenges, as well? So, Lauren, go ahead.

L. Faber O'Connor: Thank you. Thank you so much, Adam, and thank you, AnnaMaria, as well. I really appreciate that you guys were able to develop this, a virtual version of the summit and I could participate in it. It's really fantastic. And just in general, I want to appreciate the Better Buildings initiative overall. It's been such an important partnership for us in LA. And to me, it's just such a great example, such a kind of key example, of what it's like for the federal government and local governments to partner in a really creative and constructive way that leads to real results.

And in LA, we've been a member of the Better Buildings Challenge for a long time. And we have now the most Energy Star certified buildings of any city in the country. And so we're just continuing with our energy efficiency goals. We've upped our goals from ensuring that we meet 15 percent of our energy demand through energy efficiency by 2020 to now meeting 30 percent by 2030. And it's just enabled a significant amount of partnership and ambition. So I really appreciate all the work that DOE and the partnership with you and your team, AnnaMaria, have. So thank you.

And to anyone who maybe is on the meeting here that if you have not participated and you're thinking about participating, I highly, highly recommend it. So just to start – next slide – with a little bit of background on LA's Green New Deal. The mayor released LA's Green New Deal just about a year ago last April. And it was really about not just updating our sustainability plan that we had created four year prior, but really looking at a vast overhaul because of the change in the landscape over those intervening four years.

First of all, we've seen the science of climate change become much more dire. But we've also seen ambition in policy and in technology, innovation, increase significantly. And so we increased our ambition, as well, certainly as a part of the mayor's commitment to upholding Paris Climate Agreement. So what does that do, mean? That means reaching carbon neutrality by 2050, if not sooner. And for us it boils down to what you see here, the five zeroes: a zero carbon grid, zero carbon buildings, zero carbon transportation, zero waste, and zero wasted water.

And when we do, as we're working to reach all of these goals, we're not just looking at the specific trajectory itself, but we're ensuring that those policies are looking at a myriad of co-equal goals around air quality improvement, around equity and improving local communities, workforce development, and developing a prosperous green economy. All of those things come together.

I know we'll have a chance to talk a little bit more about that in a few moments. But, just to say that this is the backdrop that we were working in full steam ahead at the beginning of the year. The mayor declared the 2020s the decade of action just in January. And released an executive directive on how the city in our municipal powers would be leading by example across all of these areas.

And then just a few months later, we were hit by this global pandemic, as are all of us, and really had to take a step back and look at all these areas in a new light. It doesn't mean we haven't, we should pull back on the pedal on any of these. But it's really been an opportunity to look at how we are addressing these issues that really get to the basic needs of our communities in terms of public health, and in terms of economic development; things that we already knew were part of this. But, were not just part of it, but integral.

But it's really been an important reinforcement in our climate goals to be able to see firsthand that by meeting these goals, we are doing the necessary work to address this pandemic in terms of people's underlying public health and our ability to build back better. One of the things the mayor has said specifically is that building back, getting back to normal is not where we want to be – would be a failure if all we do is get back to normal, because it really, where we were prior to this pandemic has shown now that we've had a significantly inequitable economy that certain populations are being hit more than others, and we have to – we

have to – address those injustices, and we have to address those inequities.

And as we build back, as we are addressing the significant disruption in our economy, we do this by meeting all of these goals across these five zeroes, and building a clean economy. One of the things the mayor also has the opportunity to engage in is through his leadership in the US network of climate of climate mayors that he co-founded, which is inclusive of 400-and-almost-50 US mayors working to uphold the Paris Climate Agreement. But he also this year became the chair of C40, which is an international network and organization of climate leading mayors. And one of the first things he did was to create a COVID-19 recovery task force within C40.

And you're seeing as emerging themes across all of these cities across the world are there very issues in these five zeroes, that everyone sees these as the areas of greatest need, as the areas of greatest potential security and insecurity, and where we can build back better. And so that's been a really exciting reinforcement while also addressing the challenge of are city councils meeting regularly? Are our commissions meeting regularly? Budget cuts. We have a $250 million shortfall this year, and we see that probably growing, not reducing. And so how are we dealing with all of that and meeting those twin challenges at the same time? That's where we currently stand here in LA.

Adam Guzzo: Excellent. That's really helpful and really helpful insight. Chris, I'm going to turn to you and ask the same question. Let me know if you need to repeat it. But basically what your jurisdiction doing to advance clean energy right now? And then what are the challenges you see or foresee in Orlando or in the broader local government landscape?

Chris Castro: First of all, thank you, Adam, as well as to Maria Vargas and AnnaMaria for continuing to keep this summit moving. I want to echo what Lauren mentioned, that this collaboration between the local governments and the federal government through the Better Buildings Challenge has been instrumental in helping us to advance a lot of our energy efficiency and clean energy efforts in the city. And we're getting close to meeting our target here and goal that we set out to achieve.

Starting out, I wanted to underscore that COVID at its core is a respiratory disease. And it's something that in the research we're beginning to realize how underlying and preexisting conditions in

certain neighborhoods that have been subject to poor air quality or the emissions coming from fossil fuel energy has led to higher rates of mortality and higher rates of illness. And so for us when we look back at this issue in Orlando, we are encouraged that the work that we were doing to transition us away from fossil fuels and towards cleaner sources of energy is essentially the strategy that cities across the world need to begin accelerating at the rapid pace.

Obviously, moving to remote work environments, the uncertainty of the economic impact – not only on the city, but on our residents and their livelihoods – are all questions that we have right now and I don't think we can answer. But what this is helping us do is to realize that building back better, as Lauren mentioned, and bouncing forward, one core strategy is to advance our clean energy forward. Next slide, please.

So, what we've been really trying to do under the last four months is continue business as usual in implementing a myriad of different infrastructure projects that deal with clean energy. We're excited that we're in the process of now installing about 1.5 megawatts of rooftop solar on some critical facilities, things like our emergency operations center, community centers to become houses of refuge during hurricanes and in extreme weather events, and fire stations to ensure that as we move forward and potentially as we move into now hurricane season in Florida, that we're more prepared and can ensure reliability of our services, even when the grid goes down.

We're in the process – and approved this, actually, during kind of the quarantine – of adding 100 new electric vehicle charging stations. We know that transportation sector emissions have contributed significantly to respiratory illnesses and moving towards EVs is critical. And so we've dedicated ourselves to add 100 new level-two charging stations throughout city parks, rec centers, downtown garages, and even on-street parking, in partnership with the Orlando Utilities Commission.

I heard actually earlier this week or late last week from our utility executives that our new solar farm is soon to be coming online. It has been officially commissioned and soon will be available to the general public. But we're adding about 250 additional megawatts of community solar to get access with low-income carve-outs to ensure that we're moving forward in an equitable way.

And then, just on Friday, we launched our next round of Orlando solar co-ops, these group purchasing programs in partnership with the Florida Solar United Neighbors. And we're excited because just

in the last three days, we've had over 96 residents sign up for that co-op, committing to moving forward with rooftop solar on their own roofs. And with enabling case and self-financing programs, we're able to offer some resources for them.

The other thing that we're thinking bout is how to begin improving the critical facilities – as I mentioned, other rec centers and the like – with resilience hub improvements? And so we're looking to make some of those, as well. Can you go to the next slide, please?

And then the last thing on the opportunity I'd be remiss to not mention the work that we're doing with the US Department of Energy. We were fortunate to get a US DOE grant to begin testing how to scale what you see here known as floating solar, or floatable tanks.

And so right now we have over 200 KW of grid-tied systems throughout central Florida, and in partnership with NREL and the Florida Solar Energy Center, our utility, OUC, LADWP, the city of LA, and the city of Orlando; we are all collaborating coast to coast on figuring out ways in which we can harness the power of floating solar across water bodies throughout our territory.

And NREL's recent study shows that about ten percent of US electricity demand could be met with this emerging application for solar technology. So we're excited to dive into that more, and that research will start later this summer. I'll turn it back over to you, Adam.

Adam Guzzo: Thanks, Chris. Appreciate it. That floating solar is cool stuff. It's neat to see innovations happening across the space. But that's a fun one, for sure. I'm glad you guys are exploring it down in Florida. So, Grace, let's close this first part of this topical discussion with you. Go ahead, Grace.

Grace Rink: Sure. Thanks. You can go to the next slide. And I'm sorry I don't have a very cool time lapse like that. That was really neat. So thanks for having me. Everyone who is watching, I have been on the job here for just over two months, and working with my team entirely remote. So this is my first presentation on behalf of the department here in Denver. And when we get to the Q and A, if I'm not able to answer some questions with enough specificity, I'll make sure to get back with the organizers to get you proper responses to the questions.

But, like all cities, we have, we're facing internal and external challenges, like so many of you. So, as alluded to in the polls, we are facing budget cuts and staff furloughs. And we've had, in our department in particular, we did have over half our staff were redeployed to the emergency effort. But most of them are back on the job in our department, now, which is great. We were budgeted for an additional about at least ten positions that we could have hired this year, and we probably will not be able to. And so we just need to reprogram and refocus on what we can get done this year. But, of course, not only does that affect our department, but it also affects the departments that we're counting on to do the energy efficiency work in our own buildings. So that's going to be a continuing challenge.

Externally, we want to see a lot of progress in privately-owned buildings, as well. And the perennial challenge of convincing people that energy work creates good jobs right now here at home, and that the projects will more than pay for themselves in a few years has only gotten worse. With businesses reeling from the combined emergencies, and especially with the long-term uncertainty in the commercial real estate market, we need to focus on making the case for these investments. And you can go to the next slide.

So, on a sunnier note, here in Denver, we have excellent public support and political will to do this work. This new office was created less than a year ago by the mayor and city council in response to a resident-led initiative, which also created a climate action task force, which is just now completing its work. This representative group will recommend aligning our climate goals with current science in making them much more aggressive, and will provide a very large menu of strategies to achieve the goals. The glaring disparities and the impact of COVID-19 on communities that are more likely to live and work in unhealthy buildings has clarified the connection between environmental health and public health, giving more weight to the case.

Denver has already passed a green building ordinance, which I'll discuss more later, but basically requires a cool roof, and additional options, such as solar, energy efficiency, or new green space. In 2019, the city introduced a green stretch code that would require ten percent greater energy efficiency than current code, and would promote strategies such as water metering, dual piping, daylight analysis, indoor air quality, net zero, and so on. This draft code is voluntary, and it's incentivized right now to bring the

building industry on board before it becomes mandatory in the next code cycle.

We're about to publish our plan to transition the entire city – not just municipal buildings, but also businesses and homes – to 100 percent renewable electricity without rec's. This plan prioritizes additive renewable electricity capacity and enabling the physical operation of a 100 percent carbon-free electric grid. This means investing locally and advocating for additional utility-scale carbon-free electric resources to be brought online in Colorado.

And now we pair that with another planning process that we're about to launch: the building electrification plan. And that will determine how to reduce water and space heating emissions by 50 percent by 2040. So you can see it won't be long before we have a clear path to significant reductions in the emissions caused by our building sector. And Adam, back to you.

Adam Guzzo: Thank you, Grace. So we're going to now turn to some audience Q and A. We could talk about this topic all afternoon. Obviously, we don't have time to do that. We've got a couple of others to address. But, take a couple of questions from the audience. So if you enter those in through Slido, as a reminder, we'll do that at the kind of end of each topic area is give you a chance to ask the panelists some questions.

So, there were some specific questions from each of you. I want to ask a broader question that was posed, which is like what opportunities do you think the current environment offers to talk about the benefits of clean energy? So how either you incentivize, or financially structurally to businesses and other organizations to pursue green building practices, specifically in this current environment?

Grace Rink: That's for any of us?

Adam Guzzo: Yeah. Just jump in.

Chris Castro: I can start out.

Adam Guzzo: Yeah. Go ahead, Chris.

Chris Castro: And others can chime in. So, one, I think that there is – and Grace and Lauren both touched upon it – is this nexus now of elevating the notion around health, the connection of public health, environmental health and economic health, all interconnected. And

so underscoring the importance of the work around clean energy, energy efficiency, these renewables; all focus on ways in which we're reducing emissions and improving health of the system overall.

And the other notion, real quick, is around obviously energy efficiency being one of the best ways to lower net operating expenses for building owners, and therefore maximize incomes that they may not be able to get and may not be reaping thus far.

Grace Rink: I think another interesting opportunity right now is I think that office operators – not just building operators, but the folks who manage offices – are figuring out how to make their space more efficient, right? With so many people who are now clearly able to work remotely, even, as Lauren said, we don't' want to go back to the old normal. That wasn't really working. If we can get back to a place where those of us who work in offices could be there sometimes, but not all the time, how could that make our buildings more efficient? How could we prioritize building space for those who need to be there serving the public directly face-to-face on a regular basis, while the rest of us maybe could be elsewhere giving them that space?

Adam Guzzo: Absolutely.

L. Faber O'Connor: Let me just add to that that as we're looking at the needs of buildings across the entire city, particularly if we're thinking about buildings or people are going to start to come back and inhabit them in whatever patterns that may be, there could be a need for some significant adjustments, changes, infrastructure changes, HVAC air filtration; lots of things where you're going to get into these buildings. So why not utilize that opportunity to go for even deeper retrofits?

And so we're really trying to kind of dive deep into that opportunity, which them leverages this other opportunity of thinking about innovative findings. And so as local governments – and there's a lot of our people, our local government peeps on the line here – you understand that it's sometimes hard. And when I saw people in finance on the Slido, I was like, "Yeah. Let's talk." But you know how there's a way of doing things in local government when it comes to financing and budgets.

And I think that the stretch and the significant strain that we are all under right now is forcing, is enabling the conversation on innovative financing approaches to addressing energy

affordability, both for our municipal buildings, for private buildings, for the multifamily and residential space; where these are conversations that I'm sure many of us have been trying to advance for a long time. And I think there's a new openness for both getting into those deeper retrofits and financing them in more creative ways than there's been ability previously.

Adam Guzzo: Yeah. Thank you, all, for your thoughts there. We could talk about this all afternoon. But because we have a couple other topics we want to address, and you tee that up a bit more in talking about energy affordability, our next topic is on energy equity.

Before we shift to that, I just want to quickly note a couple of resources from Better Buildings and DOE at large that may be helpful on this topic. So we compiled a set of resources and add them to our page. We've got page called Dealing with COVID-19. It includes resources from Better Buildings partners, affiliates, and other organizations. And if you're probably are – I'd say most of you are probably already aware, but there's a set of resources from these three local government organizations on the topic. And so I would encourage you to take a look at those if you're not familiar with them already.

And then we've also know that people's jobs and their kind of schedules look very different right now. So if you're interested in online training or education opportunities, we have a page on our website, as well, called the Better Buildings E-Learning Center. So I encourage you to take a look at that.

Okay. So we're going to shift to our next topic, now, on energy equity, as I mentioned. And as all fellow Americans across this country are talking about and working to address systemic inequality and injustice, local governments are also working to ensure that the benefits of clean energy are available and accessible to all populations within their communities. But especially the most vulnerable and marginalized.

So we're going to ask this poll question of you, and then we're going to ask our panel to address some thing on this topic. So, what topic are you most interested in learning about in regards to energy equity? This will be helpful as we shift to the panel. We'll try to address some of these things that you say you're most interested in. Okay. So I'm seeing integration of energy efficiency and renewable energy is one of the things. And Grace, you're going to kick this next one off. Stakeholder engagement. I think that's a really important one in talking about this topic.

Okay. We'll give folks maybe another 15 seconds or so and see where this lands. Okay. So it kind of also looks like energy efficiency renewable energy, how do you integrate those in the context of energy equity. I think stakeholder engagement, yep, that's going to be a big one. So if you guys as we talk about this can try to address some of those things. All right. Let's go ahead and close that poll, and we'll shift over to our panel at this point.

So, for you, panelists – and Grace, we're going to let you lead off on this one – talk a little bit about what your jurisdiction – so what's Denver doing to ensure energy is affordable and the benefits of clean energy are available to low- and moderate-income populations in your community? And again, if you can touch on some of that stakeholder engagement and anything, ideas you have around integration and energy efficiency with renewables, that would be fantastic. So, Grace, go ahead.

Grace Rink: Sure. I'll start with the engagement. So embedding the principles of equity into our work is a key priority for our mayor, Michael Hancock. And it's been a top priority for the climate action task force that I mentioned, especially in the discussions for how to pay for all of the emission reduction strategies they're going to recommend to us. Every conversation started and ended with how to ensure that households with limited incomes would have a lighter share of the burden, if any.

And like most cities, we work in close partnership with local institutions and non-profits to gather that type of input. But, we also have a sustainability advisory committee that's appointed by the mayor, and in this new department, we are looking at creating additional advisory groups. So this would be long-term ongoing advisory groups that are not just, "Here's a project we want to talk about," but looking at our policies overall. And we're looking at creating them for different specific constituencies, such as youth, environmental justice, and inviting the science community into our conversations, as well.

Our department was recently awarded a $1 million grant from the state to support the construction of a community solar array on city property, which is going to be very interesting. We're actually looking at being able to host a total of 15 megawatts of community solar on city facilities. The plan that's being funded by this grant should accommodate 300 household subscribers. We're hoping for at least a 30 percent decrease in the monthly electrical bills. The array itself will be located in the subscriber community. And of

course, we're going to be looking at contracting requirements for local hiring during the construction phase.

And one program that's still in development is we're looking at how can the city help to reduce energy costs for renters? So 50 percent of the housing stock in Denver are rentals. But we don't have any data on how many of those properties require tenant-paid utilities. So we need to figure out how to structure an incentive program that would entice owners of properties that house low-income people to not only do the energy efficiency projects and to electrify and go solar, but also to pass those savings along to their tenants.

So those are the three big projects that we're working on this year. Adam, back to you.

Adam Guzzo: Thanks, Grace. I appreciate you flagging that tenant portion of this in the rental properties. That's a real key part and a difficult nut to crack. So thank you for addressing that. Chris, you want to tell us a little bit about what you guys are doing in Orlando?

Chris Castro: Yeah. Most definitely. Like most of you all probably know, equity continues to become a key principal for sustainability offices across the country. And quite frankly, it's because we're realizing that climate and energy burdens that we're realizing, that are being realized are being felt disproportionately by communities of color and by low-income communities. And so equity must be woven into everything that we're doing, which is my we're very excited in Orlando to have ongoing equity trainings every single month to look through the GARE equity lens as we start to implement different policies and programs, and really make sure that it's a key part of what we do as we move forward.

During this time – unfortunate time – OUC, the Orlando Utilities Commission, graciously has offered up to $12 million in benefits to what we call the Project Cares initiative. This is things like eliminating disconnects during this time, helping individuals with paying their utility bills when needed, and when possible. And so we're happy to have been able to provide at least that monetary contribution. In addition, we've started to do a lot of equity mapping throughout the city, looking at not only electricity and water burdens, but things like transportation burden and even food, food scarcity and food insecurity; and beginning to target market some of these high-profile neighborhoods that are, again, being disproportionately impacted.

And I'll get into this third bullet point on the next slide, but the last thing I'll mention here is we've started to work with our housing and community development office in the city, as well as the Orlando Housing Authority to begin integrating standards, essentially, for assets that we're investing in when we're using CDBG ship and home dollars. Basically state and federal appropriations dollars, to support some of our lowest income. And so I'm happy to say that we're going above and beyond the building code, and we're really encouraging not just affordability from a rent perspective, but obtainable housing that looks at also cost of living. Right? Next slide.

The two programs I wanted to quickly highlight that actually dovetail with integration of efficiency and renewables. One is through OUC called Efficiency Delivered. This is actually for renters and for homeowners, and it allows anyone who is a customer of OUC to first get a free home energy assessment, looks at base paying ASHRAE level one, looking at our HVAC, your lighting, your envelope, service hot water, and plug load; and identifying ways to save.

And then on top of that, we provide $2,000.00 of on-bill financing that's available. And it's subsidized based on income, as you can see down there, if you're less than a $40,000.00 AMI, you basically get covered 85 percent of that $2,000.00. They basically pay $300.00 over a 12-month period with no interest incrementally onto the bill. And so often we see cash flow positive scenarios where they're saving more, of course, because of that investment.

So we have that scale. And again, that only hits to $2,000.00. so then we asked ourselves, "Well, what happens if I need to upgrade a new HVAC system, or new duct system?" We were fortunate to be able to partner with a non-profit clean energy lender called SELF, the Solar and Energy Loan Fund. I know that they're also a Better Buildings Challenge partner.

And the beauty about this model is as a non-profit thing, they've registered as a CDFI, a community development finance institution, and able to get very low-interest capital that goes towards LMI communities. As a CDFI, 70 percent of their capital that they give out must go to LMI census tracts. And the beauty about their program is broad, and not just energy efficiency, also on-site renewables, but also wind hazard mitigation, resilience improvements, and disability products for those who need it.

So, in combination between efficiency delivered and self, as well as our residential and commercial PACE programs, we've tried to build out this ecosystem of financing tools to offer our residents and our small businesses to ensure that they're getting the benefits of reduced energy bills and can put more of that back into the community and to their own pockets. Back to you, Adam.

Adam Guzzo: Thanks, Chris. Those are some really fantastic programs. I appreciate you talking about that integration of renewables with efficiency. Lauren, you want to close out on this topic before we take some questions?

L. Faber O'Connor: Sure. So, as Chris said, we, as well, really see equity embedded in all of our clean energy programs, and the Los Angeles Department of Water and Power is a municipally-owned utility – water and power utility – that's vertically integrated. So it not just delivers electricity, but also operates most of the generation, its generation, as well as runs the grid. And so that is an extraordinarily large institution, responsibility, opportunity. And so everything we do as a utility is really coming from the values of the city itself. And so equity, of course, is a key piece of that.

And the utility recently adopted equity metrics that specifically identify and track how our programs are meeting needs of all of our customer base, and in particular they mostly need to identify where there are gaps as soon as possible. It doesn't mean that we've figured it all out. It doesn't mean that we've kind of met the need. But it does mean that we're doing the work to make sure we're addressing it up front and monitoring it throughout program development and program implementation.

And a lot of it is done not just through our own work, but really through community partnerships, community partnerships at the outset, community-led design of programs. And when I say "community," it's not an equity. This isn't just about the customer base that we want to ensure that are receiving the benefits of our programs, but also that there's access to jobs in this space, and access to jobs across all the work we're doing, whether that's in energy efficiency retrofits, or whether that's in direct-install programs, rooftop solar, and large utility solar, or large-utility scale renewable energy projects. And so we really do see equity across those lenses.

A couple of examples that I thought were worth raising in terms of that nexus on renewable energy, LADWP embarked on probably the most comprehensive that we've seen anywhere in the country,

possibly the world; analysis of how to get to 100 percent renewable energy by 2045, if not sooner. And we say it's the most comprehensive because it's an extraordinarily complicated grid, and the interplay between the distribution and transmission systems, between siting, between the delivery of electricity, as well as the transportation sector and building sector as they become more and more electrified. All of those things are being analyzed together as well as its air quality impacts on a neighborhood scale, and job impacts.

And we're doing that study with the National Renewable Energy Laboratory. It's been a two-year partnership, and it's one of the most exciting things I've had a chance to work on in my role with the city. But that is guided by an advisory group. And this advisory group is populated by a broad array of stakeholders across the city, and in particular environmental and environmental justice communities, key customer base across the city, both tax and rate payer advocates; all of these community members and stakeholders who are ensuring that DWP is delivering programs that are going to work for them.

Another example is our solar rooftops program, part of our community solar overall programming, which is an opportunity for people who may not be able to afford solar on their roof or access it to date. The department can come in and essentially lease your roof in order to build solar on that roof. And it enables some opportunities for financing for roof retrofits, as well. Because that's possibly not surprisingly one of the biggest barriers we've seen to households being able to use rooftop solar, as well as developing our own virtual net metering program to really address some of the needs for our renter community. LA is certainly a renter population. And so the renter community can participate in clean energy.

And then finally, I would just say on the workforce side, recently the department as a response to the mayor's and the department's decision not to rebuild three coastal natural gas generation units across the city, looked at and put out a request for information to the clean energy community on how to fill the gap that it is creating by not re-powering those generation units across three sites.

And as part of that RFI has a significant amount of attention paid to workforce development, workforce opportunities, job creation to really send that signal to the industry that this is a high priority as we're developing and moving into higher penetrations of

renewable energy, and distributed generation, and the DER world overall, which is an informing a DER RFP that will be coming out soon. So those are just a few examples of how all of those things are being integrated together.

Adam Guzzo: Yeah. Thanks, Lauren. So just a reminder, folks, that you've got the Slido option to ask, to use, rather, to direct questions specifically to our panel. One question that I want to take a slightly different approach to was asking about what are some other departments or outside organizations that have helped you achieve your – they asked about Better Buildings Challenge goals. I want to talk about it in the context of energy equity. But if you want to kind of parlay those two together.

So, if you've worked to integrate energy equity into your policies and programs, who have been some key partners? I think Grace talked a little bit about this. But who have been some key partners for you in doing that both internally and externally? I'll let you guys jump in. Grace, you want to start?

Grace Rink: Sure. Well, first the City of Denver has an office of equity right now. So they're a tremendous partner, and their strategy has actually been rather than trying to have every department have a person who is in charge of equity, they instead train teams of us to ensure that we then go and make, and ensure that the principles of equity are embedded in all of our work. So that's been one in-house tremendous asset.

But we're also part of the American Cities Climate Challenge, through Bloomberg Plan piece, and that team has also been tremendously helpful in bringing in resources of folks who work in the equity space nationwide. And that has really brought in a variety of perspectives that I think have been really helpful.

Chris Castro: So, I'll circle back, and then maybe, Lauren, you tie us up here. One is I mentioned SELF. I think SELF is a tremendous organization and we're fortunate to be able to bring them, actually, as part of also the American Cities Climate Challenge. The other is through the USN Urban Sustainability Directors Network, we've been fortunate to have consultants from Kapwa consulting, and I mentioned GARE, the Government Alliance on Race and Equity, who have developed training programs for sustainability offices of all cities – cities of all sizes. And so really encourage you to look into those if you're members of USDN, a tremendous tutorial on how to begin thinking about this notion of equity.

The last one that we're excited about is EVNoire, so as part of the climate challenge, we are bringing EVNoire, which really is an organization that focuses on getting people of color and minorities to think about electric vehicles and to encourage the adoption of electric vehicles in those communities. We're going to be hosting virtual ride and drives, of course, under COVID, we're fearful about doing in-person ride and drives. But we're going to do virtual ride and drives and community engagement and other strategies to really bring that about.

L. Faber O'Connor: – a lot of themes here are certainly in terms of some of the national networks and partnerships, whether that's the American Cities Climate Challenge, or USDN, I would absolutely second those. In LA there are a number of really wonderful coalitions that have been created between local community groups, locally-based that really represent communities on the ground, as well as national environmental non-profits, a significant amount of expertise in different issue areas and analytical capacity, as well.

They come together with local business associations and local unions have been incredible partnerships, whether that's the Repower LA Coalition, or the Energy Efficiency for All Coalition. But also, I mentioned the National Renewable Energy Laboratory. They are working with us, not just on our 100 percent renewable energy study. They're also looking at like a microgrid opportunity at LAX, which is also a proprietary department of the City of Los Angeles.

And our local academic institutions: UCLA, USC, and a number of others do a number of amazing work with us and for us, looking at our solar rooftop potential, looking at job creation benefits through energy retrofits and building decarbonization, and so on; as well as our departments themselves, who are willing to pilot technology. We can utilize their parking lots to put up solar canopies. We can utilize their parking lots to install more EV chargers that can be publicly accessible, not just for the users of those buildings. So a lot of interdepartmental coordination and collaboration, as well.

Adam Guzzo: Thanks, Lauren. Again, we could keep talking about this topic all afternoon. But we're going to shift gears in a minute and talk about building performance policies. Before we do that, I'm just going to briefly put up this slide. I'm not going to have a chance, because we're running a little bit behind schedule, to talk about these tools. But I'll leave this up for a minute, let them speak for themselves, and just know that these three are just some of the tools available from the Department of Energy on this topic area.

So if you see something here that's of interest to you, our Low-Income Energy Affordability Data tool is a great tool. It's been really well-received by the market. We've also got a National Community Solar Partnership that we launched. So if you're interested in looking at community solar, in particular, I encourage you to take a look at that.

So, let's shift gears now for our final topic. We're going to be talking building performance policies. Let's get a sense from our audience whether you are considering. So this is really geared towards our city and county representatives. So is your city or county currently considering passing a policy targeting energy use in new or existing buildings? So we'd love to hear from you about where you are in your city and county on this topic, in particular. And then we'll let the panel talk a little bit about some things that they've done.

And I'll just talk a little bit as we look at the results coming in. And we know that more than 30 local governments across the country have already passed benchmarking and transparency ordinances. We're starting to see more and more local governments add some performance requirements or performance standard; some action that's required that saves, you know, it's an energy-saving action of some kind. And so we're going to hear from our panel to talk a little bit about what policy levers they've pulled. Okay.

So it looks like we've got about 20 percent of our audience that's looking at one of those kind of more next-generation building performance policies. Codes, certainly is one that folks are looking at. Interestingly, benchmarking and transparency – maybe most of our folks on the phone have done that already here. But that's a lower one on the list at this point. Okay. That's very helpful. Thank you.

Let's go ahead and jump right in on this topic. And Chris, you're going to lead us off here. So can you tell us a little bit, just briefly, how you utilize policy levers to target energy savings opportunities in buildings? Any lessons learned? And obviously, you guys are doing a lot, right? So we could talk about this for a long time. But just give us some of the highlights.

Chris Castro: Yeah. And I think this is the case in LA and in Denver. But in Orlando, buildings and the energy use in buildings contribute to over 80 percent of our greenhouse gas emissions footprint. It's a substantial amount. And so obviously there's a dual pronged

approach there. One is reducing building energy use, and two is decarbonizing the energy supply.

And so, first and foremost, we always like to start out city leading by example. We've implemented performance standards for city-owned development and are requiring now LEED Silver upon all new construction with the real focus in terms of about a third of the points that we prescribe in the energy and atmosphere category for LEED. And so we're really trying to focus in on ensuring that we're going above and beyond the code and beyond the norm to put pressure on our performance.

The City of Orlando is part of the initial round of what's called the City Energy Project, which got us thinking about this ecosystem of policies and programs to accelerate energy efficiency in buildings. And we were one of those 30 cities, Adam, that you mentioned that has implemented a building benchmark and transparency policy.

And we went kind of a step above that to require energy audits and/or retro-commissioning in terms of a certain performance of facilities that are complying. We do have our eye on the horizon of what other cities are doing now to require either a building performance standards on the energy side or the carbon side, and are really excited to see the leadership of some of the cities even on this panel in moving in that direction, which has been great.

And the last thing I'll mention on this slide is just that we are looking at carrots for the development community and are soon going to be releasing a Green Building Incentive Program focused on leveraging property tax rebates as a mechanism to really drive much higher performance than we're currently seeing in the market. And we're excited about that. We have big meetings coming up actually soon to enable that. Next slide, please.

The last thing I wanted to touch on is just a workforce development component. And we see this as part of this important ecosystem to drive higher performance development in building operations. We have, for a long time, been partnering with USGBC Florida and the University of Central Florida to basically train students through what we call the ENERGY STAR Specialist training program. And these students are trained through ENERGY STAR Portfolio Manager, and then deployed into the field for buildings that are required to comply per benchmarking policy. And again, gives them real-world experience and building owners an option of getting free technical assistance.

Throughout this process, we worked with our local college, Valencia College, on actually developing a new Associates of Science degree called Energy Management and Controls Technology focused on the next generation of building automation of control systems, deep retrofits, retro commissioning, continuous commissioning, and the like. And so this is now the second semester, and it's been fully booked out. And we're really excited about the living lab that we've been able to create with that.

And then, lastly, just working with the Florida Solar Energy Center and others to get individuals trained for NABCEP, the Solar Installation Certification, and other certifications out there that are trying to push the market. And so we see workforce development as a key piece to drive better performance in our buildings.

Adam Guzzo: Thanks, Chris. Yeah. I appreciate that. I'm glad you touched on workforce. Because as we're asking these buildings to do more and more it takes a qualified workforce in order to operate them effectively. And that's a really key part of the puzzle. We've heard that as a number of folks have tried to drive energy savings in buildings as having the right personnel that know how to operate them. And really, once those opportunities are identified, optimize them. So, thank you. Grace, you want to talk about a little bit what's going on in Denver?

Grace Rink: Sure. Denver's had a benchmark being – am I on mute? No? I'm good? Okay. Denver's had a benchmarking requirement for buildings over 25,000 square feet since 2017, and compliance is very high. We put a lot of effort into the programming. We provide a high level of service for the buildings that are required to report, and I think that helps.

So we, our team absolutely wants to advance a building performance policy. But as in many other cities, I think our biggest hurdle right now is the local utility has taken the position that if we require energy reductions by law, then they won't be able to offer incentives. But, that "but for" clause seems to be common in many jurisdictions and I – maybe I'm optimistic, but I – believe that we'll be able to overcome that.

I think, as I noted earlier, the bigger challenge is going to be in the messaging; making it clear that the jobs created, the cost savings, and the protection of human health are worthy of those up-front costs.

I mentioned earlier that we have the Green Building Ordinance and the Green Stretch Code. I can provide a little more information on that. So, like our department, these policies also grew out of a citizen-led ballot initiative promoting green roofs. We worked closely with staff in the planning department to craft it into a much more powerful tool.

So the ordinance provides a number of configurations, but simply put any new building over 25,000 square feet and commercial buildings that are replacing a roof must install a cool roof, and then they have to choose one additional benefit, such as creating new green space, installing on-site solar, purchasing off-site solar, reducing energy use by at least 12 percent above code, and so on. Or, they can pay into a green building fund.

So we've just released the first year of data, and it showed that 51 buildings received permits under this code, and the majority chose one of the energy efficiency options. Only two chose to pay the fee in lieu of. And I think that's an important statistic. So by providing a wide variety of options and engaging the developers and building owners in the program development, 96 percent of the projects chose one of the beneficial strategies, rather than what seems to be the easy choice of just paying an additional fee.

And so lastly, still related to codes, Denver has a goal of instituting a code by 2035 that would require all new buildings – including homes – to be net zero. And I think the climate action task force is likely to recommend that the timeline be changed to 2030. Now, right now in the thick of a recession, it's a tough change to try to promote. But the process here in Denver of updating our codes actually gives us until 2028 to make that happen. And so we're hopeful that that will be enough time. Adam, back to you.

Adam Guzzo: Thanks, Grace. Yeah. And panelists, you've already gotten a question a little bit about codes, so we'll come back to that here in a minute. But Lauren, why don't you close us out before we take some questions from the audience. And again, go ahead and put your questions into Slido if you have them, and we'll respond to some of those after Lauren talks about what's going on in LA.

L. Faber O'Connor: Sure. And again, I think you're going to see a lot of overlapping themes here in terms of what our priorities are or what we're seeing kind of on the ground. But certainly, as Chris said, buildings are the largest source of emissions in the City of Los Angeles. And so we absolutely have to take this issue on. There's so many reasons why we do this.

If the situation that we find ourselves in right now doesn't show us enough how important the built environment is and the buildings that we inhabit are, we're all at home right now, for the most part. And if you're at work, if you're in a building, you're sort of in your own space and you understand, really, how important it is to be in a healthy, efficient, livable space. And so if anything it's just bringing more and more attention tot his particular issue.

But we had a benchmarking and performance standard in place since 2017. Now we have every building – private-sector building – of 20,000 square feet and above reporting on an annual basis its energy and water use, and as well as our municipal buildings 7,500 square feet and above. We're moving into the audits and retro-commissioning and really performance improvements, as well.

But I'll say that I'm curious if any of the other cities are finding this. But our buildings department did temporarily suspend the reporting requirements of this program under the current emergency declaration and our Safer at Home order. And so that is a reality. That is where we are. I think it won't be difficult to get back on track. And we have, of course, ever plan to do so. But just to say that's a real-world impact of where we currently are.

At the same time, we're also in the development – and this is still going strong in terms of community engagement – of a $100 million energy efficiency program for multi-family and affordable housing. So really getting at low-income and renters community in Los Angeles for energy efficiency improvements. And again, an important example of this being a community-led, community-driven design is something that's ongoing.

An area that also a sign of the times, our direct install program, where we can go into homes, offices, schools, and do an immediate assessment and some direct installations, mostly around lighting for energy efficiency. As with programs that require people going into someone's home or elsewhere, those were just sort of immediately suspended just on the face of them by the utility. And then we took a step back and said, "Hey, wait a minute. There's actually some things that we can do – actually quite constructively during this time."

We see that in the transportation sector. We're fixing roads in high-trafficked areas that were impossible to close down previously, and now we're going in there instead of doing it on the slower residential streets. And here we are actually resuming the direct

install program specifically targeting LA-USD schools. Because they're not in use. And so we know that it's a real opportunity to improve the affordability and quality of those schools.

Heard a lot about building performance standards. And yes, that's a huge priority for us, as well. In our Green New Deal, we do have targets for all-new buildings must be net zero carbon by 2030, and all buildings across the city must be net zero carbon by 2050. We know that that is extraordinarily beneficial and impactful from an indoor air quality perspective, from an energy affordability, and a job creation perspective, in particular. But, the way we envision developing that program was very much dependent on community engagement, with a significant strategy that was just getting underway in real time in Q1 of this year.

And so, as we've had to rethink how do we do that, or in what order do we do things to get to that building performance standard? And again, we're looking at both energy and carbon, as Chris was saying. We've had to think about what can we do in what order to keep this momentum moving? And the utility itself can take on a lot just by developing incentives and programs toward building decarbonization, as well as engaging on finance.

This is an area – and I love to hear what both my colleagues from Orlando and Denver are talking about. But ensuring that we're engaging the investor community, and looking at innovative finance to get at these deep retrofits and deep innovations in buildings is so key. And those are the things that we can continue to do, particularly during this time frame.

Adam Guzzo: Excellent. So, I mentioned that there was a codes question. I'm actually going to go a different direction on a question from the audience and, in turn, maybe a bit selfishly, to how you've prioritized your work in the municipal space, especially in light of the fact that you're all Better Buildings Challenge partners?

So have you set that goal, that 20 percent number or more, what have you done to sort of work to try to drive efficiency, again leading by example in your own buildings? Big question. Maybe just a couple of brief highlights. Obviously, selling your CFO community is a big one, I think, engaging facility managers is another one. So maybe just touch on a couple of things like that.

Grace Rink: Mine's quick because I only know so much.

Adam Guzzo: *[Laughter]*

Grace Rink: I do know that our, the folks who manage municipal buildings in Denver have instituted an energy performance contract that I know has resulted in reductions of at least 11 percent energy consumption in the last two years.

Chris Castro: Yeah. And Adam, I'll quickly speak to this point because I think we've done some innovative work in the municipal efficiency space. First of all, I've got to give kudos to our mayor, Buddy Dyer, our CFO, Chris McCullion, our head of fleet facilities, David Dunn, and our energy manager, Ian Lahiff. All who have been instrumental in working with me to chart this effort forward.

Back in 2016 – this was about a year after we committed to that 20 percent by 2021 – we were fortunate to be able to leverage some of the Recovery Act experiences that we had back in late 2011 and do a rinse, wash, and repeat; essentially implementing municipal green bond for $17.5 million, which has scaled to about $20 million since. And essentially manage our own escrow in house, and use very low cost of capital, use our tax-exempt ability to purchase equipment. And then use continuing services contract of our electricians and others to be able to install those, and at the same time measure and verify those savings in alignment with what the budget office needs to to repay that bond over time.

We were able to amortize that investment over 15 years and see about a 7 year or less payback for the entire project. And we have now implemented efficiency improvements in over 55 buildings, including a full deep retrofit of city hall for all nine floors, our Amway Center, as well as wastewater treatment plants, fire stations, community centers, and the like. We're now tracking at 19 percent savings – almost our 20 percent when you look across the entire 7.2 million square feet of conditioned space.

And the biggest 80,000-pound gorilla for us is wastewater treatment and our venues. Not a lot of communities own their own large venues. I mean, the Amway Center alone is about 1 million square feet. We also own Camping World Stadium and other major venues that they're a part of this pipeline. They're a part of this portfolio that we're trying to save 20 percent to. So to say that we're saving 19 percent even with those major facilities is massive. I think without those, we're close to 23, 24 percent.

So we have exceeded what we wanted to for just traditional administrative buildings. But we're committing to keeping that forward and continuing to chart towards our 20 percent goal for the

entire portfolio, and are just encouraged by what I'm hearing from Grace, and Lauren, and the work that they're doing to hopefully accelerate that stuff here in Florida.

Adam Guzzo: Thanks, Chris.

L. Faber O'Connor: Just to add a teeny bit here is that getting started was actually quite difficult for our building managers, for our buildings to even really understand how to track and measure their energy because of the nature of terminals at LAX, or the Port of Los Angeles, looking at recreation centers, just understanding and building the infrastructure for how to report your energy use was – it was a huge undertaking.

And I think that a lot of us can probably relate to just getting to that point, how much work has to be done. And so I just want to commend the folks on the line, and for those that haven't – although based on the poll, it looks like most have – understand that it's a journey. But because we have our own municipal utility, the LADWP is developing MOUs with multiple departments to do energy efficiency and clean energy at those buildings, to continue the work. Which is exciting.

And then another area that we're looking at, again, in this new world of opening up different ways of thinking about building maintenance and finance is energy as a service, and really starting to educate our building managers and others around what that means and the opportunities that it opens up.

Adam Guzzo: Thanks a lot. So first of all, before we shift gears, I want to give a virtual, at least, round of applause for our panel. Thank you very much for your insights, and for your inputs. We'll do a couple of things to wrap up here, and do so in about five minutes. But thank you all for joining us today. Thank you for your time, all that you're doing, your leadership in your respective cities. We'll go back to the slides. And I'm just, again, not going to have time to talk about these resources.

I'll just briefly mention the one in the middle, which is one of our newer resources. And it's an online platform that was developed in collaboration with 8 EERE Technology Offices, as well as our National Renewable Energy Laboratory to create a dynamic and comprehensive energy platform of integrated localized data for state and local decision makers. So, as we talk about a number of these topics, this is a platform I would encourage you to check out, as well as these other resources on the screen.

So, we're going to close up here in just a couple of minutes. It's my pleasure to introduce my colleague, Nate Allen. He's going to take us to the finish line and highlight a few additional sessions for you to consider this week, as well as how to stay engaged with Better Buildings and DOE beyond this summit. So with that, Nate?

Nate Allen: Thanks, Adam. Can you hear me?

Adam Guzzo: We can.

Interviewee: Perfect. All right. Well, I appreciate you passing this over for me. I was told not to go past 2:30. I've got 2:29 Eastern, so I'm going to cover content quickly. We'll probably run over a minute or two. I hope that's okay. I've just popped over from moderating the education sector meetup and I'm pleased I can join for a few minutes here, just to say hello to everyone and let you know that I'm really looking forward to working with you. This is the start of my third week in the WIP office. But I went through the registration list for this session yesterday. There are a lot of familiar names. It's great to see some old friends. I spent two and a half years as a fellow in the Building Technologies office at DOE prior to joining with WIP. And before that, about ten years working in this space in the NGO world.

So, I'm thrilled to be here. I don't have time for a longer introduction, so let's just keep moving along here. My intention with the next few slides is to quickly talk about ways to stay engaged this week and beyond. So hopefully you've all seen that there's a wealth of content that's being offered and delivered in sessions this week. We've outlined a few of them here that we think are most relevant for local government leaders. We've listed them out. I'm not going to read this. But they cover topics ranging from resilience, to finance, solar power, zero energy, equity, workforce development, and more. I strongly encourage you to check out the full list of sessions, if you haven't already. And if you have questions any time this week, just reach out to us. You'll see our e-mails at the end. We're happy to help. And as a reminder, all of these will be recorded and available in the Better Buildings Solution Center.

Let's keep moving here to the next slide. Maria Vargas referenced this during the opening plenary, so I don't have to say too much here. But looking beyond the summit, we're really excited to launch a summer webinar series, which starts a month from today. So please note, this is in addition to the ongoing Better Buildings

webinar series that runs throughout the year. There's a lot of content right now that we want to be able to share. And I think I probably speak for everyone in this session that webinars are how we're all engaging these days. The Better Buildings Solution Center is your portal for previewing and registering for this content. Let's go to the next slide.

This one is especially challenging to cover briefly. Each one of these technology teams has a robust initiative behind it. What I will say and I want you to take away from this is that this is a chance to engage directly with national laboratory staff to understand the latest R and D and market-ready solutions. I'll quickly highlight a few over the next two slides. But really, just take away that these exist. They're a great opportunity for engagement. There's extensive work that goes on throughout the year to engage with participants. And if any of these topics interest you, I hope you'll reach out to learn more.

Right now we're doing a lot of work in plug and process loads, smart energy analytics, building and envelope research. We've got integrated lighting, which is an evolution from how we've approached lighting R and D work in the part. In fact, right now there's a specific challenge you can participate in around IOT lighting. Space conditioning and more. All of this is on the Solutions Center. Let's keep moving to the next slide, to the Better Buildings Solution Center slide here. So, I think I've now mentioned this the last two or three slides.

This is the portal for accessing all of the work that we do with partners, with our National Laboratories. It's constantly growing, and that's thanks to your engagement. It's where you'll find all the resources where you can, that are outlining what your peers have been doing, and what lessons they've learned on their energy efficiency journeys. With more time, we would watch a brief video about it. We are not going to do that. But you can watch it on the Solutions Center. It's a great video. So how's that for a trailer?

Okay, next. Perfect. On top of the work that we do together through Better Buildings, our office also has a host of tools, resources, best practices from our work with state and local governments. Let me reiterate. I know I'm putting a lot in front of you quickly. The broad takeaway from all of this is that we want to be helpful with your energy efficiency goals. I've mentioned a lot of resources. If you connect with us, we will help get you pointed. Let's go to the next slide.

This is our polling slide. And we don't have to stay on this one for too long. But I do want to just draw attention to it because it's very helpful for our planning purposes and moving forward just thinking about how we work with partners through formats like this. And we want your feedback. So if you could one last time go into Slido and help us rate this session, the instructions are on the screen there, one through five. And if you love it, I'll take the credit. If you hate it, I'll blame Adam. That's a joke. Let's keep moving because the results aren't going to go on the screen. I've got 2:34. We're over.

This is our contact info. I want to close by just thanking our panelists one last time. I think the virtual round of applause was excellent a moment ago. Thank all of you for joining us today as attendees. This is how you can find us. I'm really excited to work with you all through this capacity in WIP. And I hope you enjoy the rest of this week and the Better Buildings Seminar. Take care, everyone.

Adam Guzzo: Thank you, Nate. And thank you, everyone for joining us this afternoon. And we hope we'll see you virtually throughout the rest of the summit. And again, thank you to Lauren, Grace, and Chris for your input. And of course, AnnaMaria Garcia for her remarks, as well. Have a great summit, everyone.