

Kelly S.-Backman: Hello, everyone. Welcome to the closing plenary of the 2021 Better Buildings Better Plants Summit. I'm your moderator, Kelly Speakes-Backman. I am the acting Assistant Secretary and Principal Deputy Secretary for Energy Efficiency and Renewable Energy here at DOE. In today's session we're going to host our Better Buildings partners discussion and then dive right into the questions and questions. Thank you so much for joining us this week.

We discussed so many different challenges and opportunities in the energy efficiency community. We've really enjoyed hearing your input and your feedback throughout our interactive sessions, and we hope you've gathered valuable information that you can take back to your organizations. We have a really exciting closing plenary prepared. In just a minute I'm going to introduce some of the fantastic Better Buildings partners. But before we dive in, there's a few housekeeping points that I need to cover.

Today's session will be recorded and archived on the Better Buildings Solution Center. If you experience any audio or visual issues at any time throughout the session, please send a message in your chat window located at the bottom of your Zoom panel. So by this point you've probably gotten really used to Slido. If you haven't before, then at least during this week of Better Buildings. Our interactive platform for questions and answers and polling and session feedback.

So please go to Slido.com using your mobile device or by opening a new window in your internet browser. Today's event code is #DOE. Choose the Closing Plenary from the dropdown menu on the top left, and we'll be launching a poll right about now. Okay, I can see that up. The poll says where are you getting stuck in meeting your energy efficiency goals?

Type in your answer and send your vote now. Okay. So as you're entering that in – this is interesting. We're taking the votes. Funding, funding, funds, funding. Interesting. So – wow. Split incentives. There's a lot of questions about funding where folks are getting stuck in meeting their goals, setting a roadmap and planning.

This is really interesting. Proving to management that its beneficial. COVID ventilation requirements. Some of these are long-term issues that we've seen in the energy efficiency industry for a really long time, and some of them are new, such as the COVID issues. Marketing consulting services. Interesting. Split incentives.

Another long-term issue that we've seen and we're really trying to tackle. Too many programs. Too many choices. It's kind of like my toothpaste. Split incentives. Lots of good answers. It's going to help us build our programs. This is awesome with 65 responses.

So thank you so much for your – I can't – for some reason I'm not able to see like a chart of the most common answers, but just by looking at these going through the slide I can see funding is really a big issues, and I know that's been a big topic across the week from folks, and maybe it'd be great if we could get some of our Better Buildings partners on this closing panel really to have some conversation about funding and how they've been successful or where they've also seen challenges in the funding issues. So thanks for that input. So in the interest of time we're going to move on. If you all would like to ask our panelists any questions in the Slido app, please submit them any time throughout the presentation.

And we'll be answering your questions during the second half of our session. So with that, I am really pleased to introduce our closing plenary panelists who are going to share their experiences and their insights on some of today's most pressing building, plant, multifamily efficiency issues. Today's panelists are also partners of the Better Buildings Initiative, as I mentioned. Each one has committed to reducing their energy intensity and sharing solutions with the market. So thank you all for being here with us today and for demonstrating real-world leadership in the energy efficiency space.

First, we have with us Steve Skarda. Steve, you want to join us? Hey. *[Laughs]* Steve is the Greenhouse Gas and the Energy Director at Proctor & Gamble where he's responsible for delivering P&G's 2020 sustainability goals on greenhouse gas and energy. Proctor & Gamble joined Better Plant's program back in 2010. It achieved its initial energy intensity reduction goal in 2014 and followed it up with a second goal of 20 percent.

Proctor & Gamble has participated in many workshops and meetings, providing valuable feedback to us, and Steve leads a team focused on science-based goals to reduce absolute scope I and II greenhouse gas emissions by 50 percent by 2030 versus a 2010 baseline. Steve, welcome. We're so excited to hear from you.

Steve Skarda:

Thank you so much, Kelly. And thanks for giving me the opportunity to talk to this group. It's really quite an honor, truly. I've been in my role for about 10 years and I used to attend a lot of

summits and conferences, and as the years have gone by I've really become a lot more selective and really only attend one or two. The Better Plants and Better Buildings Summit is the one event I attend every year. I do not miss it.

I'm sure as the other attendees can attest, this week has been no exception. And for me personally, when I look at the priorities of things that I'm working on, the Better Plants Summit really hits those right at the core. I love talking to my peers, I love listening to academics and research and all of the suppliers. It's just such a great event. So just super honored to be able to talk to you.

I'm going to be talking a little bit about industrials and manufacturing, and I'm going to be doing a little bit through the eyes of P&G. First I want to talk a little bit about just a quick story. I mentioned I've been in my role for 10 years. I actually started off as full-time renewable energy in 2010. The company announced we're going to use 30 percent renewable energy by 2020 and we're going to hire Steve Skarda to have this role.

Dream job, loved it. But when I went around and did these first join-ups, you know, like you go in a new organization, you meet new people, every person I talked to had the same word – oh, let me get my boss. They said impossible. It was like, wow, okay, impossible. What are they talking about?

We knew that it was technically feasible to get to 30 percent renewable energy, but we really needed to do it in a way that drove business value for us, and that at that time really felt like an impossible goal. And as I reflect over the last decade, a couple remarkable things happened. First, I saw an enormous amount of collaboration, specifically we helped with several NGOs and several other companies to found this thing called a Renewable Energy Buyers Alliance. Initially it was like 10 of us, and then the next thing you know the next year was like 40 or 50, and now there's several hundred companies, maybe more than that, that are part of the Renewable Energy Buyers Alliance.

And that collaboration was key to really helping us engage with utilities and regulators and policymakers and really break down a lot of barriers dealing with electricity. Something else that I saw happen is a lot of companies really started to move outside of their comfort zone and take risks in areas that weren't their core business. I mean, it took a lot of courage to do that. When we start talking about things like virtual peak days, initially it was like accounting groups were like, geez, that's – you hear about things like

derivatives, but today that's really become common practice for many of us, but it took a lot of courage for leadership to go and do that.

And then internally the other thing I've seen is we went internally from a push, like really trying to push renewable electricity toward businesses and really help them see where they provide value. Some dominos fell over. As soon as we did our first virtual PPA and we started talking about the fact that we're producing all of our Tide and Downy and other fabric homecare products in the US renewable electricity, all of a sudden our phones started ringing off the hook. All the other marketers were calling us saying, "We need more renewable electricity."

So it's really been a phenomenal decade going from feeling like we had this big, audacious, hairy goal that we had no idea how we were going to achieve to today we actually have achieved that. We're using 30 percent renewable energy. We've actually cut our absolute greenhouse gas emissions in half and it's been fantastic. So where does that put us today? Gosh, I mean, collectively all of us are really at a critical point.

All week we've been hearing about 1.5 degrees. If you haven't gone and Googled greenhouse gas pathway 1.5 degrees Celsius, do it, because it's very eye-opening. We talk a lot about getting to zero by 2050, but when you look at that pathway not only is it zero by 2050 but we have to have significant negative emissions past 2050. And oh by the way, if you look at that it's not a linear path between where the world is today and zero in 2050.

They talk about having to cut the world emissions nearly in half or around half between 2010 and around 2030. So it's a huge challenge in front of us and we have an enormous amount of work to do. So what keeps me up at night today? Half of our greenhouse gas emissions were electricity, the other half were thermal energy. We use about two-thirds thermal, a third electricity. I think that's pretty typical for industrials and manufacturing. We have very high thermal loads.

We have a very solid plan for renewable electricity. We have a goal to use 100 percent – we're already at 100 percent in US and Europe. We're moving some of our rec purchases to tangible projects. But how do we handle all these greenhouse gas emissions from natural gas? We've gotten into offsets. We've actually covered all of the emissions that we can, eliminate with renewable

electricity and efficiency with the offsets this decade, and so we are net zero today.

But that's not the long-term vision. We really need to figure out how to completely eliminate those emissions. And so we're taking a lot of the same tactics. We are starting to collaborate, and when I say starting to we've been doing this for many years. There's a renewable thermal collaborative that we're partnering on, and we have over 50 companies and suppliers and cities and states and government organizations that have all come together and said, "Wow, with the Renewable Energy Buyers Alliance tackling electricity five to ten years ago, this natural gas challenge is even bigger.

We don't have recs. We have all these kind of hairy problems that are on accounting and biomass and policy, and we don't have renewable portfolio standards." And so we're just really trying to put our hands around all of those priorities and put together work groups towards that. So we're starting to collaborate, and we're seeing a lot of progress there. The other thing internally we're starting to look at how do we determine what our roadmap looks like over the next decade?

What does our innovations need to look like? And we're starting with a couple of sites. We have four pilots going on in P&G, and we're looking at technologies and innovations that we need to get those sites to zero. Super excited to hear that DOE is doing similar work. I was a little bummed because when I heard about it we'd already committed to a bunch of sites that were outside of the US and so we're not actually a part of that, but it's fantastic to hear that DOE and several companies starting to do similar work, which is how do we really get to zero?

How do we get to this net zero? It definitely is going to require collaboration between all of us. And we're looking at things like what part does electrification play? Today we get nearly – your very low-cost steam, we just use steam. Well could we be using hot water in the future and doing a better job in heat recovery and heat pumps?

What is hydrogen? Does it have a place in our business in the future? Biomass, bioenergy. We're even looking at things like carbon capture and really trying to figure that market out, because carbon's a good thing. We love it. It's in our products, it's in plants, it's everywhere.

We just need to keep it out of the atmosphere. So it's sort of sustainability nirvana if we can take this thing that has a negative value, carbon in the atmosphere, and then actually put it to a place where it has value and how can we do that? So these are all the things we're working on. These are the challenges. But it all comes back to how do we ensure we're all doing our part in climate change? So that's our perspective and I'm interested in some of the next partners and what they're going to share as well.

Kelly S.-Backman: Thanks, Steve. I love that sustainability nirvana. That's pretty awesome. *[Laughs]* So now I'd like to introduce Jonathan Rose. Jonathan's business is public policy, teaching, writing and not-for-profit work, focuses on creating more environmentally, socially, and economically just and resilient cities. In 1989, Mr. Rose founded Jonathan Rose Companies LLC, a multidisciplinary real estate development planning project management and investment firm to address the challenges of the 21st century.

The firm is one of the largest acquires of affordable and mixed income housing in the nation. Jonathan Rose Companies joins the Better Buildings Challenge in 2014. By reducing its energy usage more than 2 percent a year it's on its way to meeting its 20 percent portfolio-wide energy reduction goal across more than 11 million square feet. The firm has shared its approach for making low income communities across the country more efficient and more resilient on the Solutions Center.

The firm's innovative work has won awards from a wide range of notable organizations, including the Urban Land Institute, the National Trust for Historic Preservation, the Natural Resources Defense Council – I just call them NRDC all the time, it's much easier – American Planning Association, and the American Institute of Architects. Mr. Rose also advises global cities on planning affordable housing, environmental and social issues. Jonathan, we are so glad you're here.

Jonathan Rose: Thank you, Kelly, and I'm so glad you're here too, really. And Steve, that was so impressive. It's so clear that the role of business is essential in the climate issues ahead of us, and I want to add whenever we say climate I always say climate and biodiversity loss, because those are really siblings of our environmental damage that we're doing. So it's really wonderful to hear about a corporation that's way ahead of the curve, so I really salute you on that.

So here's what we do. As a company, as Kelly said, we buy existing affordable housing all across the country, we make it

green, and then we bring social, health, and education programs to our residents, and we build new affordable housing. On the acquisition, what's interesting to me is we have now bought over 100 buildings around the country, and there has not been a single one that did not have energy efficiency just there on the table. So we as a company will invest in any strategy that has a five-year payback or better, and we'll put equity into that for a very simple reason, that a five-year payback's at 20 percent return and it's completely noncorrelated with the rest of the economy.

When you do caulking and insulation and high-efficiency boilers and LED lights, very simple things, and they're turning out a five year or better payback, that's just – a 20 percent return is very hard to find. So we will do that all day long. And what so surprises me is that no matter who we're buying a building from, whether it's from a not-for-profit or a mission-focused for-profit or a greedy-focused for-profit, that every one of them is leaving this savings on the table. Obviously better for the earth and better for the bottom line.

We helped premiere programs with Fannie Mae and Freddie Mac, so Fannie and Freddie now have green building programs in which, for example, the Fannie program will loan an extra 5 percent for making a building greener. So let's say we're borrowing \$20 million, we can borrow another \$1 million to make our buildings greener, and that \$1 million – now imagine that we're applying those to achieve a payback, but all of a sudden we're doing it with money that may cost 3.25, 3.5 percent interest with 30-year amortization. You get enormous retrofit power out of that.

So this combination of financing – the other thing, by the way, is we track all our retrofits to actually make sure the paybacks are really occurring, but as the financing is in place there's enormous power in energy savings on the retrofit side. On the new construction side, we're now building in conjunction with partners L+M and _____ Network in New York City, a project called Sendero Verde. It's the largest passive house project in the United States. And passive house today costs about 7 percent more.

You know, we look towards costs getting reduced, although my sense is it's always going to cost a little more because it's just heavier insulation. The details are much more complicated. Air insulation _____ is more complex. We're doing triple glazed windows, for example. So a triple glazed window is going to cost more than a double glazed window, but the payback to society and the increase in thermal comfort is incredible.

And the other thing is that we are moving into a much more volatile world. So in addition to energy savings and climate reductions, we should also be thinking about volatility reduction and resilience. And what happens when you build a passive house building is, as I understand it, essentially the power can completely go off and we have batteries and solar and generators as backup, and that the temperature will drop into like the high 50's and stabilize in the winter. The other thing that's really clear, and Steve spoke about the challenges of natural gas, natural gas is used in residential and office buildings but to a lesser degree, and clearly the only pathway to carbon neutrality or negativity is we have to electrify everything.

For affordable housing that is expensive. We don't really always have the funds to do the capital improvements to take a fire boiler for, say, hot water or heat and replace them with heat pumps, which is really the rising solution even with the fantastic financing of Fannie and Freddie that I mentioned, and HUD is also doing energy retrofitting financing. So they're all great resources. But that's the next challenge, is to get the cost of electrification down and the financing for it up.

PACE also would be a really wonderful resource on the federal level, release PACE to its full power to pay for the electrification that we need. And a group called Rewired America just recently released a report on Monday that shows how many incredible jobs there are that will be unleashed with the rewiring of America to electrify our buildings. Interestingly, the parallel to electrifying our buildings, and we're also seeing electrification of the transportation sector, is we have to electrify the grid. So our grid just is – we know it's behind the times. Texas and many other incidents have shown us that, so we need to get the grid up to speed in not only physical capacity but also digitized so that it can be smarter and more responsive to the electrification of buildings and transportation.

The next thing I want to put on the table is an idea we call building biologically. So if you think about the climate impacts of the steel and the concrete and the copper and the glass and the other things that we build our buildings out of today, the answer is to build out of more biological materials. There's a movement towards mass timber. It's a fantastic movement. It's still limited by building codes and we need to really get those up to date and transformed so we can build more and more of our buildings in America by wood.

We have to be really careful that the wood is not coming from clear cutting forests. We need to very carefully, sustainably harvest forests and really focus on their long-term, not only the sustainability of the timber yield but the sustainability of the biology. A lot of forests are biological hotspots and we need to take enormous care about that. If you want to learn anything more about forests, I strongly recommend a new book that just came out called *The Mother Tree*, and just to understand how beautifully interconnected forests are.

But there's other things we can do to. To the extent that we are using liquid fuels, we can now be growing fuels out of algae, a really great biological way to get out of fossil fuels and those captured carbon. We can now grow insulation out of mushrooms and funguses. So we can think more and more about substituting the mined and heavy materials that require a great deal of thermal energy to make them and using more biologically-grown materials.

And the last thing I want to talk about is risk, and that is that climate risk is real, biodiversity loss risk is real, but climate risk we're paying for it through insurance. The insurance rates in housing and all real estate sector have gone up 30 to 60 percent in the last few years and are going to dramatically continue to rise. Remember, insurance companies don't pay for things. What they actually do is they collect funds, they average risk, and they put a profit on top of that. So as the risk increases the insurance costs are going to increase.

We cannot have buildings with mortgages – we can't in essence own a building without insurance. And so we need to think of that as another externality. So we talk about payback. So the investments we make are in individual payback. We also have to think about the commons; the climate is a commons, the biodiversity is a commons, and their risk is actually a communal – each one of us is individually contributing to a communal risk.

That communal risk comes back to us through a communal product called insurance, and so it is to all of our benefit to work as quickly as possible to reduce our climate impacts as we can. I think this symposium, Better Buildings, as a wonderful forum for teaching us how to do that.

Kelly S.-Backman: Thank you, Jonathan. Our next speaker is Sushma Masemore. Sushma, congratulations for recently being named the Acting Assistant Secretary for Environment. Just so everyone knows, preceding this Sushma has served as the North Carolina State

Energy Director since 2018. She and her team are working to bring clean energy solutions and sustainable practices to North Carolina businesses, citizens, and government operations. State of North Carolina joined the Better Buildings Challenge in 2012.

After achieving its original energy reduction goal five years early, set a new goal of a 30 percent energy reduction across nearly 140 million square feet of state buildings. The state's worked with DOE to use NREL's, National Renewable Energy Lab, REopt tool to analyze solar PV and storage at eight critical facilities and determine that energy efficiency could reduce resilience microgrid costs at one site by over \$400,000. As the Energy Director, Sushma leads the development of the statewide Greenhouse Gas Inventory, North Carolina or NC Clean Energy Plan, and the NC Climate Risk Assessment and Resilience Plan. And Sushma also oversees the activities of the Climate Change Interagency Council comprised of state agency officials. Sushma, thanks for being here.

Sushma Masemore: Thank you, Kelly. Wow. I hadn't realized the last three years were that busy. But with the audience, thank you for giving us the time to talk about our perspectives related to energy efficiency and buildings. As I listened to the previous speakers, it made me think about a variety of things, so I'm just going top of my head on a few things.

If North Carolina, which is a Southeast state in the United States, if we were a country, we would be consuming the same amount of electricity and emitting the same amount of greenhouse gas as the country of Austria or Switzerland and many African countries. We're typically ranked top 10, top 12 in the nation for the most energy consumption, and equivalently the most greenhouse gas emissions. So I just wanted to put in perspective the size of the state and our overall contributions to the climate issue. And about a year ago we asked scientists who actually produced the National Climate Assessment an analysis of what the science tells us about the impact of climate change on North Carolina.

All science-based, data-driven. We asked them what has the historical trends been and what are the projected impacts of climate change? And they basically said after a year of work, peer-reviewed work amongst their peers within North Carolina but nationally, and they applied the same rigor as they do with the National Climate Assessment. And they said that our state has seen large changes and will continue to see much larger change than any time in our history, and it is with a probability of 90 to 100 percent of outcome that it's very likely that by the end of the

century, under both what we call low and high emission scenarios, that we will see significant changes in our state's climate.

And when you look at the projections of what that temperature change is expected to be seen in North Carolina, under the low emissions scenario, which is really the most likely case with the way current actions are going, or the higher emissions which is also where if we do nothing we'll end up, we're seeing a temperature rise from the current increase of 1 degree Fahrenheit to about a 2 to 6 degrees Fahrenheit by 2050. That's 30 years from now, and that's within the lifetime of my children. And then by 2100, scientists are expecting 7 to 12 degrees Fahrenheit increase in North Carolina's climate.

And this is just one state's analysis of what it will do to our coastal community, our farming community, our Christmas tree community that supplies significant amount of Christmas trees across the country, but just our way of life. So with that, we understood the enormous responsibility that's ahead of us. And part of what we did when we started the work for Governor Cooper in evaluating the options that the state has and the roles state agencies can play, is we looked back at some examples of successes. And in 2007, which is the year the iPhone was introduced, North Carolina actually took upon pretty landmark legislations, and one of those was to require existing state buildings, what we call governmental buildings – that includes our state agencies, our office buildings, our labs, our everything and our universities – to reduce energy consumption by 20 percent by 2010, and our baseline would've been 2002.

And the second goal was to reduce energy consumption by 30 percent by 2015. And by the end of that time period, our state governmental buildings holistically had reached those goals. And I'm going to show you a couple of numbers – or talk to you about a couple of numbers just so you could get a sense of the magnitude of how large and difficult the effort was, but at the same time you can imagine the rewards and still how much more we can do. So about 14 state agencies, 21 university institutions, community colleges, are all participating in that program.

In 2002, our state agencies and governmental buildings spent about \$213 million in energy and water bills. Last year we did our inventory. The state governmental buildings spent \$1.5 billion or so in energy costs. And we had increased our energy intensity but also increased our square feet by about 50 percent. And as a result of the energy efficiency measures that were put in place through

our utility savings initiative program and the partnerships with the state governmental buildings, we calculated that we avoided by achieving those energy efficiency targets about \$1.5 billion in avoided costs.

And when you look at how much the state still today continues to spend on energy, it's about \$350 million, and that's equivalent to \$1 million per day. That's the cost of keeping our lights on and hot water going and our heating systems and everything running. Now post COVID, we don't know what that's going to look like, but that has been our normal trend the last few years. And about almost 50 percent of it goes into electricity consumption. So as we look forward to our strategy for additional reductions in emissions but also savings for taxpaying community, we are looking for those additional opportunities. And it is getting harder, but we think that the actions are still there.

We have a whole team of folks that are involved through our staff but also across the government. Our Governor Cooper set another goal for state agencies to comply, and two of those goals were related to reducing greenhouse gas emissions by 40 percent statewide by 2005, but also increase the building energy consumption by 40 percent. Our legislation currently requires 30 percent. So now we are all working towards that additional 10 percent energy consumption reduction in our buildings, and we believe that with a lot of the proactive steps that the universities are taking today and the state governmental units that are now getting into the process that we can achieve that 40 percent by 2025.

And the amount of savings achieved is, like I said so far, for the OT level it has been \$1.5 billion, and you can imagine what that additional 10 percent will add to that number. But it hasn't been easy, and we know that there's a lot of work to do. So moving forward, our governor has set aside a budget specifically targeting and investing in clean and healthy North Carolina. He's recommended a budget of almost \$474 million to conserve our natural resources as well as clean energy implementation and economic development. And of that, almost \$100 million are being allocated towards energy-related projects, most of them going towards communities and also school systems and R&R-related projects and state buildings.

And then finally, I wanted to close that even though I talked about state buildings really it translates into the commercial sector. When we did our emissions inventory for the state we learned that the commercial sector, the building sector, was the only sector that

was seeing an increasing energy intensity and increasing carbon emissions from one year to the other, and there is significant opportunity for projects and programs to reduce energy consumption but also building resiliency towards these billion-dollar storms that our state continues to get hit year after year. So our team is working on both energy efficiency as well as building resilient communities through our homes and our buildings and our commercial sector. So I'll pause there and happy to answer questions as we talk more.

Kelly S.-Backman: Thank you, Sushma. It's really great to hear a state perspective. And last but definitely not least, speaking of commercial space is David Hughes. David is the Senior Director of Facilities and Energy Management at Walgreens. His team is responsible for maintaining facility conditions and optimizing energy and greenhouse gas impacts across all Walgreens stores located in the United States and Puerto Rico.

Walgreens joined the Better Buildings Challenge in 2011. It met its energy reduction goal this year – congratulations – with a 20 percent energy reduction across its 100 million square foot portfolio. As an essential business, Walgreens remained fully operational through the pandemic and continued improving its energy efficiency of facilities. Congratulations, David, on Walgreens and achieving your goal this year. We look forward to hearing from you. Take it away.

David Hughes: Thanks, Kelly, and thanks for having Walgreens here today. I honestly wish I could add the entire team that helped deliver that goal with me, because as everybody knows it definitely takes an army. You know, like Steve said, I also think this is an incredible conference, and I know my team really gets a lot out of it. At Walgreens we're very focused on taking care of our patients, especially in the midst of the pandemic recovery we all find ourselves in at the moment.

With over 9,000 locations across the United States and Puerto Rico, we are a critical infrastructure provider to so many communities, and we want to ensure people can get the care that they need. And we're actually public about some partnerships we have out there that we're continuing to evolve our stores to include more variety in services to accommodate beyond our traditional offerings. You know, through partnerships like Kroger we have customers able to get grocery-related offerings more and more, and we're also collocating full-service doctor offices with Village Medical at 500 to 700 locations in the next five years.

All of these partnerships, they create very unique opportunities for us here at Walgreens to continue to optimize our energy consumption and the associated greenhouse gas footprint. We are committed to doing our part to tap out climate change. Our approach to energy management here is much like a lot of other large, national, multisite companies. For years we've been retrofitting our HVAC systems at thousands of stores that offer greater efficiency, and we've actually won some national recognition for this program.

In parallel, we've been retrofitting our lighting systems to LED technologies like a lot of other companies both inside and outside our box. We've also kicked off a replacement program this past year for our refrigeration systems, which we're very optimistic should help to further optimize energy consumption. And the positive impact, as Kelly said, of all these programs helped us to achieve our Better Buildings Challenge reduction goal of 20 percent this past year, from 2011 to 2020. Yeah, we're incredibly proud of that.

Doing this over 100 million square feet of Walgreens footprint is not an easy needle to move, as I'm sure everyone here can understand. And beyond the US and our Walgreens stores, across WBA, our global organization, from 2017 to 2020 we were successful in reducing our aggregate greenhouse emissions by 15 percent, making an impact in many, many other countries. So with so many stores across a large geography one of the newer programs that we're excited about internally is the relaunch of what we call our Smart Buildings and EMS program. Managing thousands of stores across that huge footprint, it gives us a small city to make sure that we're operating as efficiently as possible.

You know, putting as much technology and automation and eyes in these stores over our tens of thousands – actually hundreds of thousands of assets and leveraging that data to help guide our decisions with our lean but incredibly efficient teams is honestly the best way that I can see us to help keep bending the curve on our consumption beyond just our efficiency retrofits. You know, we're quickly approaching about one-third of our full rollout plan of this program, and we have a few more years to go. Once it's complete though we think this is going to give us significant benefits to set the stage for the future.

Right now we're going to be able to get out of basic energy reduction. So simply standardizing our set points and schedules

while allowing for regional accommodations, we believe there's still healthy opportunity to reduce our consumption beyond what we can see today, but also balance that with maintaining the right store environment. Store condition insights. Beyond those store conditions and the new partnerships we have, they come with a variety of operating conditions in our simple 12,000 to 13,000 square foot box.

Having a really accurate, dynamic system that can help us isolate these conditions helps us to ensure the right operating conditions in all different corners of the store, from the retail side to the pharmacy to the Village MD locations, to lab partners that we have in there. Also asset intelligence. I'm actually not surprised that funding was the top comment during the poll. I've been doing this for a few years on a commercial level, and like a lot of other national multiset organizations within my team we're always trying to find the right balance between investing in our buildings to keep them efficient but also with those new customer and patient programs that our friends in merchandising and marketing are driving.

So in getting the EMS systems installed well before a store may come due for that HVAC and refrigeration and system retrofit, it really helps us to make much more intelligent decisions. While we know these assets are going to need to be replaced eventually, seeing the more granular performance actually inside the unit that we can extract takes us beyond an exercise on paper and let's us know that, hey, is it the right time to replace this now or do we think we can get a few more years of useful life out of this, and stretch those dollars of capital investment into our stores a little bit further. And again, having an intelligent building platform we believe is critical to setting the stage to identifying the right next strategies that's going to help us build upon our strong foundation of energy efficiency.

Just a couple examples. You know, as mentioned, resiliency here. The flipside of efficiency and reducing our consumption is making sure we have enough power to run our stores. As we submeter multi points in our stores, we're getting a much better education about what our baseload requirements are. This is setting the stage for hopefully us deploying distributed generation technology sometime in the future to keep our stores running during events like the wildfires in California that we've all lived through the past few years here. When we have that one store in that rural community again and we're part of the critical infrastructure, we

want to be able to keep that store operational to deliver those medicines to those patients.

And right now we haven't found the right solution for our smaller load for distributed generation. Many of the scaled technologies that are out there actually operate in the 100 to 250 kilowatt block, and that's way, way, way above our load. We're about 60 go 70 kw on average in a store. So where I'm really optimistic that there are a few vendors out there, but as more vendors enter the fray here that we can start to see the cost of the technology come down and we can start to get more in greater deployment out there. Also, you know, we're excited about developing 360 views by bringing together energy data both through our EMS system and our bill payment system with our facilities management information and any other real estate and building management into a data lake.

We're really hoping to move to a more holistic view of total billing performance and seeing how that can help us continue to position ourselves for increased insights, improved decision-making, and deeper automation hopefully in the future. And of course, all this comes with continued decreases in consumption and the associated greenhouse gas effects. So anyways, that's just a few of the things that the great teams here at Walgreens are doing today to help make an impact on our climate, and they're working hard each and every day. So again, I really appreciate you having us here today.

Kelly S.-Backman: Thanks, David. Thanks so much. And I want to say thanks to all the speakers today across industrial, real estate investment, state government, commercial spaces, leaders in their sectors and across the US economy really. So now we're going to transition over to the final piece of today's session and our week with Better Buildings, the live Q&A. Attendees, if you haven't already, go to Slido.com. I know I see a lot of questions in this chat room, in the Slido.com.

But if you haven't yet already, you can enter the event code #DOE, you can submit your questions or upvote existing questions you would like the speakers to answer. And so let's go ahead and get started. If each of the speakers could come back on screen, unmute yourselves, and let's get going. There's a lot of good stuff here. I can see one of the most popular questions actually was about whether the sessions will be recorded.

So I know that's been answered in the chat and all over the place, so we'll skip to the next one and go to the next question, which is what is one thing that you would encourage everyone in today's

meeting to do within their own organizations? Sushma, we'll start with you.

Sushma Masemore: That's a really good question. In their own organizations. I think lead by example would be what I would encourage. Show a path towards replicating good behavior, good thinking, and using science for good decision-making, because at least within our own sector in government thinking people do listen to effective leaders and it does make a difference. But usually it's not people don't want to do that, it's just they're not aware of it. So it's a learning and take training and a teaching opportunity should be used to lead by example and teach folks what you know and small steps will translate into bigger steps, because they will translate that into their work output.

Kelly S.-Backman: Awesome. David, let's go to you next.

David Hughes: Yeah. I'd say – I believe this throughout my career – tell your story more. You know, all of us know the work we do here is so incredibly impactful and just the simplest things make the greatest impact across your individual career, your company, wherever you're at out there. And honestly, in the energy space, while we don't think others may be as excited as we are, they actually perk up pretty fast and they really pay attention here, and it really gets their eyes focused on what the size of the prize could be. So I would say don't be shy about telling your story and the impact that it's having in your organization, because I think it'll go a long way.

Kelly S.-Backman: Cool. Jonathan, you're next.

Jonathan Rose: There are a million things to say, but the one that just popped in my mind was pay attention. So many years ago we had a building superintendent in a very complicated mixed use building that had a lot of thermal mass who became obsessed with energy conservation, which is a good thing. And he would sit at night with his computer and he would watch – so for example, he would bring in cool air – this happened a building that happened to be in Denver – at night and see how cold could he get all the commercial spaces. So then he would test himself to see how late in the day could he turn on the air conditioning.

Because he had cooled everything down and had the thermal mass absorb the cold. It was really interesting. It was amazing results that just came from his paying attention. Now I know we have a lot of systems that can do that, but for example we find going over

17,000 apartments and a lot of toilets leak, and a toilet leak leads to a huge amount of water waste.

And there's a big difference if you catch it once a month or if you catch it the next day. So at any rate, my sense is getting people to be more aware of conservation and paying attention that we can save a lot.

Kelly S.-Backman: Cool. Steve.

Steve Skarda: For me what I think about is total employee involvement and creating a culture of sustainability. Those aren't easy things to do. One of the stories I like to tell though is our brains get overloaded with information and there's only so much we can process, but there's this sort of trick, right? There's a fancy word – it's called reticular activation – but basically think of the last time you bought or you were getting ready to buy a car.

If you were out on the freeway and you saw that car, you recognized it where normally you would never recognize – you could never say these are the cars I saw on the way home from work today. But once you get that in the top of your brain then it's there. So getting sustainability as leaders, as sustainability leaders in an organization constantly providing messages to the larger organization around sustainability is important, we recognize your contributions to it, those are all very important of creating this culture. We did this thing called Power of Five campaign. I actually talked about it at the Summit a few years ago, so I apologize to anybody if this was a repeat.

It wasn't on the main stage. It was a breakout. But we gave every single employee at every one of manufacturing plants five simple, fun things that they could do. One of them was submit an idea to an ideas energy campaign. And we also did this culture survey across the entire company every year, and one of the things we ask about is sustainability.

And the year we did that campaign our scores on is sustainability a core part of your work jumped through the roof, right? All of a sudden sustainability became a part of everyone's daily work process. They were thinking about it, it was right there in the front of their mind. And so as we can think about leaders in our organization, I can't be in every single site, right? We have 130 manufacturing sites.

But the more and more I can get all of those people recognizing the simple things, like light switches, as well as the really big things like, gosh, we leave that 100 horsepower fan running when the line is down, that is really where we drive out a lot of losses. So that's the first thing that comes to my mind.

Kelly S.-Backman: That's cool. So I'm suspecting a theme here. It's really about communications and telling your story and paying attention to the very things that are in front of you and keeping it top of mind. That is really great responses. I'm going to go to the next question.

So thankful for multifamily, Jonathan, to be represented in the closing plenary. How can we move the multifamily sector and all sectors, the country even, beyond financial bottom line thinking to consider climate for the crisis that it is? Jonathan, we'll start off with you here.

Jonathan Rose: I really appreciate that question because it actually – well, I'll answer this in sections, but it actually calls upon a larger question, which is that I actually believe that we as a nation need to hold the common good. We need to – and there are many commons. There's an ecological commons, there's a social commons, there's actually a governance commons about democracy, a governance commons, and an economic commons in which by the income inequality and economic fairness is a key piece of. And as long as we focus on the individual maximization of a particular project that by its very nature ignores the commons, and we really need to look towards systemic optimizations.

Now that means we have to think about what's best for the whole versus what's best for my individual piece of the whole, and I have a friend named Dan Seigel who's a psychologist who talks about "mwe," which me and we combined. We need to do both of those. On the other hand, we have taxes to pay and mortgages to pay and staff to pay and all those things, and so we have to keep an economic eye out. And I do believe that, for example, focusing on paybacks, which I mentioned earlier, is an important method that we have.

We live in a world in which capital wants return. As I said, we can borrow very inexpensively now. So we need to think about its responsible use. But just as I mentioned that our insurance costs are not just ours, they're really reflective – they're the sum of a global problem. I know this is a very longwinded answer, but what I'm suggesting in response to your very thoughtful question, that we do need to focus on the optimization of our projects, not the

maximization of our projects. And the difference between what's optimal and what's maximal is taking care of the commons.

Kelly S.-Backman: That's great. Would anyone else care to add to that response? Steve?

Steve Skarda: I have a really quick thought. Such a great question, and I love Jonathan's answer. What I'd add to it is Proctor & Gamble recently did a study and they found that nearly 80 percent of consumers said they expect brands they buy to help them live a more environmentally-conscious lifestyle. That's pretty impressive. I mean, that's not always been the case.

If you went back, I don't know, five, ten years ago, back then typically we'd say if we had two products on the shelf and they were identical performance, identical cost, sustainability was a tiebreaker, but that's not where we're at anymore. So really this does drive value. Our consumers, our customers, our key stakeholders, our investors, they all expect this of us. So yeah, it's a hard question and sometimes we feel like we get stuck on financial value, and clearly you heard in my talk we have to be driving business value.

It has to be hand in hand. But the thing we're recognizing now more than ever – and this isn't going to change, right? In fact, if anything I'm going to expect to continue to see more value there, there is value that goes far beyond just like when am I paying my energy bill this month? There is significant value. And actually, that's probably one of the biggest things I've learned in this role over the last five to ten years, is just seeing that shift in the world.

Consumers, customers, stakeholders, investors, they all expect it of us today. So the value is there probably more than most realize.

Kelly S.-Backman: I really appreciate your challenging that a little bit at the premise of the question, that it's more expensive to work for good. So really appreciate both of those responses. Let's go to the next question. This is from anonymous. A lot of these are anonymous.

This week has been full of really great topics and discussions. Looking to the future, what's the greatest challenge that you think we're going to face in the energy efficiency space, and what opportunities are you looking forward to? David, we'll start with you.

David Hughes: That's a really great question. To me it's all about innovation, and that's what – I probably drive my team a little crazy with how

excited I get around innovation, is I look at energy efficiency. What is that next-step function that we can find in efficiency out there in order to take us to the next level? I mean, we've all lived through the LED lighting retrofits and the great improvements we had as we went from 100-plus watt lights down to 50, 60, and now down to small double digits to the low single digits where we are today.

We've got efficient HVAC systems, we've got some efficiency we can get out of refrigeration systems. Solar has come a long way in the past 10 years on a cost and capability perspective. Batteries are now emerging. So to me it's always about what's next. And sorry if this is a little longwinded, but energy efficiency is only one component. You've got so many facets to this.

And what's going to be that next-step function out there and is it something like beyond solar, actual distributed generation out there? There are a lot of other companies beyond just basic battery technology that are deploying solutions, and when that hits scale is that going to really help us to further decarbonize our grid here and actually add to some resiliency, for me personally and a little bit selfishly, a some of the locations I have to maintain operations at?

Kelly S.-Backman: Who wants to go next? Sushma, how about you?

Sushma Masemore: So I'm going to give a perspective from a state government and governmental policy perspective. I think the future is enabling policies and programs that creates a largescale opportunity both in the residential, commercial, industrial sectors, mainly the residential and commercial. So examining and enabling energy efficiency to have a limitless opportunity so that it is not just the cost effectiveness tests that are being applied towards the least cost planning methodologies towards additional measures that could be included into rate-basing those options. Enabling non-wires alternatives and other distributed resources to create these distributed resources that can serve the larger power grid system as a whole, so creating community microgrids and collection of these solutions that could solve larger bigger scale problems.

And so the future is not only in technology development and innovation towards those kind of sensors, monitors, analysis systems, but also the regulatory construct that enables and transcends those options to be actually deployed and used seamlessly. If you allow the market to do its work and have the policies enable that, that's where I think a lot of thinking is going on right now.

Kelly S.-Backman: Awesome. Thank you for bringing your state perspectives to the conversation. Steve or Jonathan?

Jonathan Rose: Electrification.

Kelly S.-Backman: Okay. [Laughs] Steve, anything to add?

Steve Skarda: Yeah, I would say one of the challenges on inefficiency is sometimes the really exciting things to talk about are renewable energy and net zero, and it's easy – those of us in the Summit, those of us who are energy leaders, the thing that gets us most excited is actually efficiency. It's always the first thing we work on. We don't even really have to talk about that because it's just a given that's always the case. But sometimes when we get outside of our core energy team we a little bit lose that focus.

And I heard David say step change a few times. Sometimes we get a little bit stuck in thinking like all the low-hanging fruit is gone, we've done all the easy stuff and now it's really tough and maybe we can't go any further. But it's just so not true, because we said that 10 years ago and we continue to do better and better every year. So it's how do we keep that as the most – you know, within our energy teams we all talk most excited about energy efficiency. I mean, for P&G it saves us hundreds of millions of dollars over the last several years.

It's a big deal and will continue to be a big deal, but that's not the only thing we talk about first. So really trying to not allow some of the other work, other really important work, to overshadow that core, which is the most important thing that we always work on first.

Kelly S.-Backman: Cool. Jonathan, another question directed at you, saying that you do incredible work, and I agree with them, affordable housing opportunities and communities across the country to be more sustainable and resilient. The question is how are you sharing sustainability and efficiency benefits directly with the residents of these communities?

Jonathan Rose: Thank you for that question. So the first thing is – I mean, the most direct thing is our residence – we actually have two kinds of projects. Some of the older ones actually we as landlord pay the utility bills, all the utility bills. But most things built since the – that's in the older ones that we're buying, but anything that we develop, when we install energy-efficient appliance then we're

automatically reducing our residents' energy bills. And this actually can make an enormous difference for residents, particularly lower income residents.

So again, we thank you for the Energy Star program, because we only buy Energy Star appliances. But even as you know, within that there's a range of – by the way I love on appliances that yellow sticker that has the little line over there. I'm always telling my people go to the left side of the line. That's what we want. So it's really using the tools that you have given us that allow us to give our residents more energy savings.

Kelly S.-Backman: That's great. Steve, I've got one for you. And then I think this one can apply actually to each of the panelists. Are you just decarbonizing your supply chain or how are you – maybe if I can rephrase it a little bit – are you encouraging your suppliers to reduce their carbon levels? And if so, how so?

Steve Skarda: Absolutely. We are very committed to all of our omissions, including those from our suppliers as well as just our overall scope three emissions. In fact, right now all of our brands are working towards a journey to develop specific scope three goals in the areas where they can have the biggest impact. Why that is in the area? So for example, we have our biggest footprint across the entire life cycle is around the use of our products specifically like laundry.

So we've had a goal to get 70 percent of loads moved over to low energy loads, laundry loads. That has saved 15 million metric tons of CO2 since 2015. It's actually five times larger than our manufacturing footprint in total. So that's been important work. We actually are later this year going to be issuing a climate transition action plan. It's going to outline our plans towards the long-term objective of net zero emissions for scope 1 and elements of our scope 3 emissions and transportation and suppliers and all those are a part of that.

So more to come, but we are absolutely committed to that and have quite a few things actively going on, some of which we can talk about now, some of which we're going to be sharing more later this year.

Kelly S.-Backman: Fantastic. David, anything that you can share about your supply chain?

David Hughes: Yeah, we're a little early in our journey in that than P&G is. I can't tell you – you know, I'm probably not the most educated to speak

to this extensively, but at least within my team – I'm going to give a shoutout to another group out there – I've had EDF Climate Corps interns in probably for two or three out of the past three or four years, and they've done great work for us to help set the stage for a lot of this work, you know, researching further carbon reduction goals, science-based targets. And as part of that work really looking at our supplier base and where we could potentially help to kick off those conversations. I can't tell you that they have started that work of engaging suppliers, but again, we're early in our journey there than Steve is at this point.

Kelly S.-Backman: Okay. But you're starting that path, which is so important. Sushma or Jonathan, do you have anything to add about supply chain?

Jonathan Rose: Yes. So we've done a lot of work on supply chain, particularly we started out really focusing on nontoxics. And I want to give a shoutout to the Healthy Building Institute which has been so helpful in terms of helping us figure out how to do nontoxics, as low toxicity as possible in our building materials. We have a procurement committee and really wonderful people in the company, so I also want to echo the point that it's not one person that gets this all done. It's many people.

Right now we're trying to baseline and trying to get data. Data's not available on all our different products. And then we're also trying to get the baseline data on social impact metrics like living wage and working conditions and policies too on that. And then we really think that if we can move from building with steel and concrete, which we know is more energy-intensive, to building with heavy timber as a structural system that that's a key target in our sites.

Kelly S.-Backman: Great. Sushma, anything to add from the state government perspective of how you make your procurements?

Sushma Masemore: That's a good question, Kelly. I think that this is part of the learning process for state government. I would say that our Department of Administration that manages the procurement protocol for all state agencies is really at the infancy of some of these terminologies and usage. I think the one place that we have already been asked is related to sustainability and electric vehicles and charging stations and overall it's a big government operation. So to make them change the way they normally have done is a slow process.

But I think that the spirit and enthusiasm is there. The only other thing I would add is that on the external side our department and Department of Commerce has been engaging with business communities and our chambers for economic development. Many businesses that want to come to the state of North Carolina to expand or start operations, this is their – sustainability is part of their top three questions. How does the state enable organizations that have these ESG goals to be met and be supported? And so the conversations are finally starting, and I think there's a lot of work ahead for governmental entities to take an active role in that.

Kelly S.-Backman: Cool. I just find it so interesting that – this is what I love about the Better Buildings Summit also is that everyone has their own path and they're at different stages of development, and you can take on one phase before the other. And so I think this is such an interesting conversation in that it's kind of showing all the various ways along different sectors how to get there. This next question has to do with equity. And Sushma, the question is stated for you, but I would love to hear others, how they're thinking about equity within their own work.

Sushma, for yours it's very specific. It says how does the state make sure its correction facilities are sustainable as well? Can we be equitable when it comes to incarcerated individuals? That's a little bit heavy. But if you have done any work on that, I think our audience would love to hear it.

And from the rest of you, as you're thinking about equity on a broader sense, it's very important to this administration to really make sure that we're working toward better energy and environmental equity and justice, and so would just love to hear your all's thoughts as you're out there in the marketplace and in state government. Sushma?

Sushma Masemore: Yes, I'll give three examples really at a high level to answer the question directly on correctional facilities. Those facilities, the buildings themselves, and the operations are a part of our energy efficiency targeted buildings. In fact, our prison system is part of our Department of Public Safety, and we have a wonderful leader, an energy manager, who knows each building, monitors them regularly, and understands literally like a machine how they operate. And so part of their goal is to serve the state but also the residents in terms of comfortable living situations, food, and all that. There were situations in which we were hit by storms where our food supply to the prison systems as well as the heating,

ventilation, air conditioning was shut down because the whole area in the eastern part of North Carolina was hit by Hurricane Florence.

And it really did bring into lots of questions about safety, environmental health, indoor health, and part of that learning has integrated into more resilience planning and adaptation towards those kind of storm events. On a second idea, example that I want to talk to you about, is similarly in the coastal part of North Carolina we have many communities that are well below federal poverty line. And when storms hit their homes are already under subpar conditions. They're inefficient to start with. Sometimes they're flooded, their power goes out.

They really have no means for getting essential critical supplies. So we are creating these resilient communities program where 20 or so communities are going to be going through a pilot stage where planning will be done at the community level to identify options for residents, businesses, and governmental operations to maintain those critical supply lines. We have a big challenge ahead of us as a state. When a storm hits, power goes off, but also roads are flooded. And our fourth largest metropolitan area, which is the Wilmington area, was literally islanded off from all civilization for eight days because the major highway and all the different roads that led to it could not – you couldn't bring in supplies.

And so power generation system, backup generators, water treatment plants, communication towers, poles and wires and lights, everything was really vulnerable, and we learned a lot from that. The communities that are most disadvantaged, the least able to get out of the way, the least able to go somewhere safe are sometimes the last to get service. And so from my perspective and our team's perspective throughout our planning, that's really a priority, is how do we create an equitable process towards all services of government? And as we plan for the rebuilding of communities, how do we do that?

And then one last example I'll show you is there was – our major utility wanted to build an underground system around a community that typically gets flooded or they have a lot of trees around, and they discovered that the plan was for a community that was in a buyout program and really was unnecessary. So by connecting the utility planners and the decision-makers with the emergency planners, we were able to say this is not a worthwhile project. That money could go into realistic solutions that would really help this community. So I hope that was helpful.

Kelly S.-Backman: Super helpful. Would any of you like to add in just your organization's thoughts and actions around equity? Jonathan?

Jonathan Rose: Yeah. So one of the things about equity is – I mean, there are two parts about equity. So one is the idea of equality and equanimity that are embedded in it, but the other one that's embedded in any organization that is dealing with money is actually equity. So one of the things that we have is a profit share program that touches every employee that has been with us for over two years, and this goes down to our community maintenance staff. And our sense is that as we do well we really need to share it.

Kelly S.-Backman: Awesome.

Steve Skarda: One of the things that comes to mind is – I don't know if folks know Bill Wehl, if that name rings a bell, but he was an energy leader at Google, he led sustainability at Facebook. He's since retired. He started an organization called Climate Voice. But he once said something that really inspired me. He was at Facebook at the time, and what he talked about was what is our end point here?

And he's speaking about Facebook at this time, but I can say the same for P&G. If we end up at the end where we have absolutely zero footprint, zero greenhouse gas emissions, but we're in a community and we're sitting alone on an island, an island of 100 percent greenhouse gas emission-free energy, we haven't succeeded, right? And so I think about a lot, and what it causes me to think is we not only have a commitment to do our part, but really to lead and to be a part of the community, and do our part inside our walls but actually really drive the larger picture outside our walls.

We really need collectively society and our communities to be on this journey with us. And so I think about it a lot. I don't exactly have the answers, but I'll just never forget him saying that. It just has been such a clear picture in my mind around we do not want to end up on an island. We need to be in a community and pushing all of us in this direction. So that's what comes to my mind.

Kelly S.-Backman: I love that. So speaking of pushing others and really trying to make sure that we're open in our efforts both from a communications perspective and bringing others in, there's a question that says what advice do you have for young professionals entering this field? You each get to give one piece of advice to a young professional entering the field of energy efficiency and buildings to see how they can pay their attention to help propel us into this clean energy

economy. David, let's start with you. One piece of advice for youngs.

David Hughes: Yeah. I'd say don't be shy about reaching out and finding a mentor. I reflect back on when I entered the energy field. This was quite a while ago. There was a person out there that really just took me under their wing, because I knew nothing about it. And despite being the midpoint of my career, I dropped into this business and fell in love with it from day one, and this person really took me under their wing and was just happy to share everything.

Because again, like I said earlier, I think we all get really excited about what we do, the impact it can have, and just the cool technologies we get to work with. So I don't think you'll have any problem finding anybody out there that's not willing to share their time and their story and also point you in directions of where you can go for opportunities.

Kelly S.-Backman: Steve.

Steve Skarda: I'd say really professionals run the gamut from like very visionary, we can go and paint this beautiful vision but it's a ways off there, all the way to very practical. And there's a role for all. So find your passion, find where you are in there, and move towards that spot. Personally, I'm probably more on the practical side. I'm an engineer.

I really like to get my hands dirty and dig in. But we need to play in all those spaces. So find your passion in the range from visionary to I'm going to go off and actually do something today and put all of your energy into that.

Kelly S.-Backman: Jonathan.

Jonathan Rose: Join an organization, whether it's local, regional, national. Get on a committee. Just get involved in a network with others, because you'll learn more. It'll help your career in every way. We thrive as being parts of supportive communities.

Kelly S.-Backman: Sushma.

Sushma Masemore: I would say whatever opportunity you're given learn to measure, use data, evaluate what that data is showing you, and then act. There's nothing more a manager or leader wants more than someone to take action based on sound, reasonable analysis, and you can justify spending money, achieving cost savings, energy

savings based on that data. So young people should use factually-based information and material to support decision-making to their managers.

Kelly S.-Backman: I love that. Fact-based, science-based, *[laughs]* let's work on carbon. There's one more question that I have a lot of thumbs up on, and it looks like it's directed to DOE, but I think actually Sushma in your work as well, because it's a little bit politically oriented, and folks around the panel if you have things to add. The question is how can DOE ensure that positive strides are made during this – sorry – that positive strides that are made during this administration are not overturned at the next available opportunity? And I wanted to take a minute to answer that question, but I also want to broaden that question to the rest of our panelists about how we make sure that what we're doing today is durable.

This is an important thing that we're thinking about within the Biden administration of how do we make sure that our work continues on past four years or eight years? And really puts us on that path to a carbon-free economy by 2050. I would say the very most important thing that I can say to this audience is getting folks like you involved and getting you, the voters, not only to vote but to get involved in helping our economy. If politicians can see that we all care about this it will make a bigger difference. And so these sorts of forums like we have with the Better Buildings Summit are exactly that, to share ideas, to get others excited, to get ourselves inspired and excited to move on.

And there's a lot of other sort of mechanical and nitty-gritty things that I could talk to you, but there's nothing more important than really sharing our stories and helping others, helping the public to understand why this is so important. And with that, I'd really love to go a last round for final thoughts and thinking about how we can make what we're doing durable. Sushma, let's start with you.

Sushma Masemore: This makes me think back over 30 years. I started working as a young engineer in 1990 and was involved in climate issues since '92. And it's really been a very up and down cycle. The last 10 years working in state government I've seen exactly where the federal government has gone in terms of whether or not they even believe in science, whether we should actually take action, how soon, how much?

And I think seeing the cycle for so many years, what I see is in creating an ingrained process where the solutions are part of daily decision-making by individuals, whether it's a person or a

governmental unit or a business, and when you really put those decision-makings into the programs and initiatives that you're responsible for, regardless of political influences, if it makes sense and others see value in it, then the only thing left is education. And that's the way we treated this round. This is our second time around in the state, and really I think it's working well because we're doing the state's job, we're serving the public, we're serving the businesses, we're serving what we're supposed to do.

And by preserving that responsibility in a transparent and a factual-based way I think we're getting that general support. The only thing I can point towards is this year our legislature as introduced a variety of legislations around flood resiliency, around power grid security, all without using the word climate change. But it is really working towards that similar solution path. So I hope that we create this momentum where it's on autopilot, and I hope before my daughter goes into the workforce that it is a natural thing to do and talk about.

Kelly S.-Backman: Absolutely. Thank you for sharing. David, do you have any closing thoughts?

David Hughes: Yeah. I would say having worked for large organizations here, I'd say finding alignment with companies and not just getting compliance but commitment from these companies to really start championing the work and they find the value in what's happening. You know, I remember a workshop, an energy workshop, probably well over 10 years ago. I believe I was the CEO of Duke Energy at the time.

Southern Company was just really starting to build out that nuclear facility, we were at the beginning of the combined cycle natural gas plants being built out and the fracking industry was just really kind of hitting its throws, and he said on stage, "Unequivocally we will never see another coal plant built in our lifetime. You know, it is too onerous, it is too much work, it is too costly to even entertain it." Take it from that to what we've seen in terms of renewable energy. Just in the past 10 years – because renewable energy was just a small fraction of the world at that point in time, and companies were playing around with it, trying to figure out what it could be about.

If you look back at commercial adoption over the past 10 years, it's 250 percent-plus adoption from where it was in roughly 2010 to 2020. So getting that alignment with those companies, they're going to keep the train moving. Because in the end they're one of

the largest customer bases out there, and the utilities are going to service that and it's going to keep things moving forward regardless of what anybody on the periphery could want to do. Just one guy's opinion.

Kelly S.-Backman: Jonathan or Steve, closing thoughts?

Jonathan Rose: Jobs. If we can use this time as the administration I think has so wonderfully proposed to create a lot of green jobs, which are by the way essential jobs of the future, so it's not just – these are not for political reasons. They're for the right things for the economy, they're the right things for our American people, and they are the right things for the environment. And if we can really create green energy-related jobs, and there's so many that are desperately needed, I don't see how then the employers, the unions, the associations, everything related with those employed people I think keep the momentum going. As we know now, I keep reading different numbers, but there are 10 to 20 times as many green energy sector jobs as there are coal jobs.

What's interesting is that the coal companies have had political power for 100 years and the green energy sector companies have had political power for probably five years. So there will be a shift in the power dynamics, but if you actually look at the employment dynamics the green economy has a good start.

Kelly S.-Backman: Steve.

Steve Skarda: Talking about keeping the momentum, you know, what do we do internally? We put a great big goal up there and then we focus everybody and our resources and we march towards that goal, and we're really undeterred by what's going on externally. I mean, yeah, competition, policy can help accelerate where we're moving, but we stay focused. I know the question was to the DOE and about the DOE. I don't know if this is just a testament to my technical account manager or the leadership of the Better Buildings Program, but I've never seen the Better Buildings Program let off the gas.

It's always been continuous improvement, it's always been quality tools, these summits have continued to be great. And so just continuing to have that focus, that's really where it's at, right? We talk about now we really are at a critical time. We need to have that focus and keep that momentum and direction moving more than ever right now and just continue doing what we're doing.

Kelly S.-Backman: Well thank you all. Thank you Jonathan and Steve and Sushma and David for joining us. This has been a really amazing conversation, hearing about the practical elements of your work and your hopes and thoughts for the future of making this durable. I just really appreciate your time today in the closing session.

And with that, we'll begin to close out the week. This has been quite a week. It's been a lot of fun. Speaking of, as Steve just mentioned, the Better Buildings Solution Center, and it does have 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 they have a little video. Let's check out the video to learn more about the Solution Center.

[Video plays from 1:26:55 to 1:27:42]

So cool. Thank you so much. Just closing out, I want to make sure to invite you all to attend our Better Buildings summer webinar series starting in June. Partners are going to discuss more of the pressing topics that you've been facing, share best practices and innovative new approaches to sustainability and energy performance. So to register to the Better Buildings Solution Center, go – sorry, go to there and click on "events and webinars" and you'll see the summer series there. And with that, I would like to thank our panelists so much for taking the time to be with us today.

We launched a short feedback survey in the Slido where you launched a lot more questions than we could get to. Wish we could've gotten to more. But we ask that you take a couple of minutes to give us some feedback on this particular session. Your answers will be private. We'll rely on your feedback to design more webinars, future summits and more.

The poll will be open until tomorrow morning, so if you want to go have dinner and come back and answer the questionnaire we'd really appreciate it. If you'd like to learn more about the resources we talked about today, please check out the Better Buildings Solution Center. This concludes our closing plenary and the final session in the 2021 Better Buildings and Better Plants Summit. It's really been an amazing week, and it was so great to hear experts from across sectors discuss and problem-solve through some of today's greatest challenges.

Thank you to all the speakers and the planning team especially for making this event happen. And thank you to all the attendees who took time out of your busy weeks to help join us – come join us

online. We hope that you all will continue the conversations that were started right here this week and bring knowledge and ideas back into your organization, because that's how we make a difference. This event is really made special by your attendance and your participation. And our final ask again is that you fill out that survey we're launching in Slido.

As attendees, you really do have the ability to direct our attention to the topics you want to hear about and help us improve your experience year after year. So let us know how we did this week. We'll see you all again in the summer when we kick off the summer webinar series. And with that, a final thank you to our partners on the line who joined us for the closing plenary. Thanks, everybody. Have a good night.

[End of Audio]