

[The Broadcast is now starting. All attendees are in listen-only mode]

Joe Indvik:

Alright. We are ready to get started. Hello and welcome to the April 28th edition of the Better Buildings webinar series. In this series we profile the best practices of Better Buildings Challenge and alliance partners and other organizations working to improve energy efficiency in buildings. This is Joe Indvik here and I'm thrilled to be hosting what is the second in a two-part miniseries focusing on the financial impacts of resilience in commercial buildings. Last week we talked about the business case for resilience and some of the recent research showing how resilience and financial performance are connected, and this week is all about action.

So we're going to be looking at what commercial building owners can do to finance, implement and report on resilience improvements in their properties. So here's the webinar link for last week in case you missed it. It has been posted to the Better Buildings Solution Center for your reference, but today's webinar stands on its own so you won't be lost even if you missed last week. And on a personal note, I just wanted to thank everyone for attending despite the COVID-19 madness. We've got more than 700 folks registered for this webinar, so clearly the topic of resilience is forefront in everyone's mind, both in a public health sense and in a climate and building performance sense.

Thank you all for being with us despite the circumstances. Moving on to the next slide, again, my name's Joe Indvik. I'm the head of Clean Energy Finance at RE Tech Advisors and the sector lead for the Better Buildings Challenge Financial Allies. Next slide please, Marissa. In the next hour I want to cover four things.

So first we're going to do a brief overview of the key challenges and opportunities that building owners are facing when it comes to taking action on resilience. We're going to look at things like the types of resilience improvements that are available, financing mechanisms that can support those improvements and frameworks for disclosing performance. I'll briefly review the DOE resilience roadmap, which is a brand new tool that we just launched on the webinar last week that's designed to help building owners take action on climate and resilience risk. And then third, we will spend the bulk of our time hearing from our speakers who will provide insights from the commercial real estate and the finance industries, which I'm really excited for.

And then finally, we'll have time for Q&A at the end. Moving on to the next slide, the main thing though that the webinar is designed to do is give you practical tools that you can use to measure, manage and mitigate resilience risk in your portfolios, your clients' portfolios or any building portfolios that you work with. So last week we focused more on the measuring side. This week we're focusing on the managing and mitigating side. Next slide please.

Quite frankly, if you're looking to learn about cutting-edge trends in resilience there's probably no better room to be in than this one. So we have Guy Van Syckle on our panel today who is a senior manager on the investment team at Hannon Armstrong, where he supports clients with funding for a variety of resilience, energy efficiency and renewable energy projects. By the way, Hannon funds about \$1 billion a year in those projects, so they have one of the largest and longest operating histories in the industry to draw upon. Then we have Mike Doty who leads the energy efficiency lending practice at Greenworks, which is a Commercial Property Assessed Clean Energy or PACE financing provider, and Greenworks has been involved in some truly innovative resilience financing deals, including the first-ever microgrid project financed with PACE.

And it's worth noting that both Greenworks and Hannon are financial allies in Better Buildings, so welcome to them both. And last but not least, we have Brenna Walraven, the CEO and founder of Corporate Sustainability Strategies where she advises commercial real estate and other clients with over \$125 billion in assets under management across pretty much all property types; office, retail, industrial, healthcare, multifamily, hospitality and new developments as well. A quick logistical note before we get started, just going back to the last slide briefly. For the Q&A please do send in questions through the chat box in your webinar screen throughout the session and we'll try to get to as many of those as we can.

If it's for a specific speaker please direct it to that speaker. The session is going to be recorded like last week and posted to the Better Buildings Solution Center for your reference. And then finally, like last week, I would ask for your patience in remembering that like everybody else we are doing this webinar from home, so if we have any technical issues please bear with us. Okay. Onto the next slide.

To briefly review what we covered last time, the last few years have seen an unprecedented amount of damages from weather and climate-related disasters with over \$300 billion in disasters in 2017 alone, and in response, not surprisingly, the commercial building sector has been looking for guidance on how to plan for resilience, but there's still a lot of confusion about exactly how to go about that. And for that reason, in 2019 the Department of Energy launched the Finance and Resilience Initiative to look specifically at the impact of resilience risk on financial performance in commercial buildings, and the goal of the initiative was to bring together experts and emerging best practices to help building owners tackle resilience risk. We focused mainly on energy and climate-related issues, although we looked at some other issues too, like seismic risk, for example.

And we formed a roundtable of experts from commercial real estate, finance, insurance industries and began sort of attacking this problem of what building owners need to make better decisions about resilience in an environment of uncertainty. And the flowchart you see on the right-hand side here is what kind of emerged out of that discussion. So this is the set of steps that a typical building owner will need to take in order to effectively manage resilience in their portfolio. And if you would advance the slide, based on those six steps we then worked closely with our roundtable to develop the resilience roadmap, which is a sort of one-stop-shop of resources, case studies and tools for building owners that are all kind of organized around these six steps.

And so last week on the webinar we covered the first three steps on the roadmap. This week in part two we will be covering the last three steps. Onto the next slide. Like I said, we did just launch the roadmap last week, so it's now live and available on the Better Buildings Solution Center at the link you see below, or you can just Google Better Buildings Solution Center and search for resilience roadmap. And like I said, it has a variety of resources and case studies all kind of organized around these six steps.

But before we get to the speaker presentations I wanted to briefly review some of the more interesting and I think actionable insights that came out of the roundtable's conversation around emerging trends in resilience. So moving onto the next slide, first, is that it's important to define what we're actually talking about here when we say resilience, right? So generally, the roundtable defines resilience as technologies and practices that improve the capacity of a building to prevent, withstand and/or recover from a disruption. So

when we think about typical types of resilience projects they often fall into one of these three categories.

You have energy supply projects, which are designed to enable building systems to keep operating in the event of a disruption, so things like distributed generation or renewable energy, battery storage, microgrid, et cetera. Then you have resource conservation projects. These are projects designed to reduce the total energy and water demand of a building, which therefore allows the building to operate for longer and more securely on backup power, either batteries or backup generation. And then you have a third category of structure hardening projects. So these are improvements that directly mitigate damage to properties, the people within those properties, or prevent the electrical system outages in the first place.

So this isn't a fully-comprehensive list, but it's a pretty good indication of the types of projects that we're going to be talking about today, and the key thing that you'll note from this little taxonomy is that energy performance and resilience performance are closely linked, right? Energy systems are some of the most vulnerable systems to disruption, but on the other hand, as our Better Buildings partners are demonstrating every day, improving those systems also comes with additional benefits, things like cost saving and improving occupant comfort. So when we think about resilience at the building level, energy is almost always front and center in that conversation. Moving onto the next slide.

I do want to touch on kind the issue of funding and financing resilience projects as well. So some building owners will, of course, select to just fund these projects internally, but when it comes to third-party financing there's not just one or two choices out there. There's really a whole menu of project finance structures that you can choose from to meet your organization's needs. And this is typically how we think about the taxonomy of different financing solutions at DOE. On the one hand, you have the traditional financing, things like loans and leases that are being used for obviously lots of other purposes in the economy but can also be applied to energy and resilience projects, and then you have the more specialized financing options that are specifically designed from the ground up to support energy and resilience, things like on-bill financing, Property Assessed Clean Energy, which we're going to hear about from Guy and Mike today, and then various flavors of energy services; efficiency as a service, energy performance contracting and power purchase agreements.

So the key takeaway here, and we'll get into each of these in a little bit more detail later, but the key takeaway is that if you have balance sheet constraints or you have concerns about taking on debt or you have credit worthiness issues or any other specific requirements or limitations, chances are that there is still a financial product out there that can help facilitate resilience upgrades in your facilities and chances are there is a financing provider who is interested in your project regardless of what your requirements may be. Onto the next slide. And speaking of those financing solutions, if you do want to learn more about finance beyond what you've learned today I highly recommend you check out the Financing Navigator. So this is an online DOE tool where you can explore financing solutions, you can answer some questions to find the best fit for your organization, and then if you so choose you can connect directly with financing providers through the Navigator as well, and it's available at that link down below or you can just Google Better Buildings Financing Navigator to get there.

Onto the next slide. Speaking of the financing providers listed on the Navigator, we have 50 financial allies in Better Buildings, so these are financing companies who are partners in Better Buildings but who are committed to helping other Better Buildings partners and building owners in general get energy and resilience projects done by providing capital. So you can connect with these guys directly through the Navigator. You can also always shoot me an email. Again, this is Joe Indvik speaking – you'll see my email at the end of the presentation – and I'd be happy to make direct connections to any of the allies that you'd like to speak with.

Onto the next slide. Another great resource we have on the Better Buildings Solution Center is case studies highlighting the successful use of financing to get resilience done. The takeaway here is that there's case studies of just about every type you could imagine. So we have a commercial PACE financing for resilience toolkit that highlighted case studies ranging from a microgrid to a \$40 million seismic upgrade for a hospital in California to hurricane-proofing for a nursing center in Florida. We have a case study on a public-private partnership used to fund a microgrid as a partnership between Centrica and Connecticut Green Bank, and we have an interesting example of an energy services agreement being used to facilitate a combined heat and power system at a city datacenter in London.

So there's a lot more where those came from on the Solutions Center, so I highly recommend you check those out if you're

looking for examples of how financing models can be applied in practice to make resilience happen. We're also going to hear a bunch of case studies from Guy and Mike and Brenna today. And onto the next slide. The final big challenge that the roundtable addressed was the question of how to disclose resilience performance to investors and to the market in general, and if you're a building owner who's paying any attention to sustainability chances are you have heard of most of these frameworks or at least some of these frameworks, but the reality is that they differ quite a bit in terms of how they treat resilience and how they compare to each other.

So one of the big innovations in resilience recently was the launch of the Taskforce on Climate-Related Financial Disclosures, or TCFD, the goal of which is to sort of standardize best practices around reporting on climate and resilience risk. So we'll talk a bit more about these frameworks during Brenna's presentation and we also have a whole resource dedicated to this in the roadmap, specifically focused on kind of demystifying these different frameworks and comparing them all to each other in the context of the TCFD. And going onto my final slide here before handing it over to Guy, one thing that Brenna or any practitioner will tell you about thinking – you know, is thinking about resilience is one thing, but it's where the rubber really hits the road is in putting together a plan for your organization.

So to help facilitate that, the final resource in the roadmap is actually an outline of a resilience management plan. So the idea is that you could literally just copy and paste this outline into a Word document and start rating your organization's plan today. So this isn't rocket surgery, right? These aren't super complicated concepts, but it's helpful to have a framework to at least know where to start if you're sort of grappling with resilience as an emerging issue for your organization.

Some of the topics that we cover in that outline are setting objectives, creating a plan for measuring risk, putting in place a process for prioritizing and implementing improvements across a portfolio, and then tying it all together with the communication and market engagement strategy. So we're very excited to have launched the roadmap last week and are looking forward to your feedback, so please do email me if you have any thoughts or questions about this resource and please share it around. And with that, I'm going to hand it over to Guy Van Syckle who's going to dive into the various options for financing resilience as well as

some of Hannon's most recent case studies on the topic. Guy, please go ahead.

Guy Van Syckle:

Great. Thank you, Joe, and great summary of, you know, the resiliency landscape and how it all shapes up. You can jump to the next slide. One more. Alright. So, Hannon Armstrong, we are the first public company solely dedicated to investing in climate-positive investments, and that takes the form of what we basically bifurcate into the behind-the-meter, grid-connected and sustainable infrastructure and that within that we're talking about energy efficiency, looking at, you know, commercial, industrial solar plus storage, and then certainly elements of grid connected, larger utility scale assets, and then the more pure play resiliency in terms of adaptation to additional flooding or climate-related events.

You know, as it relates to the energy efficiency side, what Joe touched on there, the extent to which you can make a building smarter in the way it utilizes electricity and incorporate redundancies there, that significantly improves the responsiveness and the ability of that building to adapt to downside scenarios. And then likewise, those resiliency projects on basically water management, flood mitigation, wetlands restoration side has also been a great avenue for us and certainly one that we are excited to see grow. Our model is basically partnering with top engineering firms out there, so that may be an energy service company like Siemens or Ameresco or Honeywell, whoever it might be, the large commercial solar installers, so Sunpower, Sunrun, Vivint, and then a number of other engineering firms that implement sustainable infrastructure assets.

Jump to the next slide. The assets that we invest in are very much broad in terms of their geographic and technical scope. So our approach and our financing is basically customized to help the engineering firm that's installing the work and the end customer accomplish their goals and needs, whether that's, you know, stormwater management around the Chesapeake Bay region, combined heat and power system in the Gulf of Mexico to address hurricane concerns or a variety of other projects. So I think what's an important takeaway here is that there is a solution for these projects and we're ready to fund there, as well as a number of other financiers. Next slide.

And this is a sense of, you know, what these projects actually look like. I would say our average investment size is around \$10 million, but that scales up to, you know, \$200 million, \$300 million in some cases, and what you'll see here is it's a mix of both

the energy infrastructure that we touched on a bit as well as the ecological and stormwater management projects. So on the efficiency side, again, this is how can customers be smarter about the way that they utilize energy, how can they utilize some energy savings to pay for upgrades and have other benefits, right? Elevating your boilers or your generators out of the basement to protect against flooding.

On the C&I solar side, you know, a good portion of our solar investments are now being paired with battery storage, which obviously offers some backup power during downside scenarios, and then again, we have a series of different ways to invest in natural infrastructure, which again and again is proving to be a more cost-effective measure of dealing with things like stormwater and flooding and the effects of climate change as opposed to, you know, your concrete more dated solutions. So that's just a sort of the sense, a snapshot of the types of investments that we make. Next slide. Alright. So, you know, what we often here is, oh man, we need to get financing for this deal.

We can't – we're trying to figure out how to get it done. We can't, you know, seem to get it through. What can you do to help me out with financing? And what we're often confronted with is it may not really be a financing problem. In many cases it's often getting all the stakeholders on board that this is a priority project. And so for those that are – you know, have this great resiliency plan, are looking to get that implemented, I would say getting the stakeholders on board in terms of, alright, what is the real value-add of this resilience investment?

You know, what types of risks are you mitigating? Why is this such a good idea? We understand that in concept, but I think really working to communicate that up front to all the stakeholders in charge that are deciding, hey, you know, should we enter into a lease to fund this combined heat and power system to protect us against flood events and things like that, and then also thinking about what else is competing for that potential capital and why does this investment offer a benefit that may not be found elsewhere? So those are the types of things to think about.

You know, we're definitely funding these projects, others are funding these projects too, and the criteria that we're using reflects how we fund and underwrite other types of capital improvements and other types of energy projects. Next slide.

Joe Indvik: Guy, we already received a question, really a comment, congratulating on your Spiderman meme, so...

Guy Van Slyke: [Laughs]

Guy Van Slyke: You know, I got a little pushback from my communications director on that one, but decided to hold true. So, thank you. Alright. So in terms of how do these projects get funded, you know, if you're a municipality, if you're a corporate, you can issue general obligation debt and, you know, take those funds and use it to invest in whatever type of resiliency project you like. Similarly, if you're a municipality you may look at something like a stormwater fee. This is something that's done in Maryland and Pennsylvania in terms of funding the cost of stormwater management out of the proceeds from, you know, basically additional fees from the taxpayers.

And next you have a lease agreement, which would be something that doesn't take, you know, full bond approval process. You don't necessarily have to go through as much of kind of the bureaucracy there. But again, it's going to be a fixed payment obligation over the terms of the lease, so that's one that, you know, again you can use that to fund hard infrastructure, you can use that to fund stormwater management, but it will be locking that counterparty into a fixed obligation that will show up on the balance sheet and as it's assessed by rating agencies.

Next you have what we think of as a performance contract or a services agreement, and this is where the customer's payment, so the person that's actually receiving this resiliency project and the benefit of that will only pay for that project in the event that benefits are realized. So a classic example of this is an efficiency project where an energy service company, you know, like Ameresco installs a boiler system and the customer will only pay in accordance with the boiler system achieving a certain level of efficiency. So that has been a great model for funding energy efficiency improvements.

And, you know, as Joe touched on, in many ways efficiency improvements are resiliency improvements. Right now there aren't necessarily demonstrable savings from resiliency projects that are sufficient to support financing payments, and that's not to say that, you know, if you were to look at the long-term benefits of resiliency projects that, you know, they definitely outweigh the upfront cost, it's just you can't directly point to, okay, you're reducing your insurance cost by \$1,000 and we're going to take

that \$1,000 savings and use that to offset your financing payment, so that's kind of what we're touching on there. And then these types of agreements, sometimes we just credit neutral by rated agencies if the payments are offset by savings.

Property Assessed Clean Energy. Mike's gonna touch on that one, but that's another great option in the commercial sector. Next slide. Alright. So in terms of how these projects are actually funded and what can get funded, so here we're looking at the Parris Island Marine Corps Base. It was a Department of Defense facility in South Carolina that entered into a very large microgrid expansion resiliency project that we worked with Ameresco on to fund. You can jump to the next slide.

And, you know, what this highlights is the goal of the base and the goal of the Department of Defense was to really improve resiliency and ensure that they were able to operate in downside events, whether that's an actual disaster, an act of terrorism, some sort of other outage on the grid and still be able to keep up critical operations. And so what they were able to do and what Ameresco provided for them was an ability to basically island portions of their operations, turn down certain parts of the nonessential portions of the base such that they could keep critical operations running through an advanced control system as well as having a combined heat and power plant on base that could do black start, so without grid assistance to start back up, a battery storage and sola there. This is really a combo of where they were able to take the higher payback lighting and water fixture items and use the savings of that to subsidize some of the longer payback resiliency measures, such as onsite fuel storage and resiliency improvements to things like windows and roofs and that type of thing that may not pay back particularly fast.

Next slide. Alright. And then another model that, you know, we have is how can we think about just funding really these sort of pure play adaptation projects? This one is highlighting the stormwater management project with Maryland State Highway Administration. So, jump to the next slide. Alright. So in terms of how this one ran, really the end goal here is to reduce the amount of sediment and chemical flow and nutrients into the Chesapeake Bay.

The Maryland State Highway Administration is working to comply with obligations of the Clean Water Act to reduce that type of effluent flow, and our partner, Green Vest, is an entity that is very skilled in upgrading natural infrastructure to reduce that type of

flow. And so basically what we did is we funded the stream restoration in portions of Maryland such that the Green Vest was able to generate credits, stream restoration credits, based on, you know, the amount of stream and the length of stream that was mitigated and improved, and then would sell those credits to the administration over time. And so this was a way that the highway administration avoided having to, you know, fund that \$18 million up front, could alternatively pay for that performance over the period of the contract only if, you know, those credits were generated and validated by third party, and what Hannon Armstrong did is we funded the project.

Joe Indvik: I just want to do a quick time check. So about 30 seconds left.

Guy Van Syckle: Sure. Great. So, yeah, great public-private partnership to fund natural infrastructure. And I'll be wrapping it up right there, but I think there are – you know, are glad to support a number of great clients, a number of great projects here, so look forward to hearing from you all and please reach out should you have any questions that we might be able to help address.

Joe Indvik: Awesome. Thank you, Guy. Now we're going to hand it over to Mike Doty who's going to talk specifically about PACE, Property Assessed Clean Energy, and why it can be a powerful tool for enabling resilience in commercial buildings. I've seen some great questions coming in already, so please keep the questions coming. Mike, over to you.

Mike Doty: Thanks, Joe. So we can go to the next slide and we can actually skip the intro here. Onto the next slide. Just a little introduction for Greenworks Funding. So we're an organization that was founded in 2015 that specializes in C-PACE, Commercial Property Assessed Clean Energy, now operating in 20 states across the country and growing every year. Our organization was founded by two women who started the Connecticut Green Bank, and by 2015 the Connecticut Green Bank was originating about 50 percent of all C-PACE originations nationally.

And as much as I love my home state, any time Connecticut represents 50 percent of anything on a national basis you've either found something or something is horribly wrong, so in 2015 spun off to create Greenworks Funding out of the Connecticut Green Bank to fund outside of Connecticut, and since that time we have grown to operating all across the country. And we can move on to the next slide. So to continue on, what C-PACE is is a public-private partnership that allows for advantage financing to be placed

as a public benefit assessment on real estate tax bills across the country. It's enabled by state-level legislation administrated by quasi-public entities across the country at the state level and ultimately funded by private organizations like ourselves who access capital on the capital markets to fund these projects.

C-PACE loans. The best way to think about them – so Guy went through energy performance contracting. At the top, C-PACE is really energy performance contracting for consenting adults. You are taking all those same attributes and benefits that energy performance contracts give while taking out some of the cost and regulatory hurdles that exist when you're trying to implement an energy performance contract, particularly in the private sector. Those costs are not something that a private business is going to engage with, and C-PACE allows for a much lower cost option to provide the same long-term low cost cashflows that organizations are looking for.

So C-PACE loans typically are 20 to 30 years in term, completely non acceleratable, and secured by the building itself and not by any kind of personal or corporate guarantee. And with that we can move to the next slide. The three main benefits of C-PACE, we can finance 100 percent of qualifying measures, which include energy efficiency, renewable generation and resiliency, as I'll cover a little bit later on, it will make even long payback period projects cashflow positive and require no out-of-pocket investment. As I mentioned previously there's no personal or corporate guarantee. In a lot of cases, C-PACE financing can be treated as off balance sheet where you would just be claiming the annual debt service as an expense the same way you would show taxes on your books, but not actually show the liability on the business's books because there's no reason we – we cannot accelerate repayment any time for any reason.

And based on that structure it makes it incredibly easy to qualify for. You'll find the underwriting requirements for C-PACE loans are much more forgiving than other types of commercial finance and we're ultimately underwriting the building much more than we are the operating entity. We can move on to the next slide. So most buildings qualify. It's actually much easier to discuss what doesn't qualify for C-PACE than it is to go through the list that qualifies. Any building that has a commercial property tax liability qualifies for C-PACE. The big ones that don't; public schools, any government facilities and public healthcare facilities do not qualify.

Outside of that, any commercial property type is eligible for C-PACE. As far as what we're able to fund, it goes through a couple of different gates. On the underwriting side, for retrofit projects where there's an existing cashflow in building we can fund up to 35 percent of that building as complete or as stabilized value, and on new construction projects we can fund up to 20 percent of that as stabilized value. In both cases, we wouldn't want to see the total debt on the property inclusive of any other secured debt like a mortgage exceed 95 percent, it can't be in bankruptcy, and in most cases it can't have late tax payments in the last couple of years. We can move onto the next slide.

So the project types, as I alluded to before, any type of energy efficiency or deferred maintenance items. We can fund new construction, gut rehab and solar and renewable as well as resiliency projects in certain markets. And let's move onto the next slide and we can get into that in a little more detail. So where and what can we fund on the resiliency side? During the passage of the state-level legislation, each state has taken a slightly different look at resiliency. Across the country, the most common elements of resiliency that we see written into the legislation is seismic, hurricane, microgrid, EV and stormwater, and this map will be available for your reference as to where that legislation exists and where we're able to lend.

If you move onto the next slide we'll go into the measures in a little bit more detail. So regionally, we need legislation to finance resiliency-only measures, but it's also importance to notice both Joe and Guy have already brought up energy efficiency is a core resiliency strategy and there are many resiliency items that we can fund in every state where C-PACE is available. So combined heat and power has strong cashflows in many environments and we can fund that regardless of whether microgrid legislation is on the books. Energy storage, if you're using that for both resiliency and peak load mitigation we can absolutely fund that.

And a topic that's becoming more and more relevant in what's going on today, so UV disinfecting systems for HVAC is absolutely something we can fund in most states. It has energy and maintenance benefits that will pass the C-PACE test even if there isn't state-level legislation that ultimately talks about resiliency as a C-PACE measure. Regionally, seismic, stormwater, EV, hurricane, flood mitigation and larger microgrids we would require that individual state to allow us to fund that through their regulation. The one caveat there is microgrid may end up being able to stand on its own. It sort of straddles both categories.

You can move onto the next slide. So to dive into a little bit more detail on what types of systems that we can fund. HVAC systems, any kind of heating or cooling system is absolutely a great target for C-PACE. Those tend to be the largest capital investments and largest maintenance costs of commercial buildings and have longer payback. So those two categories I would say are the strongest targets for C-PACE, but we can also fund automated building controls, low-hanging fruit like faucet aerators, spray valves, showerheads, high-efficiency light, VSDs on motor loads and building envelope improvements as well. So while building envelope oftentimes, particularly windows, would require a comprehensive package with some good savings measures attached to make that screen, in many environments we can fund building envelope improvements as well.

We can move onto the next slide. While this is mostly about resiliency and not hugely on new construction today, I did want to just share quickly the value proposition of C-PACE in new construction, while different than retrofitting renovation where you have an existing building where you're trying to reduce operating expenses, on the new construction side we're oftentimes replacing expensive mezzanine debt or preferred equity to significantly increase the returns on capital for a development project. And given our looser underwriting requirements and long-term outlook on the buildings, that can also come in late in the capital stack and really help get a building across the finish line if there are some unforeseen circumstances that create a shortfall in capital closer to the finish line of a new construction project. We can move to the next slide.

Real quick, just wanted to also go over how C-PACE is helping given the economic downturn that we're anticipating in seeing on a day-to-day basis. So C-PACE loans, at least originated through us, we can defer the first payment up to 24 months from the time of close, giving the ability of a building owner to realize savings of the investments that they're making and ultimately improve cashflows through some of the economic turbulence we'll be seeing in the next couple of quarters. We can also retroactively fund projects that were already complete that qualify for C-PACE, up to three years in California and more commonly one to two years across the rest of the country where C-PACE is enabled. We'll move to the next slide.

So this just gives a reference of where retroactivity is available for C-PACE, and we lend in all of these states. If there's a particular

opportunity feel free to reach out. We can move to the next slide and be cognizant of time here. So I wanted to go through a couple of case studies that have particular interest for resiliency. The first is an agricultural facility we did in upstate New York. This facility put in 340 kW combined heat and power system that allowed it to meet most of its heating and cooling need through an absorption chiller system and installing LED lighting that is now powered by the combined heat and power system.

Particularly in agriculture, this had extraordinarily good cashflows because you were seeing benefits on three different levels. So you were providing electricity at a more economical rate for the facility, you were utilizing that waste heat to provide either heating or cooling depending on the season, but they were also purifying the CO2 coming off of the system to feed the agricultural facility, increasing the yield on the plants and eliminating the need to ship in and store purified CO2 for that purpose, so the economic returns on this particular project were great. We can move to the next slide.

Joe Indvik: Mike, just to time check, you got about 30 seconds left.

Mike Doty: Perfect. We can move to the next slide. I apologize if I'm lagging here. So to move to the final case study –

Joe Indvik: Are you – do you want to go to the 777 Main Street slide, Mike?

Mike Doty: Yeah. No, I finally got it up here in front of me.

Joe Indvik: Yep.

Mike Doty: So this was a microgrid project in Hartford, Connecticut. It's a LEED platinum, really strong cashflows as well, and took advantage of mechanical controls, and I'll sort of keep it moving here so we can – the next case study is a little bit more of the same anyway. And you can pass it on to Brenna.

Joe Indvik: Awesome. Thank you, Mike. I appreciate that. We might try to run a little bit over here, maybe 5 or 10 minutes over the hour to get to more questions at the end. But last but not least, we have Brenna Walraven who's going to talk a little bit more from the commercial real estate perspective on why resilience matters and kind of how to effectively disclose resiliency performance. Brenna, please take it away.

Brenna Walraven: Yeah. Thanks, Joe. Appreciate it. Great presentations thus far, and let's just get right into it. So go ahead and advance through the first two slides to get to my agenda. Go one more. Advance. So again, I'm going to talk a little bit. We've heard a lot about some great how, but I'm going to talk about the why and the business case for resiliency.

I also want to really touch on the growing investor interest, which is really pressure, increasingly true what I've seen with my clients. The alphabet soup, as I like to say, there's an app for that. There's also an acronym for that, and so I'm going to talk about some of the different acronyms that speak to benchmarking and disclosure of climate-related risks and opportunities and then wrap up with future expectations on this topic. Next slide. So I think it's important context on this to understand the growing impacts, and we've heard a couple but I'll just touch on a couple metrics that I think are kind of compelling.

The cost of US disasters has quadrupled since 1970 and is averaging about \$100 billion a year. I also think it's important to understand the risks are everywhere. I think people often think that climate change and these kinds of risks are only on the coast, but in fact, in 2017 alone one-third of US counties – counties – one-third of US counties had some of the – declared some sort of national disaster, so it's everywhere it's increasing. And in fact, the good news is that there is ways to mitigate that and we're going to talk a little bit about the business case. The final point is that Moody's increasingly has said back in 2017, so over three years ago, that they will be taking these climate risks into account in their credit ratings.

So what they've said if you're not preparing for and addressing climate-related risks your credit ratings will be downgraded, which will impact your access to capital, so it's starting to have bigger signals. Next slide please. So first, as somebody who spent, you know, almost 30 years in commercial real estate operations, I'm really used to having a plan, a policy and a program for how to prepare for just about everything in real estate, so I think it's something that comes natural, and resiliency is no different. So we have to prepare to reduce risk. If you can click... And really what that needs to include is business continuity efforts, and boy, we're seeing that now with the pandemic, and I've got clients and I've seen their preparedness plans, and pandemic is in there, and it's like, yay, we can prepare for all sorts of issues and resiliency is increasingly part of that.

But it also needs to not only include the building support teams and services but also building tenants and understanding, yes, it's their responsibility to have the plan but is it a reasonable plan? Are they making unrealistic assumptions in their plan? That's where you can step in and help. One more click. This ultimately comes down to my friend Mr. Rogers' comment about, you know, be neighborly, and what I mean by that is are you reaching out to not just your partner buildings but – one more click – also to embrace the community at large, because we're only as strong as our weakest link. So knowing what other property owners in your submarket and overall region are doing and how they're preparing in terms of egress and ingress, for example, but also how do first responders, where are they going to and how are they going to communicate, talking to city and county agencies as well as sustainability and resiliency offices.

It's ultimately about, again, better communication and planning to prepare for these kind of resilience events. Next slide please. So I wanted to talk briefly about the business case, and there really is a business case. I like to use the phrase "save more than we spend," not only in the long term but also in the shorter term, and you've heard some of those solutions from Guy and Mike on how there's ways to structure things to help you do that, but it's also important to understand that these efforts are going to impact brand and that's very hard to rebuild if it gets damaged. There are win-win solutions on how to save costs.

And ultimately, this risk is going to get priced into real estate, and if you're reducing it it's going to enhance value. So sustainability not only means measuring, monitoring, managing, but it also needs to include resiliency adaptation. And ultimately, sustainability and specifically resiliency is increasingly going to be viewed as a proxy, not only good management but also risk reduction. Next slide please. I think it's important to understand as it relates to investor pressure and interest we have to have some market context; why are they increasingly asking about these things and in some cases requiring better efforts not only in environmental, social and governance but resiliency specifically?

One is these increasing climate-related legislative and regulatory requirements. So we know in the US energy benchmarking disclosure is on the rise. There are over 30 cities, 2 counties, 2 states that require you to benchmark and disclose energy performance, but we also have local law 92 in New York where there is effectively a cap on carbon based on your use of energy. So these are going to increasingly come up, so how we prepare for

those, as we talked about – as Joe talked about at the beginning, energy and resiliency are often linked and part of our strategy.

The Security Exchange Commission ruled in 2011 that firms, if they have a potential material risk around an environmental topic in the eyes of the investor – and that's important – then they must disclose it, and we'll talk about how those disclosures are happening and frameworks for that. So ultimately, not only are investors inquiring and appraisals are increasingly accruing sustainability, particularly because there's more energy benchmarking data and other information to track performance, but we're also seeing the demographics shifting and more and more people are starting to care about this stuff, which means it's going to put more and more pressure not only on investors but all of us.

Next slide please. I think another touchpoint on this, GeoPhy partnered with climate risk assessment firm 427 and found that – and did an analysis and found that 35 percent of real estate investment trust properties are exposed to climate hazards. I think it's important to note that that's not companies. That's individual properties. Over a third of properties had these exposures, and this is where Larry Fink, the CEO of BlackRock, you know, led him to send his annual letter and part of where he said, "Our investment conviction is that sustainability and climate-integrated portfolios can provide better risk-adjusted returns for investors."

That's why increasingly investors would care. And you may say, "Well, it's one CEO," but BlackRock represents \$7.5 trillion of investment capital, so they really are a market mover when these types of statements and projections are made. Next slide please. So click through until you get to the red circle. So this table – I'm not going to go through this table, you can't read it anyway, but it's in your TCFD, which we'll talk about here in a second.

It talks about transition risks and the different types of transition risks, and the one I often get asked about is circled here in red, is resource availability. "Come on, Brenna, is there really gonna be a risk of resource availability?" Well, if you click the next slide I can give you one of the best real-time examples that we have here in California, which is due to high winds and low humidity risk of fire and including very devastating fires have happened throughout the state of California. And so in response to that, PG&E has said there's no way we can keep people safe so we're going to have to shut off power.

And so you may be thinking, "Oh, that happens, you know, for an hour or two and it's out in the middle of nowhere." As you can see by this graphic, it's most of the Bay Area and it wasn't just for an hour or two; it was for a week. And so you have to start thinking about what happens to the real estate value and its functionality if there's no power. And I think it was touched on her earlier is that we're seeing clients interested in not only onsite renewables but also storage to help brave these types of events. Next slide please.

So lastly why investors are caring, I just want to tie – we really tend to focus on the accretive value drivers of these efforts in ESG and resiliency, but I think when we think about resiliency specifically, all the items on the right-hand side of the list are the defensive value protectors, how we protect value and in large part tie directly to resiliency, and so this is increasingly why investors care and will be asking about these efforts. Next slide. So next I want to talk about again kind of the alphabet soup. I'm not trying to cover all of them and certainly not in detail.

GRI, the Global Reporting Initiative, and CDP, the Carbon Disclosure Project, are also frameworks around disclosures, but let's move right into SASB because I think it's an important one to touch on. Again, if the investor would see a potential material impact on financial performance, since 2011 you're required as a public company to disclose that information. What was happening in 2011/2012 early on is companies were putting boiler plate disclosures. Hey, I have that risk. What SASB sought out to do is help companies understand what's material and then how to properly disclose not only what the risks are but how those are being managed, and also fundamentally include these types of efforts in a formal strategic planning and making sure that there is recurring materiality assessment.

So, SASB was a framework for how to better disclose material risks and opportunities. Next slide. Now, GRESB is something all again different, but certainly touches on the same concept. It is the GRESB or the Global Real Estate Sustainability Benchmark. It's actually a framework for benchmarking performance of portfolios, and you get benchmarked against peers around environmental social governance elements, but there's also a specific resiliency module for you to benchmark your performance specific to resiliency. And just like other aspects, it is expected that that resiliency module will be pushed into the overall GRESB survey, if not next year very soon after. So what it's trying to do is benchmark your performance against like portfolios.

And you might think, hey, what's the deal if I benchmark or I don't? Well, there's over \$4.5 trillion of global real estate investments reporting into GRESB today and GRESB members represent over \$22 trillion in institutional capital, so it's a signal that more and more investors care, which means more and more of us are going to have to care and respond on performance. Next slide. So, TCFD or the Taskforce on Climate-Related Financial Disclosure. It was actually formed by the Financial Sustainability Board, G20 Finance Ministers and Central Bank Governors, and it aims to provide a voluntary consistent disclosure framework that improves the ease of producing and using climate-related financial disclosures.

And the recommendations from TCFD are meant to be included in traditional financial filings, and it really is aiming to quantify climate-related financial impacts with a strong focus on risks and opportunities related to the transition to a low economy. The way I think about the differentiation between TCFD and SASB, SASB is giving you a framework for current reporting, so annual report, what happened in 2019 – I'm going to tell you about those – what was material, what were the risks, what were the opportunities and then how we managed it. TCFD is more forward-looking. IT's trying to look at not just this year and next year but what's going to happen in the next 5 to 10 or 20 years in terms of these types of risk and how we're managing it and really provide better transparency decision-makers and part of, again, normal traditional financial filings. Next slide.

Joe Indvik: Brenna, you've got about one minute left.

Brenna Walraven: Okay. Great. Thank you. Click through. So just quickly, FM Global did an analysis, and Joe talked about this on the session last week, is that for every dollar spent in mitigating risk and investing in preparedness and resiliency effort there can be as much as \$105.00 reduction in an overall risk. You know, take it with a grain of salt that that's coming from an insurance company, but I think the point of this slide is just to share that the traditional insurable loss calculation is really above the line or above the water and there's so much more risk that can't be insured against around market share, missed growth opportunity and negative investor sentiment. Next slide.

And I think in this we talked about both physical risk and how those can get managed and tradition risk. I think my point here on the graphic on the right is just to show the dramatic increase in climate change laws and executive policies, trying to regulate and

mitigate carbon to reduce the impacts of climate change. So these things are not stagnant. They're going to be on the rise and more important. Last slide for me. You can ahead and click the next to get the red box, but essentially what I wanted to focus on, these are the megatrends and this is produced by Nuveen. If you can go back one – thank you. These are megatrends impacting real estate investment in the next 15 years put together by Nuveen. I think they're really spot on.

But I guess I would say not only does climate change bite but there will be winners and losers, and I think the resources that the DOE climate resilience – excuse me – finance and resilience work has put together this initiative will provide some resources and tools to help you navigate and provide some more information. And again, I appreciate the opportunity to share with you some of the things, and I don't know what rocket surgery is, but we're giving you some tools to help you get through that. I'm good. Thank you.

Joe Indvik:

Thank you, Brenna. I don't have time to get into it. So I think we are going to run about 10 minutes over just to make sure we get to some questions here, so if any of the panelists have to drop off that's totally fine. We'll just – we'll skip over you. But one quick note, if you go to the next slide before we get to the Q&A, is I wanted to introduce the Better Buildings Solutions Center, which we've mentioned a couple times, where you can find over 2,500 publicly available solutions, and this little animation here is showing you how you can explore by topic, by solution type, or go to one of the program or partner pages directly.

And so by visiting the toolkits landing page and clicking on "finance" you can get to the finance and resilience roadmap. It looks like the animation might be frozen at least on my end, but trust me it's there. So just go to www.energy.gov/bbsc to explore all the solution center has to offer. Alright. Moving onto the next slide. Let's do a little bit of Q&A.

So I think provided that our panelists can stay with us for a few extra minutes we'll do one question for each panelist and then a couple general questions. So starting with Guy, during your presentation about Hannon and about resilience finance solutions in general, one of the questions was are there any limitations of these different financing structures for a public versus a private entity? So if you could a little bit about some of the challenges, unique challenges that public versus private folks face in procuring finance that'd be great.

Guy Van Syckle: Sure. Yeah. So one of the key considerations is basically the tax status of those entities. So if you are a municipality you have the option to issue tax-exempt debt, so that might be an advantageous way to fund some resiliency projects. That obviously is not available to corporates, likewise with revenue bonds and things like that. What I think is maybe the most interesting would be as it relates to credit ratings and, you know, the appeal of these service contracts. While tax-exempt financing may be available to municipalities, they may want to go the taxable route in order to avoid impact on their credit rating based on it being a – as opposed to a fixed bond obligation it's a service contract, so that could be advantageous there.

Energy savings performance contracts are done on both public and private entities, and then PACE is really, you know, kind of on the private side. So I think that's most of the landscape.

Joe Indvik: Awesome. Thanks, Guy.

Guy Van Syckle: Yep.

Joe Indvik: And I guess a question for Mike – and anybody else can certainly weigh in as well – they were asking about under a PACE financing arrangement and in cases where you're financing a project that generates some energy savings, does the customer get to retain some of those savings and kind of how does that work in terms of the net cashflows to the customer under a PACE financing transaction?

Mike Doty: Sure. So the best way to think about that is if the project is generating savings above the interest rate of the PACE loan then the customer is retaining all of the savings that exist beyond that rate. So if we're funding a project at 5.5 percent interest and the return on capital investment is 15 percent, then the customer's retaining 9.5 percent a year on that investment with nothing out of pocket, as an example, or if there are cashflows that extend beyond the term of the PACE financing, once the debt is repaid they're receiving 100 percent of that economic benefit.

Joe Indvik: Got it. Thank you. This one is for really anybody who'd like to take it, but Brenna, if you'd like to take a first crack, feel free. How do we – and we talked about this a little bit on the webinar last week, but how do we go about placing a dollar value on resiliency either in a project finance context or just in a general commercial real estate context? Like we're talking about the financial impacts to real estate, but how do you translate amorphous, probabilistic risk

into actual dollars and how do you sort of make decisions based on that information? Any insights, Brenna?

Brenna Walraven: Yeah, it's a great question and probably could be an entire webinar to itself, but I do think ultimately lenders – and I'll give an analogy – but lenders are looking at risk and it's going to be increasing, given our current pandemic environment. There's going to be a heightened awareness on all kinds of different risk, kind of like you've seen a lot of insurance companies, including the parent company for my former employer, USAA, who said, "Hey, we're going to give you a discount on your insurance not only because it's tough times but because you're driving less, so there's reduced risk of crashes and so we're going to reflect that in your premiums."

I think the same thing is happening with both lenders, is when you make some of these improvements not only in efficiency but also in resiliency you're enhancing the collateral, and as that collateral gets enhanced that reduces risk, and so that could manifest itself in better terms like lower interest rate or more available debt that could be taken, all of which drives ultimately value proposition as it relates to net cashflow or net funds from operations. So I think that's where it's going to start coming out more and more.

Joe Indvik: Very good. And I would just add that on last week's webinar we had a graphic in there that specifically maps potential climate and resilience risks to line items on a typical commercial buildings balance sheet and income statement, which if you're kind of struggling how to make climate risk tangible in a financial sense I think that graphic does a pretty good job of showing you exactly when and how it can impact financial performance.

Brenna Walraven: Yeah, it's a great one, too. Yeah, thanks for referencing that. It was really well done.

Joe Indvik: Great. So a question for anybody who'd like to take it, but it's interesting looking at all the different resilience – or disclosure frameworks, none of which are specifically focused on resilience with the arguable exception of TCFD. All the other ones are really ESG frameworks that also include resilience. So, where are we headed. Like 5 or 10 years from now, are we headed towards a more integrated, singular standard for, you know, how to disclose or benchmark resilience performance or are we always going to sort of have this cocktail of different, sometimes confusing, frameworks to deal with? Any –

Brenna Walraven: I'll take a stab.

Joe Indvik: Sure.

Brenna Walraven: I think there's always going to be multiple. Certainly in real estate, GRESB is the de facto standard. It's not only obviously a disclosure but it's also a benchmark. You're measured against your peers. So if you're a publicly-held office REIT your peer set to get benchmarked against is other publicly-held office REITs in the US if you're US based, so I think it's de facto the leader right now but I think there's a lot of pain points on how to do this, meaning that it takes, you know, six months or more to prepare for and then go through the GRESB submittal process, and I think there will be opportunities for more streamline.

The alternative to that is the involuntary benchmarks, which there are many, many of these where they basically go scrape data from your public filings, your website, your public sustainability report and other information and then rate you, and they're involuntary meaning it's gonna happen across 80 industries whether you like it or not. And so I think there's going to be a drive towards more simplified, automated means to benchmark that's today not really available in the market.

Joe Indvik: Okay, great.

Guy Van Syckle: And this is Guy here. I can chime in a little more on that.

Joe Indvik: Sure.

Guy Van Syckle: You know, I supported our team on the deployment of the TCFD disclosure. Big thing there. You know, we submit a lot of these different assessment reports. I think where we got ahead is, you know, proper inclusion into SEC filings and into audited financials in terms of disclosing risks. You know, I think TCFD does a pretty good job of bringing in a whole bunch of different perspectives on risks and opportunities.

That's kind of where I see it ending up. There's just so many of these frameworks right now it's difficult as one that's filling them out to keep track of them all.

Joe Indvik: Yes. Excellent points. So we'll do one more PACE question and then a general one and we can wrap it up there. But Mike, I had a couple clarifying questions for you about PACE if you could just go them rapid fire. Folks were asking if you typically see

geothermal projects as an option for PACE and then also asking about applicability for things like building envelope and various HVAC upgrades, if you could speak to those a bit.

Mike Doty:

Sure. So, quick answer on geothermal is yes. Broader answer on building envelope, in certain areas where we don't have to demonstrate a savings to investment ratio requirement we can 100 percent cover building we envelope. Where we have to demonstrate a savings to investment ratio that is positive over the term it can be a little bit more challenging, and the best way to accomplish that is to take on a comprehensive approach of a building where you're tackling the HVAC, the mechanical systems, the lighting systems, any of the motors in the building while also doing envelope, and oftentimes doing that will result in a project that is ultimately cashflow positive, which is the savings to investment ratio requirement that I mentioned and the question I think I read on that as well. So the technical review of all of these projects would take into account the interactive effects, which I think was the nexus of that question.

So that if you're reducing the size of your HVAC system because envelope improvements allowed the load of the building to be reduced substantially and it required less conditioned air or conditioned heating or cooling, we would absolutely take those benefits into account in assessing the project.

Joe Indvik:

Got it. That's helpful. Thank you. One final question for anybody who'd like to take it, and I've got a few thoughts on this too, is it's — when you're talking about energy savings from projects it's easy to quantify that. It's just kilowatt hours times how much it costs per kilowatt hour equals cost savings. So how do we think about quantifying the quote cashflows or other financial benefits from resilience measures and improvements? Two quick thoughts on that. One is that oftentimes you'll hear folks talking about it in terms of value at risk, which is really the value of the asset times how much of that value could be lost in the event in a particular disaster or event times the probability of that disaster or event occurring, right?

So that's sort of the very basic way to think about it. The other way to do it is sort of relative scoring, right? So there's a lot of providers that are out there, some of which we mentioned today, that will provide essentially a climate risk score or a resilience score at the property level, so you can — some of these providers, you know, you can send them a property list and some information about each property and they'll run it through a system and spit

back out a score and a map showing you kind of how your risk is distributed across the portfolio. So that doesn't get you to as precise a number as energy savings does but it gets you partway there at least. I'm curious if any other of our panelists have thoughts on ways to quantify the benefits of resiliency projects.

Brenna Walraven: Yeah, Joe. I'll just jump in to add. That was excellently well put. I think insurance cost is another big direct way. You have to have conversations with your underwriters to make sure your investments will qualify, but typically they will reduce your insurance costs that tie to it. Energy savings, again, does drop to the bottom line. Lease structure comes into account in that.

And I think if can talk through – I think much like I think it was Guy showed the cost to capital was a great way to show that using PACE can actually lower your cost to capital. I think in the same format you can show how energy savings ties directly to NOI, even taking into account lease structure, but I think well put.

Guy Van Syckle: The one other one too would be as you de risk, you know, if you think about how Moody's and S&P evaluate that type of risk over time and other investors, you know, that would tie directly into their rating assessment of you and then your ultimate interest rate, so interest rate savings at hand if one effectively implements those strategies.

Mike Doty: And the one other quick think I would add is depending on the strategy oftentimes we see the lifespan of those improvements being greater than the standard case they're being compared against, so if you can better articulate any maintenance cost savings or lifecycle cost reductions of having longer life equipment that you're installing for resiliency purposes that can oftentimes increase the value of those types of investments.

Joe Indvik: Awesome. Great answers all around. Well, thanks everybody for sticking with us a little bit over. We just have a couple of slides to wrap up here at the end with a couple of upcoming events. So if you go to the next slide the 2019/2020 Better Buildings webinar series has taken on some pressing topics like this one from across the energy management world with new experts that have led these conversations each month. So we've got only two webinars left, but all the previously-recorded webinars are located in the on-demand webinars library.

And moving onto the next slide, we also wanted to mention hope you can join us in May for the – actually there's only one left. My

apologies. One final installment of the Better Buildings webinar series. So for the past three years 18 Better Buildings partners have been working through the Smart Labs Accelerator to reduce their energy intensity in labs through the development of a Smart Labs program, so this webinar is going to look at some of the best practices for developing a Smart Labs program and feature results from this accelerator participants. Onto the next slide.

We have assembled a couple of additional resources here. Just links to the roadmap and to the navigator again so you have them easy to access. Onto the next slide. We are still doing the Better Buildings Summit this year, but it has transitioned. The Better Buildings, Better Plants Summit has transitioned to a virtual leadership symposium, so it's going to be June 8th through the 11th for four days of webinars and peer exchanges with fellow industry stakeholders and experts.

It's going to be free to attend and registration is now live on the Solution Center, so you can visit the link down below to learn more and register today. And going to the final slide here, I just want to thank our panelists again for taking the time to be with us today. Feel free to contact any of them directly at these email addresses you see here, and then for any general inquiries you can click on the green icons on the left there to find out more. I do want to encourage you to follow the Better Buildings Initiative on Twitter for all the latest news, and you will receive an email notification with a recording of this webinar and the associated slides once it's posted on the Better Buildings Solutions Center.

So, thanks everybody and have a great day.

Brenna Walraven: Thank you.

[End of Audio]

Speaker Q&A

General Questions:

Audience Member: Do airtightness efforts provide the most cost-effective upgrade?

Response: The cost-effectiveness of a given improvement, any improvement, depends on the nature of the asset, location/region, etc. This being said, airtightness is a cost effective upgrade and has resilience benefits - reduces water intrusion as just one example.

Audience Member: How can PACE apply to a higher ed non profit that doesn't pay Real Estate taxes?

Response: As long as the higher ed institution is private most programs allow for the assessments to be levied against the property. Those entities have somewhat reduced economic benefit from most solutions because they are unable to monetize accelerated depreciation and tax deductions on C-PACE interest charges as most are tax exempt. That being said, those institutions are often able to take a longer view of the value of energy improvements mitigating that effect.

Audience Member: Many PACE customers in the midwest have installed renewable energy ... why did the presenters speak so little about this opportunity and its conditions?

Response: We choose to focus on more core resiliency measures. That being said renewable energy is a great use case for C-PACE and solar + storage has a great potential when it comes to resiliency and can be enabled by C-PACE. Happy to discuss further offline.

Questions for Mike Doty

Audience Member: How are financing EE measures like CHP stacking against aggressive state clean energy goals? Are there other resiliency options that are viewed as being more attractive?

Mike Doty: We have funded a few CHP projects, including in states with more difficult regulatory environments like NY. If the spark spread is compelling and the project can work through regulatory hurdles, there is no administrator to this point who has refused to allow CHP. In some markets fuel cells may be looked at more favorably

and there is push to see solar + storage solutions to meet the same ends.

Audience Member: When is PACE funding expected to roll out in Mass, and how can I keep current with that?

Mike Doty: Latest guidance from Mass Dev is a program should be launched in early June. I am confident we will be lending in Mass over the summer time. Happy to begin reviewing and underwriting projects there now.

Audience Member: For CPACE, do you do integrated design, e.g., improve envelope efficiency to allow downsizing of HVAC?

Mike Doty: Yes, typically in two ways. First to the extent the properly sized HVAC equipment is able to operate more effectively more often those savings are considered. Secondly, the reduced cost of the smaller systems reduce the savings burden in order for projects to pencil.

Audience Member: In regards to PACE, what kind of reaction and cooperation are you seeing from the local property assessment/tax collection agencies (who ultimately determine the value of the property)?

Mike Doty: We have yet to see a municipality refuse a request from a local business to adopt a local ordinance when state legislation has been past. The most effective way we have found to approach local leadership is with a potential project in hand so we can clearly draw the benefits of adoption to a constituent. The only issue we have run into is when state level legislation allows for local government control and management of the program the adoption process becomes much more drawn out.

Questions for Brenna Walraven

Audience Member: How are lenders and/or investors placing a dollar value on resilience in project finance, when outages are typically unplanned and unsecured?

Brenna Walraven: Lenders and investors alike are looking at resilience issues in the context of overall risk of a given asset, market, and owner/operator. For example, Moody's and other rating agencies are downgrading if the borrower has not addressed and/or has a plan to address climate change related risks. Ultimately this would mean higher rates of interest, lower loan proceeds/lower levels of

leverage, etc. Investors increasingly are simply not making investments if their due diligence leads them to believe resilience efforts and risk mitigation efforts are not planned or in place. The public REIT or other real estate owner seeking investor capital may not even know that they're "off the list" for some investors. This is why I'm seeing many institutional as well as smaller/regional real estate owners pursuing not only ESG efforts but also resilience efforts - they don't want to be off the list for any investor and they don't want to reduce their access to capital (debt or equity).

Audience Member: How would you assess the reliability of a "resilient" cash flow or savings?

Brenna Walraven: Reliability means - the degree to which the result of a measurement, calculation, or specification can be depended on to be accurate. An example of a reliable cash flow is one that is contracted for and that has reasonable risk protections - such as with an energy performance contract (EPC) where the project developer/installer has a third party to insure performance (for a fee) and where the parties all have reasonable expectations of performance. The savings come from contracted, performance guaranteed (particularly with insurance to stand behind the contract and performance guarantee) resiliency projects would be some of the most reliable.