Sean Williamson: Hello, everyone, and welcome to the 2021 Better Buildings and Better Plants Summit. Next slide.

Welcome to your session, Commercial PACE Toolkit Resources to Propel your CPACE Program. Thank you for joining us today. We have a wonderful session prepared with some fantastic speakers we're going to introduce shortly. Before we dive in, there are a few housekeeping points I would like to cover. Please note today's session will be recorded and archived on the Better Buildings Solutions Center. We'll follow up with today's recording as slides are made available.

Next, attendees are in listen-only mode, meaning your microphones are muted. If you experience any audio or visual issues at any time throughout today's session, please send a message in your chat window located at the bottom of the Zoom panel. Next slide.

I'm your moderator, Sean Williamson. I'm an energy technology program specialist at DOE and coordinator of DOE's Commercial PACE working group. I'm excited to be sharing today's session with you because it represents years of hard work from states, local governments, national labs, private sector stakeholders, and others to expand awareness of Commercial PACE and overcome barriers.

The objectives of the session are to recognize partners for their achievements during the recently completed Commercial PACE working group and to introduce a forthcoming Commercial PACE toolkit designed to help all state and local governments with replicating their success. For those of you unfamiliar with Commercial PACE, or CPACE, it's a form of land-secured municipal financing that uses voluntary property tax assessments to pay for eligible energy efficiency, renewable energy, and resilient building upgrades.

CPACE is a public-private partnership. CPACE programs are enabled by state and local law, while private sector financiers provide capital and contractors complete building upgrades. The CPACE market exceeds over $2 billion, and 37 states plus Washington, DC, have enabled CPACE. DOE is focused on providing education and technical assistance resources to state and local governments so their communities confidently benefit from the energy savings, carbon reductions, and job creation opportunities that come from CPACE. Next slide, please.

We have an informative session planned with some fantastic speakers. I'm going to start with some background and level setting, and then I'll turn it over to our speakers. First, we'll hear from a CPACE work group partner when Maryrose Myrtetus share achievements from the new Philadelphia CPACE program administered by the Philadelphia Energy Authority.

Next, Greg Leventis from Lawrence Berkeley National Lab will provide an overview of three Commercial PACE issue briefs focused on addressing state and local barriers to CPACE adoption and implementation. Last, Sam Cramer from the National Association of State Energy Officials will share findings from two white papers focused on state and local coordination and applying CPACE to small and medium businesses. Next slide, please.

We're excited to announce that today we will be using an interactive platform called Slido for Q and A, polling, and session feedback. For those of you who have attended sessions during the Better Buildings Summit so far, this should be familiar. Please go to www.slido.com using your mobile device or by opening a new window in your Internet browser.

Today's event code is #DOE. Once you enter this event code, please select today's session in the drop-down menu at the top right, Commercial Case Toolkit will be the tag. If you would like to ask our panelists any questions, please submit them in Slido at any time. We will be answering your questions near the end of today's session. I'll give everyone a few moments to open up Slido and select their session. And if you're having any issues, please message our tech support team by using the Zoom chat function.

Let's give folks just a minute to get acquainted with Slido. Once you're there and set up, we're going to launch a poll and request some feedback to get a better sense for our participants in today's session. Okay. So please describe your professional affiliation. You've got government options for federal and state, CPACE program administrator, capital provider, contractor, consultant/auditor, or other. All right. So, out to a quick lead is state and local government representatives. That's fantastic. Got a number of federal government attendees, and some consultants and auditors, as well. Let's give this a little bit more time to play out. All right. Great.

Next, we have an open text question. What do you need to make CPACE financing available or more successful in your jurisdiction? This is really helpful feedback for DOE as we think about providing more targeted technical assistance, and how to best serve stakeholders, including state and local governments, with designing and implementing more successful CPACE programs. So if folks wouldn't mind just typing in one-word responses, and we'll get in a bubble chart of how folks are feeling about what they need to make CPACE more successful.

All right. I see we've got folks with a sense of humor here. A lot of good feedback: knowledge, education is always critical, interest rates, engagement from banks, focus on smaller projects, loans for smaller sizes. Okay. Just give this another 10 or 15 seconds. Trusted in proven administrators with strong track records, technical assistance for customers. All right. Well, with that, let's close down our polls. But I think we've got some helpful information to kind of guide our conversation today, and hopefully we can circle back on some of those needs as part of our Q and A session at the end.

So I want to first recognize the achievements of partners in the Commercial PACE working group. The CPACE working group began in 2018 as a partnership of state and local governments working together to learn about launch and refined CPACE financing. By 2021, after sunsetting in 2020, the working group stimulated $70 million in CPACE investments among 17 state and local partners, exceeding the $60 million goal two years ahead of schedule.

Partners achieved significant milestones during the course of the working group, including passing or amending CPACE legislation, launching programs, financing projects, or developing and executing a marketing plan to extend the reach of an existing CPACE program. Approximately 75 percent of the partners in the working group have launched programs, and 40 percent have financed a project. The working group included more than 70 participants, including state and local advisors, observers, and partners; as well as market partners, who generously shared their time and expertise to educate the working group. The full list of state and local participants can be found on this slide, and market partners are listed on DOE's Commercial PACE working group web page, which I'll drop in the chat later.

I'd like to individually thank the 17 state and local partners who committed the most time and resources and defined the working group's success. This includes Arlington County, Virginia; Bernalillo County, New Mexico; Chicago, Illinois; the Commonwealth of Massachusetts and Mass Development; Cook

County, Illinois; Delaware Sustainable Energy Utility; Jefferson County, Colorado; Las Vegas, Nevada; Milwaukee, Wisconsin; New York, New York; and NYCEEC, Philadelphia, PA; and the Philadelphia Energy Authority; Portland, Oregon; and Prosper Portland; Reno, Nevada; State of Alabama; State of Nevada; State of New Mexico; and Will County, Illinois. Congratulations and thank you all. Next slide, please.

One legacy of the CPACE working group will be DOE's forthcoming CPACE toolkit. The toolkit is a four-part compilation jam-packed with resources that any state or local government can use to navigate barriers and benefit from CPACE financing. Toolkit resources informed by working group participants and developed by DOE, National Labs, NASEO, and PACE Nation support best practices and innovative approaches successfully used by states and local governments. Many of the resources in the toolkit are already available. Others are slated for release later this summer.

Part one of the toolkit will build the foundation starts with the basics, including how CPACE works and the role of the public sector. Part two establish, join, or design a program; helps user identify existing CPACE-enabling laws and programs and understand opportunities, risks, and strategies available to successfully offer a program, as well as leverage data to assess the energy savings and opportunity at the state and local level. Part three will help users implement a program and generate uptake. This helps users to prioritize early wins in the form of completed projects and long-term success achieved by demonstrating energy savings.

Part four focuses on topics of special interest, such as serving underserved market segments, including CPACE for small and medium businesses, CPACE for resilience and new construction, which leverages two Better Buildings mini toolkits now available and additional resources on state and local coordination to achieve success. Each of the presenters today in this session will discuss different elements of the toolkit. Next slide, please.

I'd like to put a spotlight on one of the forthcoming resources in the toolkit: the CPACE market assistant tool. This tool developed by PMNL, or Pacific Northwest National Lab, with feedback from working group participants, can provide jurisdictions with local building and energy data, estimations and analyses to inform CPACE program creation, planning, and implementation. It will be available for any US state, county, or city with more than 1,000 commercial buildings.

The tool was developed to address two persistent barriers we repeatedly hear from state and local governments. First, that jurisdictions aren't able to quantify the energy savings potential at the jurisdiction level, and therefore are unable to justify the effort associated with launching a CPACE program. Second, jurisdictions with programs have limited resources to market the program and coordinate partnerships with property owners, contractors, and others.

The tool helps address these barriers and more. It can be used to demonstrate energy savings and opportunities in a state or county and to set goals for what a program can achieve. Because the tool presents detailed information on high-potential building types and retrofit technologies, CPACE program sponsors and administrators can use that information to officially target their resources to forming partnerships with specific contractor classes and property owners.

The tool and underlying methodology marrying data from DOE's city and county commercial buildings inventory, source from co-star, the energy information administration's commercial buildings energy consumption survey, or CBECS; and DOE's scout tool, and other data sources, as well. The tool produces a customized report for any jurisdiction, including an executive summary with actionable takeaways and three sections that focus on commercial building characteristics, energy usage characteristics, and energy and dollar savings estimates associated with specific building retrofits; with details presented by building use type, building size, and more.

The table on this slide demonstrates one of the many useful outputs produced by the tool, which is state or local government can use the leverage and understand the energy savings potential in their jurisdiction. Building use type and building size categories can also be clearly demarcated. Our first speaker, Maryrose Myrtetus, will share more on this and how the Philadelphia Energy Authority has applied information generated by a draft beta version of the tool to inform program-related decisions. Next slide, please.

With that, I will introduce our panelists. Our first speaker today is Maryrose Myrtetus. She oversees the Philadelphia CPACE program, which helps commercial properties pay for energy efficiency and renewable energy projects. She also runs the

Philadelphia Green Capital Corporation, the New Green Bank of the Philadelphia Energy Authority.

Our next speaker will be Greg Leventis. Greg is a program manager of the electricity markets and policy department at Lawrence Berkeley National Laboratory. He conducts research and analysis of demand-side efficiency. His focus includes efficiency finance, costs of saving energy, and incentive program design and analysis.

Our final speaker will be Sam Cramer. Sam supports NASIO's financing program electricity planning initiative, leads NASIO's state energy planning assistance, and conducts research in a range of issues, such as energy water nexus and CPACE. Thanks to all of our speakers for being with us today.

And with that, I'll turn it over to Maryrose.

Maryrose Myrtetus: Great. Thank you so much, Sean. Next slide, please.

So hi, everybody. My name is Maryrose Myrtetus, and as Sean said, I run the CPACE program for the City of Philadelphia. I work at the Philadelphia Energy Authority, and we are the program administrator. Next slide.

Before I jump into our work on CPACE, I just want to spend a minute telling you about the Philadelphia Energy Authority, PEA. We are a municipal authority formed by Philadelphia City Council in 2010 to promote and grow the clean energy economy in the city, and to support large municipal energy projects. We really see energy as a tool for impact in a variety of sectors: in the residential space, commercial space, at the municipal level, city institutions, with the school district, and a variety of different spaces. And to that effect, we launched a ten-year energy campaign to spur $1 billion of investment and create 10,000 jobs in the clean energy and energy efficiency sectors in Philadelphia.

As part of that energy campaign, we've run a number of programs, including Solarize, which is a kind of classic program that you see in a number of states and cities across the country. And we're happy to have one of the largest Solarize programs in the country for residential rooftop solar. We've also worked with the school district on energy projects for over 20 schools right now ongoing, and have procured a 70-megawatt solar project to offset about 20 to 25 percent of the city's energy use. So in addition to all of that, we also run the CPACE program. So, next slide.

So, as quick background on CPACE in Philadelphia – and this kind of tracks with our history as a participant in the working group that Sean was talking about a few minutes ago – CPACE was enabled via statewide legislation in Pennsylvania in 2018. In Pennsylvania, every county has to also pass enabling legislation. So Philadelphia authorized CPACE within the city limits in 2019 and appointed PEA to be the program administrator. So we launched the program at the end of 2019, and in 2020 we were really happy to close the first three deals that closed in Pennsylvania all closed in Philadelphia. We've actually closed another deal this year, so we're at four so far, and hopefully a couple more coming soon. And really, our goal is to use CPACE as a tool that kind of helps support this robust clean energy and energy efficiency economy throughout the city. Next slide.

From our perspective, CPACE really supports the sustainability goals that the city already has. We have robust sustainability goals in line with the Paris Climate Accord to reduce our carbon emissions by 80 percent by 2050. And CPACE is an important tool to help us get there. As you can see on this slide, about 70 percent of the city's carbon emissions come from buildings and industry, and obviously CPACE is a tool for commercial buildings to use. And a good deal of the energy produced in those buildings is wasted. And there are efficiency opportunities there.

Based on some average estimates of CPACE projects, we see that around $1 million of CPACE deployed equates to around 1,000 cars taken off the road in terms of carbon equivalency. And so this is a great tool to help us move towards our carbon reduction goals. Next slide.

So, I know that CPACE has been covered in another session earlier today, and Sean kind of touched on the high-level overview of it. So I'm not going to get into the nitty-gritty details of exactly how it works. But I did want to just highlight that in Philadelphia, and in many programs across the country, you can use CPACE for three different kind of buckets of projects.

The first is retrofitting existing buildings or installing new equipment in existing buildings. The second is really substantial gut rehabs or new construction buildings. And we're increasingly seeing CPACE as a popular tool for filling the capital stack on that kind of work when the buildings install energy efficiency, water conservation, or renewable energy components to their buildings.

And the third bucket is really using CPACE as a refinancing tool. So, perhaps the building owner did not know how to access CPACE at the time of construction, or for some reason they knew how and they didn't go through with it. If they installed measures that are eligible for the program, we allow for property owners in Philadelphia to refinance those measures with CPACE, which oftentimes helps them free up cash flow and support their building and their business even more. So we actually have closed a project of each of these types in Philadelphia, and I'd like to tell you a little bit about the case studies for closed projects so far. So, next slide.

So the first case study today here is a solar installation on top of a day care in Philly. The CPACE financing was really used for the complete solar project and some roof repairs required in order to facilitate the solar, as well as all of the soft costs involved in kind of designing and financing the project.

The really neat thing that I like to highlight about this project is that because of the nature of CPACE financing is really long-term and competitive rates, the project was able to kind of pencil and generate savings for the building owner, just through the CPACE financing structure and the tax credits available, which is noteworthy in Philly, where we have pretty low utility rates on the commercial side. And so this is kind of a great proof point of the way that a financing tool can make a project kind of get over the finish line in terms of saving money and going green for a building owner. Next slide.

So, case study number two is actually the first project to use CPACE financing in the state of Pennsylvania. This is a mixed-use building in the Kensington neighborhood of Philadelphia, and they, it was essentially, basically new construction. It was a substantial gut rehab, and they needed to, they were planning to install a bunch of energy efficiency and water conservation measures and needed a financial option to fill their capital stack to get the project over the finish line and bring it to fruition. And CPACE kind of provided that tool for them. So, this is kind of a highlight building of how CPACE can be used in new construction and to incentivize new construction to also take on greener measures as they're moving forward. Next slide.

And finally, our third case study is actually a refinancing. So The Met is a large entertainment venue in Philadelphia, and it completed construction, I believe it was in late 2018. And so in 2020, when it was looking for ways to kind of improve its cash flow in the face of not being able to use the entertainment venue during COVID, they actually looked back and realized that they had installed a number of measures that were significantly above code and were eligible for CPACE financing and were able to refinance with CPACE, take out more expensive debt, and just generally strengthen their overall position. Next slide.

So, I'm proud to be able to kind of report on these early CPACE projects closing in Philadelphia and in Pennsylvania, in general. I'd also like to just take a moment to highlight the CPACE market assessment tool that Sean was talking about earlier. And he was dead on. He was describing some of the barriers that people have, that local governments have, when deciding whether to move forward with adapting a CPACE program. And being able to kind of predict the size of your market and how to structure your program, and what kind of outreach you need to do in order to make it successful; those are definitely major considerations at the beginning of every program. And so I'm really happy to see this market assessment tool out there.

We've used it, really, in primarily two ways so far. And I anticipate using it more. The first is really in the program education and outreach and program design space; and the second is in the advocacy space. So, next slide.

Note so here on the program education and outreach space. So, first of all, in terms of program design, the market assessment tool really gives a great overview of exactly what the possible addressable market is by building type and by measure, and slices and dices the data in a lot of helpful ways to allow us to set program goals around what type of outreach we wanted to do, and also what we could expect in terms of projects closing on an annual basis, which helps us also project some of the fees that cover the expense of running the program. So very helpful from a program design point of view.

But what I wanted to highlight here on this slide is the way that the market assessment tool helps with program outreach and education. As part of our CPACE program, we've been planning to run a number of kind of specials where we go out and we promote certain single-measure projects that really help drum up interest in energy efficiency projects in buildings across the city, and whether or not the ultimate projects are these single-measure projects, or the single measures sort of get people started on the projects; we're fine either way.

But we have been looking for ways to figure out which special we want to run early. And the report actually identified among other things certain measures and expected lifetime saving associated with those measures so we can figure out the right items to target first. So what I've done here is just pulled out one of the tables that we've looked at, and this kind of shows a bunch of measures that the report looks at. And, as you can see here, I'm highlighting the heat pump column and the LED lighting column, which are expected to create some of the most significant savings for buildings across our city. So that's part of designing some program and special initiatives. Next slide, please.

So the second major way that we've used the CPACE market assessment tool is for advocacy purposes. And so some of you on the call may know that one of the gaps in the Pennsylvania CPACE market is that multi-family buildings are actually excluded from eligibility for CPACE with the way that the state legislation was written. There's actually an amendment in Harrisburg right now to address this gap. It's being considered actively at the moment. And we were able to use data from this report to kind of underscore the importance of allowing multi-family buildings to access CPACE financing.

So what I've done here is kind of highlight two tables that we used as part of justifying the need for multi-family buildings to be able to access these competitive financing tool. You can see that the one table provides information on vintage of the building. So multi-family buildings in Pennsylvania tend to be pretty old and probably pretty ripe for energy efficiency projects.

And there are also thousands and thousands of them, as you can see in the other table on this slide; both of which really speak to the amendment that's being considered right now. So, all in all, we really see this report as a versatile tool for program administrators and for local governments considering programs, and it has already started to serve our work here at PEA in a number of ways. Next slide.

So, here's my contact information. Please feel free to reach out. I look forward to talking to you and taking your questions later here or talking to you if you reach out to us at CPACE@PhiladelphiaEnergy.org. With that, I will hand it over to Greg. Thank you.

Greg Leventis: Thanks a lot, Maryrose. I appreciate that. That was great. I love hearing about the programs and stuff. I'd also like to say thanks so much to Better Buildings for this opportunity to speak about our work. Let's go to the next slide. Yes.

And thanks to the Office of Weatherization and Intergovernmental Programs for funding our work, and thanks to Sean for guiding and supporting our work; and specifically for his work on the Commercial PACE working group. I think he's done an excellent job creating and leading that group.

So the motivation for the work I'm going to talk about is to develop resources, kind of like Sean was talking about, for state and local governments and other CPACE stakeholders to help them understand key CPACE issues and to help them know what questions to ask, and what options are available to them.

So Lawrence Berkeley National Laboratory has been working with Sean and DOE to support the CPACE working group by developing a series of three issue briefs on different aspects of Commercial PACE. And to select the topics for each brief, Sean asked working group members – we have periodic calls with them. In those calls, he would ask them about their needs and interests, and we chose the topics that had the most interest from the members. So next slide, here.

And we landed on three topics, although we chose them one at a time, and we did not choose them all at once. The first brief is on the special assessment process and how it relates to CPACE, and also understanding the roles and managing the risks in that process. Now, this brief is publicly available now on DOE's State and Local Solutions Center website, as well as Berkeley Lab Electricity Markets and Policy Department's website.

The second brief is on practices for demonstrating energy savings from Commercial PACE projects. And it looks at different approaches to assessing energy impacts that result from CPACE projects and the trade-offs of those approaches. And this brief is currently going through review.

And then finally, the third brief is focused on Commercial PACE Project origination to shed light on ways to increase participation in CPACE programs. And we're developing this brief right now. So stakeholders will be able to consult these briefs to better understand what is involved in the program process, how to attract program participation, and how to document program benefits. So, we're excited about these briefs, and now I'm going to give you some more details on each of them. So, next slide, please. Thank you.

So again, the first brief is Commercial PACE financing in the special assessment process, understanding roles and managing risks for local governments. Let's go to the next slide.

Now, the objective for this brief is to give readers a conceptual framework. So thinking about the responsibilities and risks involved in offering a CPACE program to help them formulate important questions about the specifics of their jurisdiction and about the specifics of their situation. So, we spoke to a range of stakeholders – and that included local governments, CPACE program administrators, capital providers, and industry groups – about their experiences in running programs and in dealing with specific situations; like for example, participant non-payment. And we found that, and I think I'm going to go in a little bit different order than what I have on this slide.

But I'll first say that the common special assessment process texts are first off, recording, and recording is the formalizing of the special assessment obligation on an individual property by documenting it in the local government's public land records. The second one, more straightforward, is billing. That's just the sending the bill for the CPACE obligation to the property owner. Then there's collections and remittances, which are collecting the payments, of course. And in cases where it's the local, not the CPACE lender who is collecting CPACE payments, remittances are forwarding those payments on to the lender. And then finally, enforcement. And that's managing non-payment situations. And that can include tax sale of the property or of the lien.

So we've found two important trends. The first is a trend toward third-party administration of CPACE programs. And the second is third-party handling of one or more of these special assessment process tasks. So a big takeaway here is that local governments can expect to spend minimal staff time on the special assessment process for CPACE. You know, CPACE comprises a special assessment district. But it's just one out of lots of different special assessment districts that you'll find in any jurisdiction. For example, other ones might be like fire protection, for example.

So even for CPACE programs with a large number of projects going through the manual, the local government, it's going to be small – that number is going to be small – compared to the overall number of assessments that a local government has to process.

Now, another takeaway in this brief is that in terms of risk of non-payment on CPACE projects, we've found just one default, which is very little. That was from a little while back, and we did find that there were more delinquencies that, and we expect that as CPACE becomes more popular, there will be more defaults. But that's a pretty small number at the moment. All right. Next slide, please.

So next is our brief, number two, on practices for demonstrating energy savings from Commercial PACE projects. So CPACE programs, as we know, they introduce a range of benefits for both private parties that are directly involved, as well as for the public at large. And these benefits include, but are by no means limited to, increased economic activity, healthier building environment, and energy savings, plus all the benefits that result from saving energy. Next slide, please.

So the second brief provides a resource for CPACE stakeholders, particularly state and local policymakers, on how programs assess their energy impacts from CPACE projects and programs, what options are available in terms of methods to make those assessments, and the benefits and drawbacks of employing those methods. Next slide, please.

So, the public benefits of clean energy are often the rationale that state and local governments will cite when they're passing either CPACE and they want legislation or a CPACE ordinance. So they may want to quantify the energy impacts and track the program's progress. And that's where energy impact assessment comes in. Energy impact assessments are a process to determine and quantify how an efficiency project or program effects energy consumption. And the reason that CPACE programs might want to conduct energy impact assessments could be everything from complying with existing reporting requirements to promoting a program. So, next slide, please.

So the three assessment methods that are common to CPACE, which we cover in the brief, are – and by the way, these are very high-level definitions. There's a lot of important nuance that we cover in the brief. But I'll say the first one, a high level is deemed savings, which are assessments and savings done before a project is implemented that are based on predetermined estimates.

The next one is consumption data analysis, which is a comparison once the project is completed and operating of actual energy consumption before the project and actual energy consumption once the energy and permits have been made. And then the last one is building energy simulation, which uses engineering models to forecast energy savings.

Now, trade-offs of these different methods are generally between costs and accuracy. So, for example, in the building energy simulation, those can be calibrated for better accuracy by, among other things, including the operating hours that are going to impact different energy systems. And that adds accuracy, but it also adds cost. So that's an example of one of the trade-offs there. The takeaway is that CPACE stakeholders may want to gauge energy impacts since clean energy and energy savings is often a rationale for CPACE, and there are multiple options for assessing those energy impacts. Next slide, please.

So finally, a third brief in the series is Commercial PACE project origination, leverage points for growing the project pipeline. Now, this one is still in the pipeline. That is, we're still developing this one. But like the other two, we're very excited about it. By origination here, I just want to say we mean finding potential projects and getting them to participate in CPACE. Next slide, please.

So motivation for this brief is to understand the origination process in order to help accelerate the uptake of CPACE projects. And to do this, we reached out to a number of CPACE program administrators and capital providers with questions about their origination practices and efforts. Next slide.

So, the data for this one is still in draft form, but here are some of the initial findings. For example, capital providers see the top barriers to originating CPACE projects as first off, lack of property owner awareness, followed by obtaining mortgage holder consent, and then property owner perception that CPACE is a burdensome process. So, these are the factors that capital providers see as holding back more participation in these programs. Another finding is that both program administrators and capital providers see the most effective outreach strategies is talking directly to the program administrators – excuse me, to property owners – or talking to groups of property owners.

And then finally for projects that have closed, the top features that these folks say attract property owners to CPACE starting with the most attractive is, number one, the long terms that CPACE can provide. As we know it's going to be 20 years or longer. Followed by the fact that CPACE does not require personal or parent company guarantee, which can be a requirement of other financing and can often stall projects. And then there is that CPACE often has lower interest rates now that financing options, and that it often allows borrowers to take out larger loans than other financing options. Next slide, please.

So, on this slide here, you can see visually the finding on various uptake, and I mentioned on the last slide with lack of awareness, mortgage holder consent and perception of an intensive process up there at the top. Now, there are a lot more findings like these that will be in the brief. For example, what are helpful actions that public entities can take to help CPACE programs originate projects? The bottom line here is that we hope these will be helpful insights for CPACE stakeholders to be able to increase their project pipelines. So, to sum up, we have lots of good insights on what we can get in the way of CPACE participation and ways to draw in new CPACE participants. Next slide, please.

And then I'll wrap up by saying, again, that we're excited about this series of briefs. And as I said brief one is out now. Brief two should be out shortly. And we expect brief three to be out later this year. So, thank you, and I will pass it onto Sam.

Sam Cramer: Great. And thank you so much, Greg, and also a big thank you to Sean and the rest of the Better Buildings team for having me on today. It's a pleasure to be with you all this afternoon. If you go to the next slide.

So, NASEO has been working on a couple of briefs focused around CPACE state and local coordination and also around best practices for ensuring that small businesses have access to CPACE. We've been working on these closely with the Department of Energy for the past year, and we are excited to announce that we're going to be slated to release them next month. So stay tuned for a press release on that. Can we go to the next slide?

I want to go through a couple different talking points today that kind of sums up highlights from both of these papers. We'll talk a little bit today about some of the challenges that local governments face to participate in CPACE, and then how coordination can be used to kind of overcome some of those barriers and initial local government hesitation. Some of the options that states, and in particular state energy offices can do to help coordinate local governments, and then we'll transition to talking about some case studies of a couple states that have really gone above and beyond in their coordination efforts to support small business access to CPACE financing.

As a quick aside, my organization, the National Association of State Energy Officials, or NASEO, is the only national non-profit association for the governor designated energy officials from each of the 56 states and territories. We were formed in the mid-80s, and we facilitate peer learning among the state energy officials and serve as a resource for the energy offices and also advocate their interests to congress and the federal agencies. Next slide, please.

So, there are a number of benefits for any local government to participating and having access to CPACE financing. Local governments are going to see local environmental improvement. There's going be improved competitiveness for the businesses in their area due to the energy savings that CPACE can provide, especially straight up front with the zero money down proposition, and then also increase economic development from an infusion of capital, and increase activity for contractors as well as business owners.

The problem is is that in order to get to that point where they're really taking advantage of the benefits, there are a number of obstacles that they have to weigh in terms of choosing whether to participate in CPACE programs. One is the time it takes to market and educate potential customers on the program. Another one is developing technical and financial requirements. And both of those tasks take a lot of staff time, and they cost a lot of money.

And local governments, especially those for smaller jurisdictions outside of the major cities, are going to have limited staff time and resources, and in terms of thinking through how to weigh the benefits and staff time on one activity versus another, it may feel very daunting to local governments to actually set up a CPACE program on their own. We go to the next slide.

So, one of the things that we've been looking at in terms of really kind of overcoming all of these barriers is to coordinate. This can take various forms. We can have local programs coordinate. Local programs can coordinate with the state government. And then regionally, state, local, and private stakeholders can also get together and coordinate. If a metro region spans several jurisdictions, we see this in Mid-Atlantic PACE alliance with Maryland, Virginia, and the District of Columbia coordinating on their CPACE programs.

And basically, how this kind of overcomes the barriers I talked about in the last slide is that it aligns, it aggregates, and it organizes the local governments so that instead of having 50 sets of rules and regulations, you have one standardized process. Makes it really easy for a lot of folks to understand how the program works. It also makes it easier for companies that may have more than one building owned within a state's jurisdiction. Instead of trying to understand several sets of requirements, it's just one set for the entire state. It makes it a lot easier for them to do business.

This coordination leads to economies of scale. It helps reduce the time and the cost for running the CPACE program, which makes it more competitive as a financing option and can increase local government interest in it, and customer interest as a result. And so the coordination really helps, is a good starting point to help CPACE reach a lot of underserved customers, particularly those in rural areas that have higher soft costs associated with getting through the entire process. We can go to next slide, please.

So, at NASEO, we always try to make sure we come at things from the lens of the state energy offices. And really, the state energy offices have a sort of gradient of options provide support to either CPACE administrators or directly to local governments thinking about opting into a CPACE program. And this is kind of a gradient in terms of the amount of time and resources it may take the energy office to even commit to what they can do. On the left, the lowest option for both time and cost is education.

State energy offices are great at convening and also at educating. They've played strong roles in making sure that customers within their jurisdictions are familiar with different financing products, and CPACE is no exception for that. If they continue down the spectrum, they can also provide selective technical assistance. They can assist with providing lists of prequalified contractors, or think through how to support maybe the audit process, or M and V, measurement and verification.

And then finally, if a state office really chooses to do so, they can really take the next step in actually administering the statewide program from their own office. Now, this is a little bit more challenging because a lot of our offices are also constrained for staff time and resources. So while it's possible, it's certainly something they have to consider carefully before deciding whether they want to invest the time and resources in them. Next slide, please.

So, in the brief, we highlight three different potential best practices that states should consider when building up a CPACE program to help maximize the coordination between the state and the local governments for this financing product. The first is really we want to have states consider the development of a statewide CPACE program. Several states run these programs, including Colorado, Connecticut, Rhode Island, and Utah. And we've found that a statewide program, as opposed to more of a local up option, as you find in California, it provides us a single, sole contact for questions about the program, a single set of regulations, a single set of paperwork to fill out. It makes it a lot easier for customers to understand how to make the program work for them in their part of the state.

Second is this comes down to the education lens, is really thinking about how you want to approach local governments that maybe considering to opt-in to a CPACE program, but are not really – are kind of on the fence about that. And we've found that a lot of local governments will respond more positively if you lead with an economic and jobs message. While environmental and energy benefits are obviously a great thing and we want to encourage those, a lot of local officials are going to be laser focused on how to provide good jobs and bring in infusion of capital into the community.

So, leading with an economic message is definitely going to help local government see CPACE in a more positive way. And finally, there is going to be some hand-holding that's going to be necessary to help get some of the smaller local governments to understand CPACE and often the process. So we've found that programs that try to make this process as simple as possible and take one some of those more of the traditional local responsibilities tend to be seen as more positive by local governments.

We've noted that since the example in New York, Energize New York, the statewide CPACE administrator went through a couple of iterations of its process. And over time, they assumed more and more responsibilities that had previously been delegated to local governments. As they did that, they found that local governments were much more apt to opt into the program. They found it to be very easy. So at this point, it's almost as if the local government just passes an ordinance, opts into the program, and a third-party administrator takes care of the rest of the process.

So, yeah. If you can kind of help these governments handhold themselves to get to stage B so they can free up some of their resources to do other things, they're going to be a lot more interested in opting into a program. If we can go to the next slide, please.

So, we've talked about how coordination is really helpful in getting a lot of local governments involved. But then we really want to think about how to make sure that CPACE is able to be accessed by the entire economy – not just bigger projects by some of the bigger buildings, again, and bigger capital providers. There's a clear public purpose aspect of CPACE in providing a low-cost mechanism for small and medium-sized businesses to also make improvements. And so some states have really gone above and beyond in terms of their thinking through or kind of coordinate to really make sure that there's access to CPACE for all sectors of the state's economy.

So in our second brief, we've really, we've talked, we've interviewed three states that we feel are providing really good best practices in this area: Colorado, Michigan, and Minnesota. And we've provided a case study detailing what each state's program is doing in order to make sure that there's equitable access out there. So, the first one, Colorado, has really been thinking hard about how to find ways to use local lender networks to reach out to rural communities.

Obviously, Colorado has the front-range cities of Denver and the suburbs, and also Colorado Springs. But there is a whole, huge outdoor area in Colorado with a lot of beautiful villages that are in the mountains. They're harder to get to. But they have a lot of projects that are going to be great fits for CPACE financing. And so what the Colorado program found out was if you can really leverage those local networks with community banks, credit unions, you can really help develop your connections there and get local lenders in the community that are also trusted by the community, and they can provide an additional marketing arm, as well.

Furthermore, the CPACE program is also developing a cloud-based application, the EPIC program, to help contractors originate projects, and also help building owners estimate the savings from various improvements that can be made to their properties. So they've really kind of pushed for trying to get those rural communities involved. Next slide, please.

The second one is in Michigan. Leaning Green Michigan has been around since, really, only a couple years after the birth of PACE itself. And what Leaning Green has done over the course of the last few years is they've recognized that the Michigan statute as it's set up provides, offers a set of – is a set of requirements for larger projects. But there's not really anything in the statute that talks about smaller projects with smaller businesses.

And so what they've done is they've developed a program under their umbrella called PACE Express, which either reduces or eliminates some of the requirements for smaller projects under $250,000.00. Some of the big changes here are going to be the energy audit. Instead of having an ASHRAE level two audit that's required, they could just do a baseline energy audit. There is no savings-to-investment ratio requirement, unlike with larger projects.

And then there's also no savings guarantee. So what this does is this actually reduces the closing costs for CPACE financing for smaller projects, which makes that a lot more attractive to small business owners in which the closing costs can actually make a big difference in terms of whether they're going to choose to finance the project with CPACE or go somewhere else. So adding this flexibility has really piqued the interest of a lot more small business owners, and they've seen an uptick in using CPACE for small business since they've released PACE Express. You can go to the final – the next slide.

Our final case study here is with Minnesota, and MinnPACE is the CPACE program run by the Saint Paul Port Authority. And they've had an extremely successful program in terms of making sure that small business owners are engaged. And how they've done that is they have a revolving loan fund that was seeded with $10 million originally from the Minnesota legislature. They've since added another $5 million as a supplement since they realized how effective this program was.

And what happens is MinnPACE acts as the first financing, first capital provider to a lot of the projects it funds. And so they are able to offer lower interest rates. They're usually between 4 and 4.5 percent, depending on the year. And they'll go out, and they will help walk small business owners through the process of doing PACE financing. And then a year after the projects close, they will go and sell those projects to their secondary market capital providers, and then use that to reseed the fund. They've found that this has been a huge success, and they've had this loan fund result in over 250 projects.

And this is as we wrote this January, 2021. So this is actually a low number. I believe there are over 300 projects at this point and comprising at least $100 – over 100 to $120 million – in total investment. The vast majority of these projects, I think about 80 to 85 percent, are small businesses with projects that may be $100,000.00 to $200,000.00. It's a very successful model, and really ensures that PACE fulfills that its purpose role and can be accessible to the entire populous and make things easier. So if we go to the last slide.

This is my contact information. Feel free to reach out to me. Like I said, we're going to have these two briefs out in the next month or so. I'm really looking forward to this, and I'm happy to take any further questions from the audience.

Sean Williamson: All right. Thank you to our presenters: Maryrose, Greg, and Sam; that fantastic content. Very much appreciate it. At this point, let's get into our Q and A portion of the session. I will first flag for folks to please go to Slido, Slido.com, enter #DOE, and you could enter additional questions that you would like us to field. I see a couple questions up here now, and I'll get to these in just a moment. Our tag within Slido is the Commercial PACE Toolkit. That's how you can populate questions that we'll see show up here.

Before I dig into these specific questions, I've got a couple pocket questions here I will use to my advantage as the moderator. I'm very curious to hear Maryrose's perspective, in particular, as an implementer and designer of the PACE program with this content being very focused on state and local stakeholders, just to have her kind of step back and kind of give any cautionary tales or pitfalls to avoid for other states and local governments that might be setting up programs. Maryrose, I'm curious if there's any words of wisdom or, yeah, again, pitfalls you would encourage other state and local governments going down this path to not fall into?

Maryrose Myrtetus: Sure. That's a great question. And I think three things kind of come to mind right away. So, the first is – and I think that people doing it now, even though we only did this two years ago, but I feel like there are so many more resources now, so we might not fall into this same pitfall. But the first is really taking advantage of the amazing resources and support network that's out there from the DOE, from the labs, from even the CPACE capital provider community and PACE nation there are a lot of really great resources that help you design a program that approves financable projects.

So part of the whole trick with CPACE is that it's a public-private partnership. So it's serving the public good, but also has to work for the private market. So, kind of designing your forms and guidelines from the get-go in a way that suits all parties and soliciting that feedback and then locking it in is a piece of advice I have.

Second is in Pennsylvania one thing that we have, as you know, the state has the authorizing legislation and all counties have to pass their own legislation. And what we're seeing right now is that actually as the state considers an amendment to the authorizing legislation, some of the county-level ordinances that allow for CPACE projects use specific language that might have to go back and get reinvented now that there's been state-level amendment. So I would recommend if you have this two-stage process in your state the way we do in Pennsylvania to reference the state law in your local ordinance so that you can, as a non-lawyer that's my recommendation so that there's only one amendment process if you ever face this.

And my third piece of advice would be to engage in a robust stakeholder process when putting together program guidelines because it helps make sure that your program kind of meets the needs of what Sam was saying of it allows you to put uniform guidelines across the entire state or across multiple counties if you engage stakeholders from across those areas, and allows for people to participate in the market more fully.

Sean Williamson: Great. Thank you, Maryrose. Very helpful advice. So I see a couple of questions here regarding councils of government and their particular role in CPACE; one actually directed at Sam, and one at Maryrose. However, I think I know Greg and his background well enough that he can kind of speak to this a little bit. So I might direct this question at him. Greg, can you speak to the role of councils of government and JPAs, for example, in California?

Greg Leventis: Sure. Yeah. Yeah. So, definitely councils of government can do this. And like Sean just said, there are councils of government that are doing this. There are joint powers authorities. There are port authorities. And I would say that it probably differs from place to place what exactly they're doing. In California, for example, the Western Riverside Council of governance was overseeing one of the largest on the residential side, one of the largest PACE programs in the country.

This is in southern California. And they were like the question was saying, they were sort of a convener. They bring in other capital providers and program administrators that do the sort of leg work. So they can definitely be involved and it's just a question of what exactly they're doing. I'd love to hear what Maryrose and Sam have to say, as well.

Maryrose Myrtetus: Yeah, Greg. I really, I defer to you much more as an expert than I. But I can just say PEA, we are a municipal authority, and we are the program administrator. So that jives with what you were just describing.

Sean Williamson: All right. Thank you, Greg. I think I will direct this next question to Sam. Sam, I see a recent addition, a specific question about the Michigan PACE Express program. I know that that kind of variation within the Michigan / Green Michigan program, was relatively recently announced. But I'm wondering if you have seen any data points or heard anything from them with regards to the success of that particular express track versus the kind of standard track.

Sam Cramer: Yeah. I'm happy to answer that question. So in terms of the impact of the program on investment decisions, it's certainly had a positive impact in terms of thinking through how – and for small business owners that have been considering different financing options, I think one of the interesting things they're looking at is the fact that given that there is a $250,000.00 cutoff for their waived requirements, they've found that some projects actually decided to scale down right to that level of investment because they found that if they went – they can do other – they can implement other improvements, but if they went over, they found that the closing costs increased enough to the point where it made it a little bit less competitive and added enough of a regulatory burden where they decided to forego those improvements and stay underneath the $250,000.00 limit.

So, I think what they're thinking about doing is trying to see if there's a way that legislation can be amended to maybe go up to $500,000.00 for those stricter requirements. And that way you'll see more business owners have the flexibility to make additional improvements that they would like to make that they otherwise aren't making because of the limit.

Sean Williamson: Wonderful. Thank you, Sam. Let's direct this next question to Maryrose, although I suspect maybe Sam or Greg will have some thoughts, as well. But, basically with regards to consumer protections and what measures have been implemented in the Philadelphia program.

Maryrose Myrtetus: Sure. Yeah. That's a great question. So, a couple thoughts on this. First of all, I mentioned that we engaged in a robust statewide stakeholder process to develop our program guidelines. So I think that's a key way to make sure a lot of the different voices come to the table in terms of structuring the program. So that's one.

Two, we have a two-stage application process. The first is a pre-app that helps us screen eligibility of a project. And then the second is more robust. And there are a couple components of that robust final application that provides some consumer protection. One is that we have a 95 percent LTB limitation. So the CPACE financing plus all other liens and encumbrances on the property cannot be more than 95 percent of the assessed or appraised value of the property. So that kind of prevents over-levering of the property.

Another is that we require an ECM survey, an energy conservation measures survey, that lays out the measures that you're planning to install and the expected dollar and carbon savings associated with those measures, so that the property owner really knows what they're getting out of the project and so that we can verify that the measures that CPACE is financing are, indeed, eligible.

And the third is the lender consent process. So, all CPACE financings must receive consent from the senior mortgage holders before they can be approved and finalized. So there's kind of another check, an underwriting process there. I think I'll stop there. We've done a lot to try to make sure that there are a number of consumer protections in the program.

Sean Williamson: Wonderful. Thanks. And Sam or Greg, are either of you able to kind of just speak to nationally different consumer protection measures that tend to be a standard part of CPACE? And I'll just kind of echo something Maryrose just hinted at, but that's mortgage holder consent is a pretty standard best practice within the Commercial PACE administrate, and it's definitely a very important consumer protection measure. But, anything you would add to that, Greg or Sam?

Greg Leventis: I don't know that I would add much more to that. I think that the mortgage holder consent is good consumer protection. One think I guess I would say is that I don't hear consumer protections as much about worry on the commercial side. It's definitely been worry on the residential side. That said, I've mostly been looking at larger project sizes. And so after hearing Sam's presentation and understanding that smaller commercial buildings need or use this type of tool, I think that the extra protections that Maryrose was talking about are definitely good things to include.

Sam Cramer: Yeah. I think generally I would agree with Greg and Maryrose's comments about the consumer protections. I think one thing I always keep hearing from several different programs – and I don't know if this is necessarily consumer protection in the sense of it, but is really kind of the debate around whether to require a savings-to-investment ratio that's greater than one or not. Reason being is that it certainly helps when folks have savings coming in initially from day one in order to make sure that they can pay for the improvements that are installed.

But on the other hand, not requiring that does allow an additional flexibility to make other types of improvements that may not necessarily pay themselves back right off the bat. Again, that's kind of been and kind of a little bit of debate. I don't think there's a wrong answer in this. It depends on what your state is comfortable with and what you're comfortable with doing as a program.

Sean Williamson: Thank you, Sam. I will direct this next question to Greg, and try to kind of shoehorn in an additional question with regards to energy impact assessments and how they might include GHT emission reductions. And I'll expand upon this question, Greg, by kind of thinking about something I heard a good deal about yesterday at the local government meet-up session, and that's building energy performance standards.

I'm kind of curious what the intersection might be with regards to Commercial PACE programs and benchmarking or building energy performance standards. If there's some interplay there, particularly as we are having energy-based goals versus maybe GHG-based goals in some of the policies. And Maryrose, to the degree you're familiar with different Philadelphia policies, I would love to hear your opinion on this question, as well.

Greg Leventis: Thanks. Yeah. So, actually, I answered this person in Slido. I wanted to say that some folks are doing this. Some programs are using impact assessments to figure out what the greenhouse gas emissions impacts of the programs are. And I'll note one in particular is the Houston Advance Research Center's Texas PACE Energy and Emissions Tracker. They do some very detailed work on this. That said, in terms of the brief that we put together, we were focused on energy savings specifically. But I'm not as familiar with estimating greenhouse gas emissions. But I would imagine that you can take the energy savings, that that might be the first step to then figuring out what the emissions impacts are.

Maryrose Myrtetus: Yeah. I'll just add that this is something that we ask for in our energy conservation measures survey submitted as part of the final application. And to date, no project has had any difficulty, including this, in their projections. But I am not an engineer, and I do not know exactly how they extrapolate it from the data. But it is something that we track from a public policy standpoint. And it's something that we keep in mind, as well. In Philadelphia, every CPACE project has to adhere to our benchmarking ordinance, which allows us to kind of track a building's energy and water usage year over year. And so we are very interested in collecting data to justify some of the public policy initiatives that we take.

Sean Williamson: Thank you, Maryrose. And I think with that we've addressed all the questions. There's one question here about CPACE being used to purchase solar energy or hot water, chilled water from a third-party owner. I don't know if we've got a great answer to this one, but I will direct you to the Better Buildings financing navigator, which I think can be a great resource, for example, to compare CPACE with efficiency as a service, especially with regards to what you're trying to implement, whether it's solar PV or other efficiency measures. Sorry we can't get into that more.

Maryrose Myrtetus: Well, if I could just jump in for ten seconds on that.

Sean Williamson: Sure.

Maryrose Myrtetus: Our program and some other programs do allow you to use CPACE financing for what we call a pre-paid PPA structure, which I believe is what is being described in this question. So, you would basically take out CPACE financing to pre-pay for 90 percent of your expected PPA payments, and then on an annual basis make your CPACE payment and the residual ten percent of your PPA payment. And I can talk more about that for Philadelphia-specific programs offline for whoever has a question.

Sean Williamson: Awesome. Thank you, Maryrose. I learned something in this session. So I very much appreciate it. All right. Well, let's transition to our last set of slides here, just to give you all some final takeaways and resources to consider. I want to make a final plug for currently available CPACE resources to be included in the full toolkit release later this summer. This includes lessons in

Commercial PACE leadership, the path from legislation to launch, which is a foundational resource to help states and local governments with program launch, as well as the CPACE working with web page, which lists participants as home to other resources we discussed today.

There are also two Better Buildings toolkits available on CPACE for resilience and CPACE for new construction. And as I just mentioned, the Better Buildings financing navigator is a fantastic resource for making heads and tails of these different financing products. Next slide, please.

Please stay connected with DOE and resources for states and local governments by visiting the state and local solution center, subscribing to our state and local spotlight monthly newsletter, and reviewing our recently release resource guide for state and local leaders. You can also e-mail us directly with any follow-up questions or comments. The Better Buildings Solutions Center has over 3,000 solutions to help you find proven and cost effective strategies to help you reach your energy, water, and waste reduction goals, as well. Let's check out this short video to learn more.

[Video playing from 1:15:08 to 1:15:55]

All right. That was great. Next, I want to talk about our Better Buildings Summer Webinar series. I want to invite you to attend this Better Buildings webinar series, starting next month. Partners will discuss some of the most pressing topics you're facing, share best practices and innovative new approaches to sustainability and energy performance. To register, go to Better Buildings Solution Center and click on Events and Webinars.

And with that, I'd like to thank you all for attending our session today. And in particular, thank our panelists. Thank you, Maryrose, Greg, and Sam; for your thoughtful contributions and discussion today. We have also launched a short feedback survey in Slido and ask that you please take a couple minutes to give us feedback on the session. Your answers will be totally invisible to other attendees, and we rely on your feedback to design webinars, future summits, and more.

The poll will be open until tomorrow morning. If you'd like to learn more about the resources discussed today, please check out the Better Buildings Solution Center or feel free to contact me at the e-mail below. Thank you, everyone, and have a great evening.

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