

NDRC: Energy Investment for Disaster Resilience Webcast Transcript

Lynsey Johnson: Good afternoon everyone and thank you so much for joining us for today's webinar on Energy Investments for Disaster Resilience. My name is Lynsey Johnson and I work for HUD's Office of Economic Resilience. Today we have joining us two experts in the energy investment field for climate and disaster resilience. Today is one of the many topical webinars we've been holding for the Climate Resilience Webinar series that is collocating and running with the National Disaster Resilience competition. Today's presentation is intended to provide communities and states participating in the NDRC as well as those communities interested in climate resilience and planning to start the discussion in terms of applications planning and projects itself. If you have any NOFA or NDRC questions please feel free to forward that to the Resilientrecovery@HUD.gov email address.

Today we are very fortunate to have Jason Hartke and Rob Sanders joining us to discuss climate and energy resilience. Jason Hartke is a national leader working to advance clean energy solutions proven to fuel economic growth while also helping protect the environment. As Senior Vice President of US GBC, Jason leads efforts to advance policy and market accelerators that support the growth of green building and communities around the country. He has established several US GBC programs and partnerships that promote sustainable communities, resilience, energy efficiency, and green affordable housing. Additionally, we have Rob Sanders joining us who is the Senior Finance Director for the Clean Energy Group with over 25 years of experience in community development and energy related commercial finance. Rob Sanders has deep expertise in designing, implementing, and evaluating financing programs, financial products, and related services in the areas of clean energy and sustainable community development. With the clean energy group, he has written extensively about clean energy, finance, and resilient power especially in connection with low income and vulnerable populations.

Today's agenda, Jason is going to provide an overview of energy and resiliency and discussing the synergy of integrating resiliency into communities. And Rob will talk more about the clean energy group's community resilience power work, and then also provide a case study of the City of Baltimore as well as some financing options for resilient power programs and projects. So right now I'll turn it over to Jason to discuss a little more about energy and resiliency.

Jason Hartke: Alright. Well, it's great to be here. Thank you so much for that kind introduction Lynsey. I really appreciate it. My name is Jason Hartke. I'm with the US Green Building Council. We're a membership-based organization that represents more than 13 thousand member organizations and companies around the country as well as 77 chapters, and many, many professionals in the building industry. We're probably best known for our leading green building rating system. It's a national benchmark for green building. We've certified now more than 25,000 commercial buildings. We have another 40,000 in the pipeline as registered projects influencing a total of 10 billion square feet of real estate around the country. And, we're also certifying two million square feet of real estate every single day. I start with this slide because we really are talking about a new challenge, a new leadership challenge.

When we first started to get—when US GBC was first getting into this space and trying to figure out how we could make a difference, I ended up writing a piece. Some of these quotes are from a piece I wrote in 2009 to start to get a handle on the size and the depth of the challenge. Just to put it

in perspective globally according to UNEP disasters in the last decade have cost us over a million lives and a trillion dollars in damages. So how do we work across a multilayered engagement at all levels of government? How do we bring this new agenda both to policymakers and practitioners alike? And how do we translate it into an action agenda?

Now the US Green Building Council, for us it's about trying to ensure that buildings are part of the solution and not part of the problem. So we've tried to focus our efforts where we can have the greatest impact. At first, a lot of that work was in advocacy, policy, and research. But it wasn't long before that work extended into other areas where we found more synergy, a lot more connectivity, and started to build out some of the opportunities and capacities that we could bring to the table. So we started to better articulate how we were organizing to meet the challenge. Again, these buckets advocacy and outreach, research and resources, partnerships and initiatives, and I wanted to talk about one under advocacy that I think is very important. It has established a proven record of making a difference. Our Resilient Communities for America Campaign that we do in partnership with the National League of Cities, with Icfei and the World Wildlife Fund. We launched it last year with the aim of engaging directly with elected officials. And to date, we have nearly 200 mayors and other elected officials who have signed on to our resiliency accord. So it's starting to put resilience on the map, make it a local issue, and we're starting to be able to advise these mayors how they can go about making their communities more resilient across all sectors but including the building sector. We're also doing a lot more to invest in research and build out new resources here at US Green Building Council. And a good portion of our work continues to be pursued through partnership.

In total, what we want to do is help make the case for stronger buildings. I mean that's kind of our end game because once you've made the case then the actions that we want to see we think will start to grow exponentially. But why buildings? Buildings are where we spend so much of our time. In fact, it's 90 percent of our time. They are huge economic assets worth an enormous amount of economic value. And quite literally, they are the shelters from the storm. They're where we're going to go when these disasters strike whether they're ready or not. And being ready and understanding what ready means is a huge part of the issue and so, a quick interlude here. This slide, you see a picture, and that there is Frank Cannonball Richards, and he was a Vaudeville performer. As you can see, he was able to withstand a cannon being shot right into his gut there and the reason he was able to do that is because he was prepared for the impact. He knew that it was coming. He was ready. He practiced for it and he could do these shows multiple times, many times over the course of months and years. And so, this art of being prepared is so valuable.

On the flip side, just give you another example of what happens when you're not prepared, Houdini, as a contrast, the speculation is that he died when he was having drinks with some college students and they knew that he also performed many of these strong man acts and feats. And without notice, all of a sudden one of the students punched Houdini in the stomach and the speculation is that is what caused a burst appendicitis and he later died. So the lesson is, one, it's not easy to be prepared but also that we need to be ready but we also need to know what we're being ready for. What are the risks? What are we vulnerable to? One of the things I really like about resilience in buildings in this issue is that it gives us a chance to think place based and be very customized in the strategies that we advance for the buildings based on their climate sensitivities. But it also helps us think systematically because a building just doesn't exist in a vacuum. You have to think about all the pieces of the puzzle. How does it relate? How does the building relate to the grid? How does it relate to the transportation system? How does it relate to water, and so forth? So we can only be as

resilient as each piece of the puzzle. And so, buildings give us a great opportunity to not just think about one sector but also think about it in a more holistic way.

Just to give you a quick example of how price based this can be and how customized this can be I want to call attention to a study that the Energy Center of Wisconsin did on adapting buildings to climate change impacts. They focused in on one building, the NASA Stennis Space Center in Southern Mississippi; and it was a really interesting study because they went in and they did a series of future climate variability models and what the impact would be on energy consumption. They found that annual electricity consumption would actually go up 11 percent and they actually found that natural gas consumption would need to go up 24–36 % because of colder winters. There was some really interesting findings. They knew which strategies and which technologies and these happened to be off-the-shelf strategies and technologies that they could use to adapt for these future scenarios. But the scenarios themselves were not what you would think, somewhat counterintuitive. All the scenarios indicated cooler winters. One scenario said warmer summers required lower cooling loads. And that was because there were drier conditions that were anticipated that reduced the need for dehumidification.

Then there's—if you just moved out a hundred miles they also found that you would see often a very different suite of both problems and needs and therefore technologies that would be needed to meet the need. So it's very important that we get a better handle on how we assess risk, how we assess vulnerability, and how we do this at a very local level. There's a lot of groups now including US Green Building Council, and others, that are starting to look at how to be smarter about this, and how to help accelerate what I would call a great convergence of solutions, solutions that both support adaptation and also reduce greenhouse gas emissions, and kind of are more solely focused on the mitigation side. And CCAP has this great graphic of where adaptation and mitigation are starting to overlap and how we can really push hard to maximize those strategies that touch both sides of the issue.

This is one of my favorite slides. We had Administrator Fugate at one of our national resiliency events at the National Press Club and he put it in his very concise way of articulating the same point that being green is one part of being resilient. The key word there I think in the slide is the synergy. We are trying to maximize these synergies and better understand these synergies. So when we would consider the two together we do shift our decision-making. And it's a new layer of the onion. It's a new dimension to existing decisions. It absolutely a huge opportunity to prepare for future conditions, and an opportunity to enhance and sustain performance, and reshaping the criteria for better performance. And I'm not sure folks quite understand what that means. And I want to get into that a little bit because performance has traditionally been looked at looking backward as opposed to looking forwards. And I'll get more into that in a few other slides down the road.

So in our methodical systematic way the US Green Building Council in 2012 set out to define that synergy as it relates to buildings. We came out with our green building and climate resilience research that we did in partnership with the University of Michigan. As far as we can tell this report represents one of the first attempts to compile all the research on the impacts of climate change on the build environment, and then to link those impacts with strategies for addressing them. The information or the strategies presented in the research we think provides a great baseline from which green building professionals can then begin to address climate change adaptation and their projects. But the study was foundational in that it linked the very specific lead green building strategies to desired resiliency outcomes and that was key for us.

So here's a great graphic that tells you exactly what we mean on that. So the no regret strategies that we identified across these categories on the left hand side. These are the green building categories that we have in our rating system and you'll see all these no regret strategies. These are beneficial regardless of whether or not climate change occurs or doesn't occur. Then on the far right hand side we have a series of resilient strategies that we were able to identify that if you do those things they will allow a system "absorb" these disturbances, things like increased precipitation or flooding, and then still be able to maintain and return the structure, maintain the structure's function and purpose. What you can see here is that there is tremendous benefit in what we're already prescribing and then also maximizing resiliency outcomes.

So in any given area whether it's the energy efficiency component, whether it's in the water component, we are starting to map out these co-benefits across mitigation and adaptation. The mitigation I think was the principle driver. If we were having this conversation 10 or 15 years ago we would be talking about energy savings. We would be talking about reduced emissions more and more. If you talk to just about any mayor across the country, you are talking about how do we be more resilient to blackouts? How do we be more resilient to floods? How do we be more resilient to droughts? So this extreme weather that we're seeing is top of mind and everybody understands it and everybody is trying to deal with it in a way that's impactful. So to me this is where we really get to the rub as it relates to the building and building performance.

And what's the problem? What aren't we doing right in other words? And right now, we're not accounting for climate change in the design, construction, and operation of our buildings for the most part. So, if you look at just how we design and put together our heating and cooling load needs in any given building they're determined typically by looking backward and looking at what they call the typical meteorological year. Again, this is data that all looks backwards and it doesn't necessarily take into consideration future climate changes. What my colleague Chris Pike likes to say is when we do this we're baking yesterday's weather into our building today and then hoping it will perform tomorrow. And so it's—what we've been able to identify also to this research is that that's bad practice because then we're not necessarily putting in the right strategies into our buildings to account for this future weather. I'll give one quick other example on that. Right now, we rely in a whole lot of folks around the country on low nighttime temperatures to help cool down our buildings. But we're seeing in some jurisdictions in some places that these heat storms that last into the night that they don't afford for that nocturnal cooling. So it's a big deal. We have to better account for the change in climate.

So what happens when you don't have some foresight and think about the future and think about climate assumptions? Then you have all these negative consequences to think about, excess energy demand, increasing human health risks, lower passive survivability. And these are the consequences of not preparing for future conditions. Another great example is in storm water management. Again, the storm water control strategies that we put in place in most of our building sites are based on past data as opposed to what we now know will be increased storm intensity, increased frequency, and higher precipitation events. And when you start to think about it in that regard then we're setting up our buildings to fail and not to perform. And this is—I love this graph because it shows that yes, in the near term our buildings will perform because things won't change too much based off of last year compared to next year. But if we look forward we see that, wait a second, all these pollutants are going to start getting back into the waters and we haven't done enough to account for the changes in the weather. This is how it'll look in 20 years and in 100 years if we don't start thinking about these environmental conditions. These are big consequences. Again, the strategy of looking backwards you very quickly realize that we're compromising future performance. In storm water

management you're looking at excess run-off volumes excess nutrient pollution, and those impacts that'll happen with the aquatic ecosystems, and so forth here on this slide.

So at US Green Building Council, our job is we're trying to leverage the power of the lead so it can do everything it can to accelerate resilience best practices. Again, these are best practices that we've identified in this research and we've got this great demand for lead all around the country again. We're certifying two million square feet of real estate a day. So if we can help those project teams integrate resilient strategies into the existing system then, one, we can monitor the progress and, two, we can start to see significant achievement in those best practices. So what we've developed is a leading climate resilience-screening tool that does exactly that, it creates a framework so folks can—project teams. This is designed for practitioners. They can see the synergies from the mitigation of the adaptation standpoint and then make sure that they're using the credits, one, to do both but also the ones that may have a more focused resilience outcome.

So just to give you a brief look, this is a screen shot of the tool. As you can see, this is our new construction lead product and you're talking about if you look at the lower left hand graph you're talking about 54 percent of the credits that present opportunities for adaptation best practices. If you look at the top left graph there you're talking about 15 percent of the credits that are sent to climate conditions. Again, this gives folks an understanding based on climate region, controls for climate region, or controls for the type of building that you're doing. It helps steer these project teams into the most resilient solutions that they can adopt. So what I think is stunning when you think about it is if we're not integrating these climate assumptions and the models into our thinking moving forward, and that's huge. It's going to put future condition of our buildings and the future performance of our buildings at enormous risk and increased risk. So if we do this right and we start to think of ways where we can maximize the synergy, then we can be more climate resilient in all of our buildings just one of the great examples here on this slide is our lead neighborhood development rating system. 40 percent of it's credit outcomes are sensitive to changing climate conditions and 78 percent of it's credits offer resiliency opportunities.

So the solutions are there. The technologies, the best practices, they're there. Many of them are established. We just have to make sure that we're steering the project teams into those solutions that maximize resilience. Of course, there are variations across these. There's still gaps. We're working with other great groups like IBHS, folks like HUD, and Department of Homeland Security and FEMA, and others to make sure that those other gaps in the space are being met and other best practices are being identified and developed. We've got a series of strategies to make sure that we're reaching kind of these different players, the policy makers, the green building project teams, and others. But a lot of our technical work as you can see here is focused in on helping these green building project teams. At some point, we'd like to be able to almost score resilience in any given lead project. And again, so folks could not only say here's what we're doing on sustainability. Again, lead was predominantly developed as a sustainability green tool. But then they could see where they stand as it relates to other projects on resilience. And that's part of where we need to go next I believe.

But ultimately, like I said at the opening, where we really want to go and where we have to go is we have to be able to make that business case. We have to show how these strategies, these specific micro strategies either in a building but also how they connect with the other systems, how those are helping reduce risk, how those are helping reduce vulnerability, and how that translates into economic benefits. Once you do that the market responds because that's exactly what we've seen. That has been the primary driver of green building around the country. Once the financial economic

case has been made this stuff starts to take off. So ultimately, we'd be able to—we still need to be able to make a very compelling business case to help make this take off. So thank you for my time. It's now my honor to turn it over to Rob Sanders who's with the Clean Energy State's Alliance. Thank you.

Rob Sanders: Well, thanks a lot Jason. Let me say a little bit about Clean Energy Group and it's resilient power project. Clean Energy Group is a national non-profit that works to advance clean energy technologies and related technologies by identifying, and showcasing best policies and programs, public programs, to advance clean energy as well as private development of clean energy projects, and also how those programs arrange financing for those clean energy projects and technologies. It also manages the Clean Energy State's Alliance, which is an association of managers of public clean energy dollars. These could be system benefit charged dollars or alternative compliance payments, or REGI or cap and trade dollars, or state appropriations where there are those but public dollars for clean energy and energy efficiency development. The resilient power project is funded and supported by a number of foundations, the JPB Foundation, the Surdna Foundation, and Kresge Foundation. The description of the work we do can be found at www.resilient-power.org.

Clean Energy Group's advocacy for resilient power stretches back to the 1999 Manhattan blackouts that led to the loss of years of cancer and AIDS research when diesel gen sets failed at Columbia University and elsewhere. Over the years, extended power outages have continually occurred. There was the Northeast blackout in 2003. In recent years there were hurricanes Rita, Katrina, and Isaac. And the same cycle continues always followed by suffering, concern, and ultimately inaction. But I think this cycle of forgetfulness, as we call it, was finally broken with Hurricane Sandy in 2012. This time the conversation did not die down after the storm had passed. I think we're finally seriously addressing the need for resilient power distributed generation, and energy storage. I think that's because power outages during Sandy affected millions of residence for extended periods of time and resulted in substantial economic loss to communities. This was not inevitable. This resilient energy solutions could have helped limit those power outages. Hurricane Sandy may have received the most attention in 2012 but extreme weather events caused a dozen other billion-dollar disasters and extended power outages in 2012 alone throughout the country. These outages were caused my tornadoes, wild fires, severe weather events, and derechos, windstorms.

Extreme weather events, here you can see the increasing frequency over the past dozen years of extreme weather events causing major power outages. And again, these are caused by ice storms, hurricanes, tornadoes, and wild fires, and other extreme events. Here we see the large annual business losses from power outages, a 150 billion dollars a year and with California hit the hardest, but also Texas. Florida, Illinois, and New York, in that next tier and every other state affected. But the least affected have suffered 200 million dollars in business losses. Our work in resilient power has a special interest in low-income communities and vulnerable populations. That's because low-income areas have more difficulty responding and recovering from destruction caused by these power outages. They lack the income, savings, reliable employment that would help them recover quickly, or the insurance resources that are necessary to respond and recover from extended power outages. Low income and elderly populations are also the most vulnerable to high or low temperatures during power outages. We see a critical need for reliable distributed generation and resiliency in a number of facilities whether those are hospitals or affordable housing, assisted living facilities, police and fire stations, community facilities, all of these facilities are necessary in any neighborhood, and are needed in low-income communities as well. So clean, resilient power to us

means solar with storage but it also means combining power, fuel cells, and other cleaner distributed generation.

We have within the area of segment of low-income communities a particular interest in affordable housing and assisted living facilities. We think that there's a special opportunity to develop and finance integrated small systems, storage systems, with on-site generation that can help residents shelter in place. These would cover critical loads like elevator service, emergency lighting, booster water pumps, charging centers, charging stations, and those sorts of things. We're also working with HUD and their better building challenge program to work with multifamily affordable housing developers and owners to incorporate solar but also solar with storage, resilient power, in their portfolios of multifamily projects. So in D.C. and Baltimore we're working with Neighborhood Housing Trust and their partner Enterprise Community Partners to try to incorporate some resilient power in one or more of their projects. In Brooklyn and the Bronx, we're working with affordable and supportive housing owners and developers there. In Boston, it's affordable housing and assisted living projects. So when I say we work for them, we're providing technical assistance and sharing best information and resources but also we have some limited dollars for technical assistance and predevelopment costs associated with near term community resilient power projects.

The objective of all this work is to expand clean energy, clean resilient power at both the state and municipal level, and to identify and support new policy and financing options. The goal of it is to significantly increase public and private investment for clean resilient power systems. To get city officials to develop resilient power policies and programs that are linked to state energy policies and resources, and increase the amount of technical assistance for resilient power projects so that agencies and project developers can get deals done. And there's a link to a report that talks about our approach to this work. You can see that in that link there.

Let me talk a little bit about Baltimore. We took a special look at Baltimore, which had asked us how can cities deploy more solar in low-income communities and be more power resilient? So we prepared a report that was built on some really excellent work that Baltimore had done. Their DP3 report, which means disaster preparedness and planning project. It was an extensive investigation into the vulnerabilities of their infrastructure in about a dozen different areas where they're vulnerable, what measures would be needed to protect against damage, and disaster, and inventorying those critical facilities that were going to be impacted, and the prioritizing which ones needed what kinds of measures in priority. So we were asked to look at how solar in particular could be expanded dramatically in low-income communities and how that could be done financially. Our sense out that was that rather than try to put solar PV installations on every row house in Baltimore but made sense as an approach would be to look into providing solar with storage, resilient power, for critical facilities that served the needs of low-income communities. So if these would be public schools or community facilities, police, fire stations, health facilities and then we looked at how that could be financed with bond and credit enhancement mechanisms; but also third party ownership and lease financing. As a result of that work we're now exploring with Baltimore a citywide strategy for implementing priority building-related power projects that were identified in the DP3 plan.

So once the decision is made to pursue resilient power projects how do you finance them? Cities and housing community developers have a lot of options. I've categorized them in four categories. There is a bond-financing tool. There are public and private ownership structures. There are clean energy financial institutions, which I believe, have a special opportunity and responsibility to think about how to finance these resilient power measures, and then there's the role of credit

enhancements to make financing more available to projects and companies. I'm going to move quickly through these categories, highlight some of the aspects of them.

With bond financing the key here is that there are existing bond tools. You don't need to create a new financing instrument in order to do resilient power work. These existing bond tools can be very useful in financing pooled resilient power projects for instance, general obligation bonds. In New York City the city controller just recently announced a multibillion-dollar green bond program to strengthen the city's infrastructure in the aftermath of super storm Sandy. So energy infrastructure is a big part of that. Resilient power projects should be financed with those bonds. 501C3 bonds, these are a bond-financing tool for non-profit owned hospitals, universities, non-profit sponsored affordable housing, and community facilities. It's a way that they've financed capital improvements. They could do solar or other clean distributed generation in conjunction with storage. School construction bonds, for instance, in Baltimore one billion dollars is going to be raised in bonds and spent for new construction of schools but also deep retrofits of existing public schools. Because emergency shelters are often placed in public school buildings there's an opportunity to be sure that those shelters have resilient power distributed generation and storage. Disaster recovery and resiliency bonds, these are bonds like the ones announced in New York under the green bond program but also Louisiana and other states have programs for disaster recovery.

One other model I would highlight is the Morris model. This is a hybrid bond model where a public entity issues a government bond and then transfers the low cost capital to a developer, private developer, in exchange for a lower PPA price. It's been used to finance solar PV on public buildings but it's also now being adapted to finance combined heat and power projects for hospitals. It's a good model. It's one that is worth taking a look at. Commercial pace, CPACE bonds, these are bonds that are repaid by property assessments that are added to building owners property taxes. So this is—CPACE is a way of financing clean energy and energy efficiency projects using this property assessment tool that has priority over other financing and has long term financing available at a very affordable price. Okay, second category of financing would be clean energy finance institutions, which are very important because they can provide integrated financing programs to support new markets rather than just being reactive or providing financing when projects are brought to them. They can actually design integrated programs that respond to real market signals and be flexible and be adaptive.

One of the best examples of this model is the New Jersey Energy Resilience Bank, which just opened its doors this fall. It's 200 million dollars of CDBG disaster recovery funds from municipalities to finance clean resilient power solutions that happened in the aftermath again of super storm Sandy. This financing is for critical public facilities and they're focused initially on clean water and wastewater treatment facilities. But their mandate is also to finance in the second round, second – third rounds other public facilities such as public housing, schools used as emergency shelters, hospitals, and police and fire facilities and the like. So the Energy Resilience Bank of New Jersey is managed both by the New Jersey Bureau of Public Utilities and also the New Jersey Economic Development Authority. They make loans and grants but also can provide credit enhancement. Now it's a model I think we should look at as it evolves. And it could be replicated we hope in other states.

Credit enhancement—credit enhancement refers to guarantees, pledges of additional collateral so you have an over collateralized debt instrument or cash reserve accounts that are available to a project or subordinated debt. System benefit charges are often used as credit enhancement both by state clean energy funds but also by green banks. The state green banks often play a credit

enhancement role for bond issuances or for other private lenders. Another major credit enhancement program is the US Department of Energy loan guarantee program, four billion dollars in loan guarantees to support innovative clean energy and efficiency projects. There are five eligible technology areas that are mentioned in that program. And the first of these is grid integration and storage, so micro grid and resilient power is one of their focuses. Again, as with all these bond programs there's an opportunity to aggregate projects statewide and regionally under these programs. We talk a lot about reduce—about credit enhancement in a paper that the Clean Energy Group has issued. It's on its website again called *Reduce Risk; Increase Clean Energy*. So you may want to take a look at how state clean energy funds are used to make bond financing but other private financing as well easier to obtain to qualify projects and to reduce the cost of financing for clean energy projects including resilient power.

Public and private ownership—solar city and other solar companies have transformed residential solar PV by providing lease financing. Third-party ownership and lease financing tools are largely responsible for the tremendous growth in residential solar in recent years. The question I think is can lease financing and its third party ownership accomplish for energy storage what it did for residential solar PV? Well, a lot of companies think so, are betting on it. Solar grid storage and other storage developers are proving the model out for commercial, government, and non-profit entities. By using leasing and third party ownership it often eliminates upfront costs to a host. And the development performance risk associated with these projects is transferred to the private developer. The companies' business models have benefitted greatly from new FERC rules. These are federal energy regulatory commission rules so that now these companies can receive and the hosts can receive additional revenue streams from providing ancillary grid services such as demand response or frequency regulation, charging and discharging energy to the grid. So these new business models make it easier for customers to include storage using third party leasing and PPA financing.

One other model I would highlight is utility owned and financed micro grids with resilient power. A good example is the Green Mountain Power's energy storage project in Redland, Vermont. This is a solar plus storage in a resilient power micro grid project. It's an exclusively solar powered micro grid and it's the first to provide full backup power to an emergency shelter in a public school. It received federal and state funding but most of the financing was rate based. It was recovered from ratepayers. It's two and a half megawatts of solar electricity project and it includes four megawatts of battery storage. So a lot of states have stepped up with funding to leverage private investment over 400 million dollars in new state funds in the northeast alone in the last 18 months or so. These states include Connecticut, New Jersey, Massachusetts, New York, and now Maryland.

Let me just say a word about one of these programs, the Massachusetts Department of Energy resources program called Community Clean Energy Resiliency Initiative. It's 40 million dollars of state incentives. It's funded with alternative compliance payments with a focus on critical infrastructure. These are city led projects, city-sponsored projects involving a broad range of technologies and it includes technical assistance money. You can find out more about it at that link. Here are a couple of examples from the round one awards. There is a—it's funded a community micro grid, which includes school shelters and police and fire facilities. There's a solar and storage initiative involving community center shelters, four of them in Boston, solar and storage for a fire department and a combined heat and power facility at a regional hospital that's able to start with no electricity from the grid.

So in closing, I wanted to emphasize that financing is important but really it's insufficient in itself. It's only one aspect of the public resources that are needed to accelerate deployment of resilient power. Technical assistance, widely available technical assistance. It's really important as people trying to figure out how this would work for their particular business or their particular building. That would include some target support for predevelopment costs to help developers and building owners get to yes, get to the conclusion that yes, I'm willing to invest my money and perhaps obtain financing in order to do a project. Then, of course, consistent support of policy, of public policy, is essential. So thanks very much. I'd like now to pass it back to Lynsey.

Lynsey: Thanks so much Rob. Just as some closing remarks here. We do have some resources and links available for you on the Power Point slide here. So please feel free to visit these sites for additional resources, tools, and information especially as related to both what Jason and Rob discussed today. I also want to provide Jason and Rob's email addresses in case you have additional questions or thoughts that come up after this webinar. A special thank you to Jason and Rob for all the excellent ideas, strategies, and information really to help communities become more energy resilient overall. Thank you today for joining us for the webinar. Please refer to the NDRC HUD Exchange website for additional information on this webinar series as well as archived presentations that have been given throughout the topical webinar series. Again, thank you Jason and Rob and thank you for joining us.