

*Krystal Laymon:* Hello, everyone, and welcome to the 2020 Better Buildings, Better Plants Summit, A Virtual Leadership Symposium. Next slide. Thank you for being here with us today. We have a wonderful session prepared and some fantastic speakers that we will introduce in just a moment.

Before we dive in, there are a few housekeeping points that I would like to cover. Please note, today's session will be recorded and archived on the Better Building Solutions Center. We will follow up today on today's recording and slides to be made available. Next, attendees are in listen only mode, meaning your microphones are muted. If you experience any audio or visual issues any time throughout today's session, please send us a message in the chat window, located on the bottom of your Zoom panel. Next slide.

I'm your moderator, Krystal Laymon, policy advisor at the U.S. Department of Energy at the Office of Energy Efficiency and Renewable Energy. Next slide. Today, we'll be learning about energy affordability and energy equity planning. I'll provide information on the U.S. Department of Energy's activity in this space and we'll hear from guest speakers that are the real movers and shakers getting things done on the ground. Plan on having an interactive session, so there will be polls throughout and also, a Q&A session at the end.

We hope you'll join the conversation on social media through Twitter and LinkedIn. If you like what you hear, please remember to share it. Learning about new resources and best practices is how we can collectively succeed, advancing energy affordability and equity.

We are excited to announce that today, we'll be using an interactive platform called Slido, for both questions and answers, and interactive polling throughout the session. Please go to [www.slido.com](http://www.slido.com) using your mobile device, or by opening a new window in your Internet browser. Today's event code is #bbsummit. Once you enter this event code, please select today's session title in the dropdown menu, "Measuring Up to the Equity Challenge."

If you would like to ask our panelists any questions, please submit them any time throughout the presentation. We will be answering your questions near the end of the session. We will do our best to answer clarifying questions as we go.

I will give everyone a few moments to open up Slido and select our session. We want the session to be lively interactive as possible. The input we receive helps inform us on your interest and disinterest. I'm hoping folks have that up. We're going to launch our first two polls and request some feedback from everyone. Here's the poll. It's always helpful to know who's in the room, so curious on what sector you represent.

All right. We're seeing a lot from the states, nonprofit too. Other. It's always interesting when people choose other. We may have missed a category. Great. We can go ahead and close the poll shortly.

All right. So, we have a few others. Where are you joining us run today? It's helpful for us to understand which parts of the country you're located. Many of you may be at home right now, but exactly where you are.

Okay, we have a few people from Massachusetts, St. Louis, Detroit, Florida, Washington, D.C., Portland. Cool California, I like that one. It's good to help clarify, too. You may not be where you work right now. New York, suburbs. Arkansas.

It looks as though we had a pretty good smattering across the nation, which is excellent. This time zone is a good slot, too. So, we're able to capture a lot of folks. All right. We can go ahead and close that poll. As I mentioned, we'll have several throughout, as well.

All right. Well, thank you so much for joining us. We had a great amount of folks throughout the nation, so I'm very pleased. Now, I'm going to introduce our panelist. Today, we have Ariel Drehobl from ACEEE. Michelle Gransee from Minnesota State Energy Office, co-presenting with Mary Otto, a travel liaison with the Minnesota Department of Commerce, and we'll have Daniel White from the District of Columbia Department of Energy and Environment. Thank you so much for being with us today. Next slide.

As I mentioned in the beginning, my name is Krystal Laymon at the U.S. Department of Energy, where I work with stakeholders to reach their goals, and including clean energy and energy equity goals. Next slide. I will be covering a range of different DOE resources and. Next slide.

Before we dive in, I want to give a high-level overview of the U.S. Department of Energy and where my office is. There are many different offices within the US Department of Energy, and information I'll be presenting on comes from the Office of Energy Efficiency and Renewable Energy, which is highlighted. Next slide.

The Office of Energy Efficiency and Renewable Energy includes various technology topics with the vision of supporting a strong and prosperous America powered by clean, affordable, and secure energy. Next slide. The Weatherization & Intergovernmental Programs Office, also known as WIP, supports DOE's strategic objectives to create greater energy portability, security, and resiliency. Next slide.

There are several resources and programs that the US Department of Energy has developed over the past few years for various types of stakeholders to address energy affordability and energy equity. I will provide a high-level overview and go into detail a little bit more on each.

The first of these is a low-income energy affordability data tool, also known as a LEAD tool. It's our marquis tool that provides interactive national, state, city, county, and census tract level maps, charts, and data. It has been utilized by a diverse range of stakeholders to understand energy and household characteristics such as energy burden in the area they serve or live.

The next resource is the clean energy for low income communities accelerator toolkit, also known as a CELICA toolkit, an online resource as a result of a two-year effort to understand and provide solutions for stakeholders interested in bringing clean energy benefits to low-income communities. Energy, while an important aspect of day-to-day life, can be costly for some. Low-income households represent 44 percent of all U.S. households and spend an average of 8 percent of their income on energy bills, and depending on location, fuel type and income level, can be up to 30 percent.

Spending 30 percent of your income on energy bills is quite a lot, but there are solutions. Strategies featured in this CELICA toolkit are based on state and local programs that have seen energy and cost savings for participating partners. This is seen through various energy efficiency weatherization the and renewable energy models for single-family, multi-family residences and community solar. For example, in the CELICA toolkit, there are examples of

government and rural electric cooperative partnerships that create an on-build tariff and community solar programs that helped homes save \$350.00 a year.

The last program is the National Community Solar Partnership. DOE's solar energy technology office recently launched this new program to support stakeholders' interest in increasing access and affordability of community solar. Many people interested in participating in clean energy technologies cannot do so, with nearly 50 percent of households and businesses unable to host rooftop solar systems. Perhaps they are renters or their roof is not suitable.

Community solar is an avenue to bring clean energy benefits to homes. The National Community Solar Partnership welcomes stakeholders from all different industries, including state, local, tribal governments, utilities, financiers, nonprofits, and much more. The National Community Solar Partnership focuses on enabling partners the tools and information they need to design and implement inclusive and affordable community solar models that meet their own local goals.

With that, we'll do another poll. We're getting into some of the more details about the resources. How knowledgeable are you in energy equity or low-income issues? We have the option to choose very knowledgeable, someone knowledgeable. Helping us understanding where people fit in terms of some of the activity they are engaged in.

Oh, excellent! We have a lot of knowledgeable and somewhat knowledgeable attendees. All right, somewhat knowledgeable. Hmm. We're 50 percent somewhat knowledgeable. That's excellent. I don't think it would have been that way a few years ago, so this is great. All right, we can probably go ahead and close the poll now.

We have a follow-up question to that. What topic are you most interested in learning about related to energy equity and low-income issues? Hmm. A lot of interest in the integration of energy efficiency and renewable energy, which is always a powerful combination. Okay, we can go ahead and close that poll. Thank you.

A slightly deeper dive into these resources. CELICA was a two-year DOE Better Buildings initiative that included the participation of 37 public, private and nonprofit stakeholders. CELICA aimed to address and understand their energy challenges and then highlight

solutions to address these challenges through knowledge sharing. The toolkit includes case studies, issue briefs, and other resources.

It also includes models for integrating energy efficiency and solar solutions, as we saw in the poll, inclusive financing, community solar, and other programs that combine and leverage funding for energy efficient and healthy homes. All these resources were developed through the partnership and lessons learned from CELICA partners, which we are grateful to have worked with us, and we will hear from shortly. Next slide.

Partners successfully leveraged resources to commit up to \$335 million, which would be designated to help over 100,000 low-income households access energy efficiency and renewable energy benefits. Examples given on this slide share the promising low-income solar program models for single-family and multi-family affordable housing and community solar. For example, the state of Connecticut and CT Green Bank bundled energy efficiency and solar offerings, and was able to achieve solar parity. Now, the same amount of solar PV systems are owned by low-income households as non-low-income households in areas that they serve.

In addition to the toolkit, CELICA partners identified additional stakeholder data needs, including information on energy burden and housing characteristics. This sparked the creation of the low-income energy affordability data tool. Next slide. LEAD tool was developed by the U.S. Department of Energy and the National Renewable Energy Laboratory, NREL, and it was a coordinated effort between WIP and the Strategic Priorities and Impact Analysis Office.

The goal of the LEAD tool is to help communities in their energy policy and program planning by providing understanding of low- and moderate-income households and characteristics. With the LEAD tool, stakeholders can develop maps, charts and data that breakdown households down to area, median income limits and energy burden. Since its launch in summer 2019, over 4,000 people have used the LEAD tool, including stakeholders such as National Grid in New York and the state of Kentucky. Next slide.

Hot off the press as of yesterday, the U.S. Department of Energy published a use case on how the state of Kentucky's energy office used the LEAD tool to help disadvantaged communities. The Kentucky Office of Energy Policy used the LEAD tool to identify counties in Kentucky with the highest energy burden. With this knowledge, Kentucky staff allocated funds to relevant nonprofit

organizations that provided home repairs, weatherization upgrades and other solutions in the area where they served.

The LEAD tool has helped target geographic areas of greatest energy affordability needs, highlighting that energy efficiency can be part of a coordinated economic revitalization strategy. Using data about energy characteristics allowed Kentucky to identify partner organizations with the specialized knowledge and expertise to address issues common to targeted areas. We appreciate Kentucky's work with us to provide examples to others on how to make data-driven decisions.

With the LEAD tool, others across the United States can use visualizations to communicate with stakeholders about the dimensions of energy affordability at various geographic scales and engage in program planning by data. Next slide. Here are a few examples of how stakeholders have found the tool useful. I won't go into them, but you can see them here. Next slide.

The National Community Solar Partnership is the U.S. Department of Energy's latest activity, a coalition of stakeholders working to expand access to affordable community solar to every American household by 2025. Partners leverage peer networks and technical assistance resources to set goals and work to overcome persistent barriers in expanding community solar access to underserved communities. The three goals of the partnership are to make community solar accessible to every U.S. household, ensure community solar is affordable for them, and enable communities to realize supplementary benefits and other value streams from community solar installations. Next slide.

To meet these goals, the National Community Solar Partnership connects an array of stakeholders through collaboration, and network infrastructure and technical assistance. To join the partnership, please visit our U.S. Department of Energy's National Community Solar Partnership website and register as a partner.

Next, we'll just do a couple more polls, just to make sure we have people... Oh, I'm sorry. I also wanted to give a plug. We plan on having our summer series in July. I will also be hosting another session on low-income solutions in the renewable energy sector on July 9<sup>th</sup>. If you have any questions, feel free to reach out to me.

We'll do another poll. This next poll, if you have been involved an energy equity or energy affordability issues, what is your greatest

challenge? You can go ahead and just write in. There's such various challenges, it's always great to see.

We've got working with my utility, customer buy-in, data collection, identifying matrix, getting landlords involved, working with the utility, funding, reaching rural areas. Work with communities. Financing or funding. Funding is a challenge, yes. Relationships with building owners and managers. Okay. Understanding programs that work. That is a huge highlight that we try to do here, show best practices. All right. We'll go ahead and close this poll.

Another quick one. Which resources would be most helpful for increasing your knowledge or activity around energy equity or energy affordability? We have technical reports or analysis. We've seen peer learning work very well. People seem to like peer learning a lot. Certain toolkits have been helpful for people's knowledge being increased.

All right, I think we can go ahead and close the poll soon. All right.

So next, we will hear from Ariel. Ariel is a senior research analyst at the American Council for an Energy Efficient Economy. She conducts research and analysis on local level energy efficiency policies and initiatives, with a focus on energy affordability, energy equity, and low income communities.

*Ariel Drehobl:*

Great. Thank you, Krystal. Can you hear me okay? Yes. All right.

Okay, so I'm gonna start today by setting the stage and providing some examples of what equity looks like in the energy efficiency sector, with some examples of strategies that utilities, local governments, and others can take to better incorporate equity into programs and policies that they're working on. Next slide, please.

I work for the American Council for an Energy Efficient Economy, which is a nonprofit research-based organization located in D.C. that does research on energy efficiency across all sectors of the economy. I work on the local policy team at ACEEE and a lot of the work that I do is around looking to improve and expand low-income energy efficiency programs as well as work around energy equity and with local governments. Next slide, please.

I want to start this presentation with some level setting around definitions of equity, and how we can think about how to define

and measure equity within the energy efficiency sector. Next slide, please.

Many of you may be familiar with this image, which in this form or others has become pretty ubiquitous that I've seen, in terms of helping us visualize equity. This picture is illustrating the difference between equality and equity, and it shows that while many people tend to use these terms to mean the same thing, they actually are a bit different.

Equality means giving everyone the same thing, regardless of where they come from or the needs that they might have, while equity means giving everyone the resources that they need for all individuals to reach common goals and outcomes with consideration for where they're coming from and their current resources.

You can see how in the first image here it's showing equality, with each person receiving the same box, the same number of boxes, with the outcome resulting in not everyone can see the game that's happening behind them. In contrast, the second image here is showing equity, where each person is receiving the boxes that they need in order to all have the same view of the game.

One example of how utilities have taken an equity approach to energy efficiency is the creation of low-income energy efficiency programs or targeted clean energy programs for low-income communities. These programs are trying to address the additional barriers that people with limited incomes may face accessing energy efficiency or other clean energy investments. They can then provide these additional boxes for those who need them, in terms of making it easier to access the programs. Next slide, please

The slide just adds one more concept that I want to throw out there for us to be thinking about as well, and that's that of justice. Justice means removing the systemic barriers so that all people can access the same goals without the need of additional supports. The example in this image would be removing the fence so that everyone can now see without the need for boxes.

In the energy sector, one concept of justice would be for all people to have access to clean and affordable energy, and live in comfortable well-heated cooled and safe homes. Next slide, please.

This slide provides just one more illustration of this equity and equality discussion that I really like, which is showing that in order

to achieve equitable access and participation in energy efficiency, clean energy and other programs, sometimes you need to design policies and programs differently to meet the specific needs of those you are trying to serve. For example, additional boxes aren't always a solution for everyone, and sometimes you may need a different solution or approach or policy to help achieve the same goals for different people. Next slide, please.

To give a little bit more background on equity, this slide is showing the social determinants of equity, and some of the barriers that people face in accessing them. This image is from a study that King County, Washington did in 2014 to create a determinants of equity baseline to help them measure how to improve equity within the community.

This is showing that people need to access the determinants of equity in order to access opportunities and prosperity. Some of the determinants of equity include examples shown here, such as affordable and safe housing, access to parks and natural resources, quality education, access to health and human resources, equitable law and justice systems, family wage jobs, and affordable energy.

If people don't have access to the determinants of equity, then there are major impacts on the community at large, such as higher healthcare costs and health issues, crime and incarceration, lower graduation rates, limited quality housing available and a smaller skilled workforce. By finding ways to remove these barriers and let people access these determinants of equity, that leads to better outcomes for communities. Next slide, please.

On this slide, I'm diving a little bit deeper into some definitions of what we mean by equity and how we can think about it within the energy, and especially energy efficiency sector. Here we have four dimensions of equity and how they relate to energy efficiency. These include procedural equity, distributional equity, structural equity, and transgenerational equity.

Procedural equity focuses on ensuring that decision-making processes around developing and implementing energy efficiency programs and other clean energy programs are inclusive, accessible, and authentic. Some cities and utilities are pursuing procedural equity outcomes by structuring their public engagement strategies in ways that increase feedback from marginalized groups such as by conducting community forums in languages other than English, organizing community meetings in low-income communities of color, or involving community-based

organizations in leading these outreach and program development efforts.

Some cities have given community residents or local organizations formal roles in decision-making processes, such as in working groups or city committees or boards, which then can allow them to influence decision-making that affects the creation and implantation of programs reaching their communities.

Beyond engagement and inclusivity efforts, cities and utilities can also establish structural equity measures that hold decision-makers accountable for how policies and programs benefit constituents. For example, utilities can include goals and metrics and protocols on how to track progress towards reaching equity goals. Utilities can decide what to include in cost-benefit testing and how they will value the additional benefits of energy efficiency in planning processes.

In terms of achieving distributional and transgenerational equity, cities and utilities can further clean energy development in communities that have been historically underserved by such investments. For instance, some utilities are developing strategies to offer long-term solutions to providing clean, affordable energy in low-income communities, and some cities are engaging in efforts to train workers to obtain high skills in in-demand careers in the energy efficiency sector. Next slide, please.

So, here I just want to briefly highlight a report that was published last year by the Urban Institute and Green and Healthy Homes Initiative, which gets into how to measure the dimensions of equity in the clean energy space, as well as progress towards those dimensions of equity. Next slide, please.

This slide has more information from that report. It talks about some of the barriers to equity that may be experienced in the clean energy sector. Some of these barriers can include considering historical legacies and past history that has led to disparities, discriminatory practices and exclusion when we're designing programs and policies, as well as keeping an awareness of populations and groups that have been historically treated unequally and who may be at a unique disadvantage in relation to the service or institution in question. In this case, talking about energy services and affordable energy.

It's also important to include voices from the community that you are aiming to serve during the conceptualization, design,

implementation, and evaluation of a program with sustained engagement with community throughout the process. Equity is also measured in determining the ability of different groups to access services, as well as in output differences. So, you want to ensure that different groups do not receive disparate treatment consciously or unconsciously when participating in a program.

Equity is measured by disparities in the desired outcomes across groups of interest. Most services are intended to produce a specific social, financial, or physical outcome. In order to make sure a program is equitable, these outcomes need to be measured to ensure that they are equally achieved by different groups participating. We want to see that everyone is able to look over that fence, all with an equally good view of that game that's happening. Next slide, please.

Now, I want to get into a few more specific considerations for local governments and utilities in general around design and implementation practices that can lead to more likable outcomes. Next slide, please. This slide lays out how ACEEE has foundationally approached equity in the energy efficiency space, including some of the themes we think about most often. These aren't arranged in any particular order and they include addressing the high-energy burdens of low income households, as these households often lack energy efficiency measures and appliances to keep energy costs low.

Designing efficiency requirements to account for low-income and moderate household considerations, and how they will impact low-income households, and how to deal with things like upfront costs that may be a barrier to accessing programs. Running or partnering with programs designed to reach traditionally underserved markets, which can include streamlining services and offerings, having an inclusive planning process for policies and programs, and also working to develop an inclusive workforce. Next slide, please.

This slide includes a few things that I have thought about in terms of why limited income households experience higher energy cost burdens and unaffordable energy. Some of these are that these households tend to live in older, less efficient buildings with older appliances and building envelopes often lack discretionary capital to invest in efficiency. Many also are renters, so they experience the split incentive problem, which I saw some people flagged as one of the major equity issues that you're thinking about.

Many also have been historically overlooked and underfunded by efficiency programs in the past, due to a lot of the barriers that these communities face. An equity approach would be to identify these barriers, and work to design a program to address them to help people reach and achieve the determinants of equity, that affordable energy. Next slide, please.

Some utility cities and states are beginning to use energy burden as an equity indicator, and they've begun to design programs to lower burdens to an affordable level, or target households with high energy burdens. As a step back, an energy burden is the percentage of household income spent on energy bills. ACEEE has done a few research reports on this and we've found that the average household energy burden is about 3.1 percent, with a high burden often defined by researchers as above 6 percent. Next slide, please.

We found recently, using 2017 American Housing Survey data, which is the most recent available data, we calculate that one-fourth of all households in the U.S. have a high energy burden, spending more than 6 percent of their income on energy bills. This illustrates that there's a great need for energy affordability solutions for many households across the country. I'll also note that ACEEE is currently in the process of updating our energy burden research, looking at energy burdens in cities, and that will be published this fall for those interested. Next slide, please.

Now, I want to look at equity in local clean energy policies. This light is a little hard to read, but I'll provide an overview of what we're looking at here. ACEEE publishes a city clean energy scorecard each year, which scores 100 of the largest cities in the U.S. on energy efficiency policies relating to local government operations, community-wide goals, building-related policies, energy, utilities and transportation policies.

In 2019 and 2020, ACEEE incorporated metrics that are measuring how well cities have begun to incorporate some equity strategies into the policymaking. In the report, we measure equity across these five categories that you can see here.

One area we focus on is climate and clean energy planning. We look to track metrics on committee engagement, equitable decision-making and accountability to social equity in different cities and local governments. These metrics track how cities are pursuing procedural and structural equity outcomes. Procedural outcomes include designing engagement strategies to better reach

marginalized groups and granting marginalized groups a role on a formal decision-making body.

Structural equity outcomes include setting quantitative goals to remedy equity or other energy-related inequities. A second area includes inclusive clean energy incentives and financing, which recognizes cities that offer low- or no-cost weatherization, solar installation, or other clean energy services to low-income residents. A third area is utility-led low-income and multi-family programs, which are programs that are focused on providing whole-building improvements to lower energy burdens for these groups that are often overlooked by traditional programs.

A fourth area is how cities are supporting local workforce development. These metrics that we look at our exploring inclusive initiatives, procurement, and contracting processes, as well as city-led workforce development programs that seek to increase participation from marginalized residents. The fifth area in the scorecard that we look at is policies that increase access to clean and affordable transit. These metrics recognize that cities, some of them offer subsidies for efficient transit options. We're also looking at the percentage of low-income households near high-quality, all-day transit.

If you're interested in learning more about what cities are doing what on these policies, you can visit ACEEE's policy database, where we have information on the 100 cities included in the study. Next slide, please.

Finally, I want to provide a few recommendations and thoughts about utilities are incorporating equity-focused strategies in their energy efficiency programs planning, implementation and evaluation. We've seen that utilities can ensure that their programs achieve more equitable outcomes through robust stakeholder engagement. When utilities identify the right stakeholders, including them in planning processes as well as in implementation and evaluation processes, this can help to ensure that programs are designed to meet the needs of the community, rather than the community having to fit the design of a program.

Utilities can also work to incorporate metrics to track equity outcomes programs. The first step to do this is to learn more about the communities that they're serving by tracking demographic data such as age, race, ethnicity, income level, languages spoken, education, et cetera. By tracking this data, utilities can know who their program is and isn't serving, and work to figure out how to

address the barriers that people may be facing to participating in programs. For example, do they need more boxes or do they need a ramp, to go back to that earlier example.

The final example here is for utility programs to include some best practice design measures that can help reduce some of those barriers to entry that people experience when trying to access some of these programs. Some of these best practices include statewide program coordination and one-stop stop models, which we've seen in Massachusetts, New Jersey, and Colorado. Market segmentation and targeting that require understanding a population and the needs of those aimed to be served. Leveraging diverse funding sources, such as looking at leveraging health dollars or other areas where there's benefits from weatherization including health and safety measures, prioritizing deep savings and partnering with community members are all some of those best practices. Next slide, please.

This is just my final slide with some additional resources on here. You can learn more about research that ACEEE has done on low-income programs, some of these best practices in our energy burden research at these links. I also cite the CELICA toolkit as well. I found it very useful in my work, as well.

With that, I'll pass it back to Krystal.

*Krystal Laymon:*

Great. Thank you so much, Ariel. We'll do two very quick polls. Let's start the first one. Is your organization currently engaged in energy equity activities? We'll give this 30 seconds.

All right. We will close this poll and ask a subsequent one. What are the biggest barriers to your energy affordability projects or energy equity planning? You get baselining, the stakeholder engagement component. Give this just 30 seconds. I'm seeing financing and funding is a large barrier.

All right. We can go ahead and close that poll. Thank you, Alison.

Next, we have Michelle Gransee, who directs Minnesota State Energy Office within the State Department of Commerce, Energy Division. And we have Mary Otto, the tribal liaison for the Minnesota Department of Commerce.

*Michelle Gransee:*

Next slide. Thank you, Krystal.

Today, Mary and I will share a bit about our journey to partnership addressing energy burdens and broader energy equity issues. Next slide.

First, a little context. The Minnesota State Energy Office is comprised of three teams focused first on the informed and equitable transition of market-ready emerging technologies into the Minnesota energy landscape. Secondly, to reduce the energy burden of all Minnesotans while meeting Minnesota's energy goals and paving the way to a 100 percent clean energy future. Next slide.

Historically, our efforts around equity work were fairly limited, though impactful to the households served through the low-income Weatherization Assistance Program. WAP has the mission to reduce energy cost for low-income families, particularly for the elderly, people with disabilities, and children by improving the energy efficiency of their homes through free-of-charge comprehensive energy upgrades. In fiscal year 2019, more than 2000 homes received statewide services through weatherization. Next slide.

Yet, there are an estimated 519,000 income-eligible homes in Minnesota, and due to funding limitations, only nine percent of all eligible households have been weatherized since 2005. Next slide. So, more needs to be done to reduce the energy burden of households served and to serve more households. Therefore, we have been working on a number of methods to address income and other equity-related issues.

One example to share today actually began with the USDOE CELICA accelerator and the LEAD data tool that USDOE developed, which has helped us begin to do a deeper dive into broader energy equity issues. One result has been the development and implementation of the Solar Action Plan.

In Minnesota, I think we, just a few years back, at least for myself I should say, it's been a journey of being able to better understand what is meant by energy equity and starting to see the broader landscape. So, we started out by identifying barriers as it relates to access to solar, and identified a number of barriers that Ariel had mentioned, as well, around efficiency. Next slide.

This workgroup also identified five major solutions. To expand access to community solar gardens, to develop a model solar incentive program, to identify "no loss" opportunities so that

efficiency and renewables don't have to compete, but can be paired together. Finally, to explore alternative financing options and a coordinated education outreach program. Next slide.

The results to date have been that we have developed some policy options. We have started to rethink how we do policy. We've also partner with the largest utility in Minnesota to develop a model low-income carve-out within a solar energy incentive program, addressing some of the barriers previously listed. And begun with weatherization by developing "Solar as a Measure." We went through the approval process and begin the pilot stage of adding solar to the weatherization program. As we'll mention later, we've been working on doing some targeted funding. Next slide.

But as we continue to build on these early successes, we've also realized we must do more than offer current programs or simply modify existing programs. At the state, we need to build upon the collective efforts of many organizations and make data-driven decisions in order to develop targeted strategic efforts in a coordinated way. Next slide.

Through the analysis of energy burdens throughout the state by location, income, and other demographics, we have finally set forth a goal to basically reduce the energy burden of all Minnesotans to less than five percent of their annual income equivalent.

Now, to Mary.

*Mary Otto:*

Thank you, Michelle. Next slide, please.

The chart you see here is from energy assistance program household, and it's the program year of 2019. Green is the energy burden before the energy assistance program payment. Blue is the energy burden after the energy assistance program payment. The energy burden for Native American households in the program year of 2018 was at 14.2 percent. You can see, there was an increase from that program year to 2019, and we're at 15.4 percent.

As we can see from this chart, having LIHEAP, the low-income heating energy assistance program, and adding in weatherization, we can meet this goal for many of the demographics we serve in the state of Minnesota, when both programs are utilized. Yet, having both programs cannot reach all Minnesotans. Even among those reached, Native Americans still had the highest energy burden. Next slide, please.

Minnesota shares geography with 11 federally recognized tribal nations. The MCT, Minnesota Chippewa Tribe, represents six bands and has 40,000+ tribal members. Red Lake Nation is a closed reservation, meaning they chose not to participate in the Dawes Act Allotment Act of 1887, keeping their land intact. They have 60,000+ tribal members. There are four Dakota Sioux communities in the southern part of Minnesota, and their membership is combined as roughly 4,000 members residing in the state of Minnesota.

Tribes are sovereign, meaning the ability to govern, protect, and enhance the health, safety, and welfare of their tribal citizens within tribal territory. Tribal governments maintain the power to determine their own governance structures and enforce laws through police departments and Tribal courts. The governments exercise these inherent rights through the development of their distinct forms of government, determine their citizenship, establish civil and criminal laws for the Nations, taxing, licensing, and regulating. This is an inherent right of indigenous people, not a right given to them by any outside entity.

The state of Minnesota, we have a board called Minnesota Indian Affairs Council. It is made up of 11 Tribal leaders, and non-voting members include two state representatives and two state senators, as well as all 24 state commissioners. The lieutenant governor regularly attends the Minnesota Indian Affairs Council quarterly meetings. The mission of the Indian Affairs Council is to protect the sovereignty of the 11 Minnesota tribes, to ensure well-being of American Indian citizens throughout the state of Minnesota. Next slide, please.

A little history on how the state of Minnesota has increased its engagement in government to government consultation with Tribal leaders. It started back in 2002 with Governor Ventura. It followed in 2003 with Governor Pawlenty. Some of the changes that we've seen, those original executive orders had verbiage that whenever feasible, consult with Tribal governments. It ordered agencies in instances where the state assumes control over formerly federal programs to consult and decide if to consider unique Tribal needs and endeavor to ensure Tribal interests are not overlooked. If so requested by one of our tribes, agency shall review the feasibility of transferring control over a program to one or more tribes.

From 2002 to the first modification in 2013 by Governor Dayton, he maintained the order, but at this point required cabinet-level agencies to begin taking Tribal state relations training. It started

with the leadership and eventually went down to agency staff. While not required under this executive order, the Department of Commerce, where Michelle and I both work, designated a liaison for full-time representation. It was fully funded by the three energy units within direct relationships with Minnesota tribes.

So, to where we are today. The first executive order by Governor Tim Walz on January 9, 2019 established a Council on Diversity Inclusion and Equity. He later went on, in Executive Order 19-24, to affirm the government to government relationship between the state of Minnesota and the Minnesota Tribal nations, building on Dayton's work by formally providing for consultation, coordination and cooperation. Next slide, please.

In effect, with Executive Order 19-24, building on those relationships, there's a direct recognition of Tribal-State Relations Training. Part of the executive order talks about consultation, and that's between tribal leaders and commissioners. It talks about policy and budget with dates when these need to be accomplished throughout the fiscal year. There's coordination, it's relationship building with state and tribal counterparts, and building capacity between governments.

We have 24 state department agencies, and we have 11 federally recognized tribes. In the data I shared with you, you see that we have over 145,000 enrolled Tribal members in the state of Minnesota. That's not including descendants.

The state department agencies have an obligation to serve all Minnesota citizens. Tribal members have a unique political status, as they are citizens of three sovereigns: their tribe, the United States, and the state in which they reside. In order to educate and create partnerships, the Tribal-State Relations Training is required through the executive order. The Tribal-State Relations Training prepares state agency employees with knowledge and tools to consult with tribes on matters of mutual interest.

The governor also ordered that all commissioners and top leadership staff attend the Tribal-State Relations Training, along with their assistant commissioners and program staff. The order mandates Tribal relations training for all employees whose work may impact tribes. The state has instituted Tribal-State Relations Training which will be the foundation and basis of all other tribal relations training sources. All agencies must direct certain staff to complete training to foster a collaborative relationship between the state of Minnesota and Minnesota tribal nations.

In addition to all commissioners, deputy commissioners and assistant commissioners, all agency employees whose work is likely to impact Minnesota Tribal nations will attend the TSRT. Minnesota's executive order 19-24. Next slide, please.

In this slide, we're looking at tribes and their infusion into the state economy. For the state of Minnesota, they are the 14th largest employer. Minnesota tribes contribute \$1.8 billion to the economy, thanks to their gaming casinos. Tribes pay their gaming and government employees more than \$500 million in wages and benefits annually. Tribal casinos pay more than \$64 million annually toward employee health and dental insurance benefits.

Tribes purchase more than \$717 million in goods and services annually, including more than \$482 million from Minnesota businesses. Tribal casinos attract almost 23 million visitors annually, second only to the Mall of America. So, tribes are great partners. They're experts in their field and in knowing the needs of their members. Next slide, please.

*Michelle Gransee:* Thank you, Mary. The training that Mary referenced is excellent. Our entire staff now has or is scheduled to attend this training because it provides a base foundation for understanding in our work. Whenever we're going to work on inequity, we need to first do some self-assessment. I mention this because this is a very simplified view of an excellent spectrum on community engagement, and the reference is in the slide, at the bottom of the slide. I highly recommend it for others.

This was developed by a consortium of organizations that really help us see that there are six approaches to stakeholder engagement and with the greatest, most positive approach being the defer to on the far right. To ignore is to marginalize or deny access to the decision-making process. It's really when we as state, or local, or other agencies develop programs or policies in a vacuum. To inform, then, is to provide stakeholders with relevant information, like posting a document on a website, or gathering a public hearing and if you're able to attend, you're able to be informed.

When our actions move over to consulting, there's a gathering of input and acknowledgement that we are actually caring about what others think. When we begin to involve stakeholders, such as one of our primary stakeholders, the Tribal nations in Minnesota, within that decision-making process as partners, as sovereign

nations, then we ensure that the needs and assets of each nation are integrated, and that the planning is uniform.

When we take it a step further into collaboration, we ensure that there is capacity within the stakeholders that we are working with to play a leadership role in the identification of issues to be addressed and implemented. Finally, the end goal, especially in the case in which we as state agents are providing federal or state funding, programs, policy development that impact our partners within the sovereign nations that we are working with, it really is to defer to the nation and move into the democratic participation of community driven decision-making.

For example, within weatherization, we've worked to move from a place of being a program implementor to a program partner. We historically had a Tribal representative on our policy action committee, or PAC. Now, though, in partnership with the tribes, we went all the way to defer in many cases, but instead of being in ignore or informed, we've moving along that spectrum.

For instance, Mary and I and a group of all of us together have begun hosting cluster meetings in which the community action programs, the Tribal nations, LIHEAP, and weatherization all meet at one of the Tribal nations to discuss as a region how we can improve services and work more effectively together. We are jointly building on earlier solar pilot project activities to begin developing funding opportunities that our solar for Tribal grants program that has been informed by what Mary has learned as the greatest interest in needs of the 11 Tribal nations. This project, we are developing more collaboratively.

Finally, as a department, we're now holding formal consultations annually in which Mary and our commissioner visit with each tribe to develop joint initiatives, joint policy and work on support of funding opportunities such as a recently approved \$42 million zero net energy project with the Prairie Island Indian community.

In next steps, we have established a new community resiliency position that we'll be able to post once our hiring freeze is lifted. We are partnering with Tribal nations on the work with the subcabinet on climate change efforts within Minnesota to better approach the recommendations in policy development work that we do in a more equitable way.

When we now look at energy equity, we're working to think more broadly in discussions around climate, resiliency, programs and

policy development. We are analyzing all of our programs and the policy initiatives and stakeholder you engagement efforts to assess how we spend our time and how we look at our work.

Back to you, Mary. You have to go a couple of slides. I forgot to forward them.

*Mary Otto:*

Next slide. If we go back to the GreenStep. There you go, thank you. Thanks, Michelle.

I'm gonna show you some examples with you on the continuum of stakeholder engagement, and some of the outcomes that we've seen and are building upon. GreenStep cities. GreenStep is built around 29 best practices in the following five categories: buildings and lighting, which focuses on energy and cost-saving strategies addressing public and private buildings; transportation encourages efficient city vehicle fleets and infrastructure that enhances connectivity, mobility options and acting living; land use provides best practices to promote green infrastructure, natural resource preservation, efficient city growth, and walkable and bikeable neighborhoods; environmental management tackles actions ranging from environmentally preferable purchasing and urban forests to water quality and solid waste; economic and community development targets best practices that promote community resiliency, sustainability, economic development and engage local community members to improve quality of life.

In the state where we live, in Minnesota, the tribes are located from the metro area in the southern part of the state all the way up to the very furthest point in the state of Minnesota, which is rich with tons of lakes and state forests, and a lot of beautiful environmentally preserved areas. There was a pilot program of the cities program has started in 2014. Prior to that, there was some movement with Indian Health Service and the Leech Lake Band of Ojibwe DNR. They used the GreenStep best practices actions to prioritize implementation of a select solid waste management action. They weren't part of the GreenStep cities, but they recognized the benefits of using their best practice to do some work on Leech Lake.

Since that experience, Leech Lake has requested formal participation in the GreenStep program. Despite the fact that GreenStep actions are designed to work for Minnesota cities, not tribes, the GreenStep program steering committee has enthusiastically welcomed Leech Lake, and they have developed an evolving set of guidelines for other tribes. So, if they wish to

join, they are now able to become part of the GreenStep Tribal Nations program. It's a really great partnership between the state and the tribes in recognizing the differences and the commonalities.

There are four Tribal communities currently recognized as GreenStep Nations. That's Leech Lake, Red Lake, Fond du Lac and Prairie Island Indian community. The recognition of a city at step one participation in the GreenStep program requires a city council resolution. For Indian nations, a letter of intent or resolution to participate is equivalent and for legal and process reasons, need not come from Tribal council, but could come from a division of Tribal governance. For example, the director of a tribe's Division of Resource Management could sign off on the resolution.

Some of the actions include focus on internal city Tribal operations such as reservation-wide environmental management, transit and local energy. This is another example of state agencies and state government working together with Tribal government and recognizing the sovereign relationship between them, and being able to collaborate on things that are equally important to both living and residing in the same state. Next slide, please.

This example is from Leech Lake. Leech Lake Band of Ojibwe, they have done a lot of work on sustainability. They have participated at a lot of different levels. The photos you see here are their solar master plan, which they did some consulting work with. Then, you see a solar PV, a community project that they engaged in. They seek to significantly advance sustainability in their built environment.

Their approach will be threefold: solar readiness in new construction and major renovations, approaching net zero energy and overall sustainability of new construction and major renovations, and electric vehicle readiness and infrastructure support. The funding secured from CERTs will cover the cost of hiring a design professional to develop guidance, policies and ordinances that facilitate implementation of the band's new initiatives.

In an effort to fully understand the solar potential across Leech Lake Band of Ojibwe's Tribal government facilities, their staff worked with a consultant to produce the solar master plan that you see in the photo. It provides building benchmarking, solar suitability, and solar PV designs and budgets where it makes sense. For technology, the study of solar electric potential, they used a

central CERTs seed grant. The total project was \$6,600.00 and they found other in-kind contributions to aid in paying for the project.

There was an interview with Brandy Toft, who is their environmental deputy director, and our staff from the SEO office, and had discussions with her around the three-pronged approach that they're using on Leech Lake for their sustainability. Some of their solar work was done before the plan. The band has been installing solar heating units in low-income homes within the community since 2008. So, they're also using solar furnaces as an offset, and using those in their housing homes, their HUD-built housing. It's about \$2,000.00 to \$2,500.00 for installation, and they're seeing when used correctly, a reduction in energy of 20 to 40 percent.

The project with the solar furnaces eased financial burdens of 100 Leech Lake families on energy assistance, with a yearly average of \$22,000.00 worth of electricity produced from their solar community garden. Following their solar master plan, they are now conducting structural integrity assessments of 30 buildings. The band could install as many as 200 kW per year, once they're able to solidify their strategic plan.

As the site assessments for solar PV move forward, they see a chance to expand the impact of the existing projects to other families in need. Their goal is becoming more self-reliant and sustainable, and just being better stewards for seven generations. So, that \$22,000.00 that is realized off their community solar garden goes directly back into their energy pot of money to help families who are income eligible for heat and weatherization, but who run out of monies or are just at the line when they don't meet the requirements. This gives an additional pot of money to help those families. Next slide, please.

In this photo, you see a Leech Lake housing development. During the planning phase, the resource management team was able to work with their housing authority to measure the degrees of the south wall placement of their homes, with the vision and hope to build and install solar furnaces. The vision became a reality, and they are currently in the planning phase of 30 additional homes that will include solar fixtures. The goal is to reduce monthly housing costs. The goal is also to promote Tribal environmental values.

Reducing short-term and especially long-term energy costs for the tribe and the Tribal members is huge in the economic development of the tribe, and the ability for families to provide other needed resources for their children and the community. Overwhelmingly, the utilities produce energy by burning fossil fuels that create greenhouse gases and other emissions. Tribes depend on energy provided by state-regulated utilities based off reservation, so this is another challenge.

Working with the state energy office, we're able to help the tribes have a voice, and address and look at some of the disparities or having equity when we look at energy boards and different resources in their reservation communities. Tribes must depend on outsiders for energy, for government operations, and economic development. Tribes have no authority over state-regulated utilities, and are subject to rate increases and supply interruptions.

I'm going to touch briefly on the partnership with HUD. When we look at the stakeholder engagement, we are moving into the involve portion in the work that we're doing. Tribes have Housing Authority boards that oversee their federal housing programs, in addition to working at the state level with Minnesota Housing Finance Agency. Through the course of the executive order, and the governor urging commissioners of the Tribal-State Relations Training to engage in cross-agency collaboration at a higher level, it's created a level of engagement from the State Energy Office as well.

We are now working with Minnesota Housing Finance agency on different projects, as they are the hosts of an annual Minnesota Indian housing conference. The annual conference draws from other Midwest states as well as but not limited to Minnesota housing authorities. This has given the State Energy Office another avenue to connect and work with Tribal partners in developing solar energy technologies.

Through their HUD grants, tribes have what's called an NAHASDA plan. It's the Native American Housing Assistance and Self-determination Act of 1996. It reorganizes the system of housing assistance provided to Native Americans through the Department of Housing and Urban Development by eliminating several separate programs of assistance and replacing them with block grant programs, giving them more flexibility.

Now, we are looking at having the opportunities from a State Energy Office standpoint of engaging with the tribes at this level

of grant writing when they are putting their plans together annually to start looking at green renewable options, looking at solar, looking at PV for community buildings and their housing developments, and doing the work on the front end and saving tribes that money, and having more efficient homes.

So, when we're looking at weatherization on the backend 'cause we do both ends of that spectrum of work. So, when we look at their housing stock now, it gives us a really good picture from the State Energy Office of what can we contribute? What technical assistance can we offer? How do we be good partners in educating on the options that are available?

By partnering with tribes, the SEO is moving to involvement phase, listening to tribes prior to making plans for federal dollars coming in, having stakeholder engagement. Having those conversations before writing large RPs or putting out what we think is best. Instead of being located in an area far away from a reservation land, we are now having interactions when we're traveling to those geographical areas, through Northwest cluster meetings or other cluster meetings that Michelle mentioned. We get a really good sense of who we're serving.

This involvement phase lends to strengthening relationships and working together to accomplish the goals of OneMN, as we are all citizens. So, instead of looking at tribes as grantee, really recognizing their sovereignty and having the government-to-government relationship with them as a partner.

Thank you.

*Krystal Laymon:* Great. Thank you so much. I wanted us to hear from the District of Columbia. Daniel White is an energy program specialist in the energy administration with the District of Columbia's Department of Energy and Environment.

*Daniel White:* Hello, Krystal. Can you hear me?

*Krystal Laymon:* We can hear you loud and clear.

*Daniel White:* All right, great. Thank you so much. That was a great lineup of information, and I think it set up the presentation for the District of Columbia greatly because what I'll be going through is basically just sharing our landscape, what the policy landscape looks like driving to market, and then talking about some of the case studies that we were able to develop through some of our work in equity

around solar, and sharing the benefits with low- or moderate-income communities. Then, touch on the two ways that we're doing that, and then wrap up and be able to talk about any questions and answers.

In the District, the mayor has a vision to be net zero by 2050. What that is requiring us to do is stretch our thinking and be more equitable in our approach because we know that the District is growing, and we're seeing a wider and wider gap in income equality, looking at the housing market and for folks there that need to age in place. Energy is a big piece of that. Next slide.

As I talk about the policy landscape, not going into all the details, but this is just a roadmap to show you how we got started and how we got to the position where we are now. Most recently in 2018, we had the Clean Energy DC Act, which helped expand our goals to 100 percent renewable by 2032. We're looking to have ten percent of that renewable capacity be solar by 2041. So, we have some very aggressive goals, but Solar For all is the strategy that we are looking at to help us achieve that goal, along with the Clean Energy DC plan. Next slide, please.

Solar for All basically, as you saw on the previous slide, was established in 2016. Basically, we had learned from our earlier efforts incentivizing solar deployments in the District, that the early adopters were in the more affluent areas of the city. Realizing that we wanted to be able to try to change that trend, and be able to share some of the benefits of solar in a very lucrative market, and be able to make it more equitable across multifamily buildings, single-family buildings, and across the city at all eight the wards.

When that policy went into law, we had to figure out how to do that. First, we were able to set up the Renewable Energy Development Fund that allows the funding for the program. Then, the second step of that, which happened to coincide nicely with the Clean Energy for Low-income Communities Accelerator Program in 2016 to help us identify where the solar capacity was in the District, and look at how we could connect the low- or moderate-income communities to that capacity, and how would we do that.

So, we had a task force come together, and that goes to some of the earlier discussion you've heard in the presentations, being able to bring the right people to the table to have the discussion so that you can get the buy-in and get the support to be able to implement your policies and your programs, to be able to move things forward. Next slide.

What we realized from that working group was that the barriers that we were facing were basically because D.C. is a very urban, dense area, we don't have a lot of access to ground mount or areas that we can actually put solar specifically to benefit wide population across the District. Then, on top of that, we also have an interesting market where we have the utility that does not own any generation.

So, we have energy suppliers that are out there that provide services to residents to allow them to get access to clean energy through energy service contracts, and we also have community solar policies and programs that sometimes mirror each other. That can cause a little bit of challenge for seniors or other populations that may not be as knowledgeable on what those mean, and what are the benefits, and what are some of the consumer protections that you have to be aware of in order to participate in that. So, making sure that we educate them and getting that information out.

We saw that there was a barrier with trust in those communities, so that was our second challenge. Then, workforce development. We wanted to be able to get to that 100 percent renewable, but we had limited numbers of installers with qualified staff to be able to go out and actually build these projects. Next slide.

Coming out of that information session with the working group, we developed an implementation plan. We also, again, were working closely with the Clean Energy for Low-income Communities Accelerator team and working through that implementation plan, which is actually the Solar for All program, which we'll talk about in a minute. In the first phase of that, we determined that in order to address those goals, we had to incentivize the market. By doing that, we invested \$23 million across a two-year span.

The first phase of that was in the innovation and expansion grants, to be able to provide options for developers to be able to come to the table and leverage public dollars to be able to get the maximized investment to help our funding expand to be able to get the most investment for our dollar. Then, we also wanted to address that workforce issue, so we were able to put a job training program in place to be able to train staff or workers to be able to be eligible to take advantage of this new green economy that was being created.

Then, we did some partnerships with our sister agencies and other institutions through those innovation expansion grants. Then, we also led by example through some community solar and resilience projects that I'll share with you shortly. Next slide, please.

This slide you see here is just a snapshot of the first phase, which was the innovation and expansion grants. We had nine organizations that were able to receive funding through the grants to go out and help address those barriers by developing business models that would help to deploy solar and also share the benefits of that with low- and moderate-income communities.

What we were trying to achieve on the Solar for All was to be able to reduce households' energy burden and reduce their electricity bill by 50 percent year over year for the next 15 years. So, leveraging the funding that we put out, these grantees were able to do some very innovative projects. We're still actually getting a lot of these projects on line, and this is almost two years later. But as they come online, we're able to connect the beneficiaries to receive those benefits through different models. We'll talk a little bit about that through some of the case studies. Next slide, please.

As you see here, these are a couple of the sites that were developed through the innovation and expansion grants. On the top, you have an affordable housing complex that was able to partner with one of our grantees, and we were able to provide a solar canopy system, as well as rooftop solar to help support sharing the benefits with residents there at that building. I think there were about 150 households that were able to benefit from just this particular site.

Then, to your right, you'll see a faith-based organization, a church that was able to participate. That is also a community solar project, which allows the church to be able to take the savings from the energy that's generated from the solar panels and deploy it through eligible income residents that are part of the community of that church, and to help them reduce their electricity bills by at least 50 percent.

Then, at the bottom, we have a community center that is participating in community solar as well that will be able to share the benefits of that electricity across about 150 residences within the District. Next slide, please.

In this slide, another one of our grantees was able to work with their partners. We were able to coordinate with an affordable housing complex that owned 12 properties. Actually 14, but we

were only able to get 12 done in the innovation expansion time period because there was some other issues with the other two buildings that didn't allow us to actually connect with them. But they did over a megawatt of power that will be able to serve up to 2,200 households across their portfolio. So, we're very excited about that. Next panel. Next slide, I'm sorry.

This is just another slide to show those additional sites that were developed under that same 12 property portfolio that would support up to 2,200 households. Next slide.

As I mentioned, we also wanted to look at how do we develop the trained and skilled workforce to be able to support all of the push that we were making to deploy solar for the benefit of low- and moderate-income communities in addition to reaching our renewable portfolio standard goal, which was very lofty and very aggressive. So, we needed to try to get people involved, get them trained, and get them ready to engage in that workforce.

So, working with Grid Alternatives, who was one of the grantees that partnered through a Solar for All grant, they were able to put together cohorts of training. They do three per year, 25 participants per cohort. Of course, as we are in these times of the pandemic or health crisis, there's been some transition in how the training program is able to work with the trainees. We've had to move a lot of the hands-on training piece of it to a more virtual platform, but we are still able to continue to move forward.

We're looking forward to installing on the residential direct installs through this program as well 'cause as the trainees are getting trained, we're able to work with residents and actually install solar on 60 to 100 low-income single-family homes. Next slide.

This is just some of the stats that we have collected from the work that's happened over the last three years. I think we've had seven cohorts in two years. We're getting ready to start an eighth. We've been able to install over 490 kW, as you see here. We've won a lot of recognition across the country for the work that we're doing.

A lot of these graduates are working with the agency at DOEE, and some are actually connected with the solar developers within the District through internal programs or apprenticeship programs. They also are looking at potentially going into doing their NABCEP certification as they move forward in their careers. Next slide.

These are some of the partnerships that I talked about. We have a couple of slides after this that share what these are looking like now, with the D.C.'s Housing Authority. They're the manager for a large portion of the affordable housing that's in the District. So, we were able to partner with them to be able to do a project where we were able to do roof repair and replacement, and connect it with weatherization. And also do solar plus battery storage to be able to have a resiliency element as we went forward.

The D.C. Public Library, we were also able to work with them. That project is still in the early stages of completion. So, we're looking forward to being able to work with the library and our other partners to be able to get the solar installed at a new construction at our southwest branch public library. That would be in Ward 7 of the District, and that would also help increase resiliency for the neighborhood there.

Then, last but not least, our flagship program or project that we love to talk about with the Department of General Services. We were able to partner to be able to develop a 2.6 MW solar system that's ground mounted on a brownfield site that will help us to serve over 750 households. We hope to have that up in operation by the end of this year, and serving those residents. Next slide.

As I mentioned, the resiliency centerpiece. This is a picture of the actual rooftop system. It was a partnership between Jubilee Housing and a new company called New Partners Partnership that came in and they were, I guess, former folks from a real estate law firm that wanted to get into helping to provide the benefits of solar to low- and moderate-income communities. So, they developed an organization that would go out and partner with downtown commercial buildings to be able to show them how to utilize a template to deploy solar and benefit low- and moderate-income communities.

This project will allow three days of energy based on the solar and battery configuration to power a resiliency area during a power outage. This is also close to areas where seniors and disabled residents, and persons that may have medical needs would be able to have access to go in the event of an outage that would help with the health and safety for the residents during that time. Next slide.

As I'd mentioned previously, the community solar partnership with Oxon Run, where we were doing the 2.6 MW project. It's currently in construction. We're super excited about it because we're looking at getting that up and running, like I said, by the end of this year if

not sooner. This one took quite a bit of collaboration and partnership to be able to get us to the point where we were able to get approval and move everything forward. Even with the funding available, there were just a number of layers of coordination across many agencies and across many zoning, and of course other potential land use challenges. But we'll definitely be very excited as this one gets wrapped up and is finalized. It will be able to serve residents in the District, and they can receive benefits that will be equivalent to half off of their electricity bill or at least \$500.00 a year per household. Next slide, please.

I'd like to thank you. That's my time. We look forward to answering any questions. Thank you.

*Krystal Laymon:*

Great. Thank you so much, Daniel. Very innovative way of using solar, especially with the lack of space.

Unfortunately, we won't get to the wonderful questions that we did receive. I want us to have the contact information of our panelists here. I highly encourage people on this call to reach out. We can really do this by finding ways to understand best practices and replicate the great innovative work that all these panelists are doing.

We also have an opportunity to have the panelists respond through Slido to your questions individually. So, we will allow some portion of that to occur, as well.

With that, I want to thank everyone for their time. Please rate this session. Your rating does help us understand what you're interested in in the future for the future summits, as well as future conferences.

*[End of Audio]*