
Eli Levine: Hey, good afternoon, everyone, and thank you for joining us. We'll get started in another minute or two.

[Silence from 0:00:15 to 0:00:52]

Eli Levine: Well, wonderful. Well, thank you all who were able to join us today. This is our fourth in the Better Plants Online Learning Series. This one is called Resources You Should Know. I know I'm particularly excited for this one where we're featuring some of our colleagues across the federal family at the United States Department of Agriculture Rural Development Programs and the Department of Commerce Manufacturing Extension Partnership Centers. Next slide. That's me, Eli Levine. I do these little introductions before we hand it off to the presenters each week. Next slide.

As you can see, this is our fourth in the Online Learning Series. If you happen to have missed any of the first three, the initial Town Hall where we had our partners talking about the COVID response and some updates that we've offered in terms of from better plants to new resources and tools that we hope you'll take advantage of if you happened to have missed that or the next two that we had, the Basics of Energy or Lighting, HVAC and the Building Envelope, they're all online on our website where you can watch the recording and go back and catch up. We have two more scheduled after this to focus on Compressed Air Systems and Water Efficiency.

Based on the response we've been hearing from so many of you partners, we may well keep this going in the future for additional weeks to come. As always, and I made this pitch last week too, if there's specific topics you want to hear or there are ways that we can improve these webinars to make them more valuable to you, please let us know and we're happy to do so. With that, I'm happy to turn this over and I'll introduce our first speaker.

Oh, I guess before that, let me talk about our – the next slide I'll talk about our online Virtual Leadership Symposium, The Better Buildings Better Plants 2020 Summit. This is now free to attend, unlike when we used to have them in person and you had to pay for registration. It should be a really great couple of days. I know I've been really blown away by the number of folks who RSVPed already and I'm pretty excited looking at the plenaries, speakers, and the panels that we're setting up. So please go to the website

there and register if you can. That would be great. We look forward to seeing you there. Next slide.

So with that, I'm excited to introduce our first speaker, David Stieren who is the Division Chief for the Extension Services at the NIST MEP of the US Department of Commerce. Mr. Stieren is a mechanical engineer who has been with NIST MEP since 2007. Prior to joining NIST MEP, he served 20 years in the NIST laboratories as a research engineer, project manager, and a program manager. He brings just really wonderful experience to the business, you know working on details on the staff of the NIST director, of the staff of the Office of the Secretary of Defense in the Pentagon, as well at our place at the Department of Energy and at the US Small Business Association.

So I could go on and on with his resumé and the experiences he brings to this, but I know he's squeezing us in between a number of important meetings that they have going on over there so I'm excited to turn this over to David. Dave, and looking forward to your presentation.

David Stieren:

Thank you very much, Eli. I appreciate that intro. So folks, good afternoon. It's a pleasure to be able to speak to you this afternoon about the Manufacturing Extension Partnership Program at NIST. NIST is the National Institute of Standards and Technology and we're an agency within the US Department of Commerce. NIST is a nonregulatory federal agency that has responsibilities for the nation's measurement infrastructure and the Manufacturing Extension Partnership or MEP Program is one component of NIST, and that's what I'm going to speaking with you about today. So Marissa, next slide please.

So I'm going to give you a little bit of an intro, folks, about what the MEP Program is, how we operate our National Network, why we exist, what we do. And then really I'm going to focus on how the MEP National Network is responding to the needs of US manufacturers today with respect to our national emergency including both the response that we're conducting as well as the work that we're doing to help manufacturers prepare for recovery from this national emergency.

Folks, in one slide this is what the MEP National Network is. We're a non-federal. The program is a public-private partnership that has local flexibility, and it's based upon an extension. By an

extension model, what that means is that we NIST MEP are the federal program managers for the MEP Program. We operate a National Network of non-federal assistance centers that are located in all 50 US states and Puerto Rico. There is one center in every state. And out of every one of our centers, we have multiple service locations. So the companies that are manufacturing product in the United States are within a two hour drive of a point of service from an MEP Center. I mention that it's an extension model. So the primary manufacturing companies that are served by the MEP Centers are small to medium-sized companies as defined by the SBA as fewer than 500 employees at a particular location.

And the reason why the MEP Program was set up to address the technical needs of these companies is that there's basically a market failure that was first identified in the 1980s and persists today with respect to the US economy and manufacturers. When you look at the demographics of manufacturers, 99 percent of the roughly 300,000 manufacturing establishments that exist in the US are in fact small companies. Most of these companies do not have access to the technical expertise and the other resources that they need to be able to ensure that they're implementing the most state-of-the-art technologies into their operations and that they have the resources that they need to be able to compete on a global basis.

So our centers are – we have no supercenters. And we talk about centers, we're not talking about centers of excellence or R&D entities. These are basically centers that solve real problems, typically short-term problems of companies by working with those companies in their factories on a daily basis. Essentially, we're a nationwide consultancy but we're a consultancy that's a public good consultancy that specifically tailors its services to the needs of small companies. We have no supercenters. Our centers very typically leverage partners to a great extent to maximize their service offerings so that any manufacturer anywhere in the country that has any need can have its need be met by an MEP Center.

If you look up in the upper right hand corner, by the numbers. Our MEP Centers receive \$146 million from NIST MEP in fiscal year '20. The federal investment in the program is matched by our MEP Centers. So when our centers actually go into manufacturing companies and conduct projects, typically the projects are conducted on a fee-per-service basis. Now a lot of the services that our centers do provide the companies don't involve any exchange funding. But when our centers are actually in factories conducting

projects that take anywhere from eight hours up to eight weeks or eight months, typically the companies will reimburse our centers for their time.

In addition, I want to make sure that folks are aware that MEP received \$50 million in conjunction with the CARES Act. That funding is now going out to our centers to help our centers be able to provide manufacturers with the services that they now need in the face of drastically reduced markets to basically help companies stay afloat. Also the federal funding that goes out, because it's cost-shared, part of the CARES Act stipulations as well is that cost-share waivers are in fact in place. So MEP Centers for the remainder of FY '20 are in fact offering their services without any need for cost-share. So once again, down in the lower right, we're an extension-based program. We transfer technology and expertise to manufacturers. Next slide.

So when you look at the national landscape of the MEP Program, here's an example of what our centers look like in every state. I should highlight here that when you look at the logos and the names of the centers that exist in the states, in some instances you see the word MEP and in others you don't. Here's the reason for that. These are all the MEP Centers, but our MEP Centers are very closely woven into the economic development fabric of the state in which they operate and very typically there's certain name or brand recognition associated with certain entities within a particular state.

So if you look, for example, over in California, CMTC. Our center in California is the California Manufacturing Technology Consulting Organization. And that is an entity that has been around for a long time, and there is brand recognition associated with that. That is the MEP Center, but we don't require that the MEP be in the name. Simply that when a center operates, it does so with full recognition that it's operating as part of the MEP National Network. Then if you come over and you look, for example, in Georgia, you see that the Georgia MEP in fact called that, Georgia MEP.

One thing that I'll mention about the business structure of our centers, about half of our 51 centers operate as 501(c)(3) nonprofits. Of the remaining half, about two-thirds of them are actually located in parts of universities. When I say parts of universities, they're very typically in either the extension services part of the universities or the economic development aspect of a

university. And of the remaining one-third of that half that are not nonprofits, they're in state government agencies. So if you look in Ohio, for example, our Ohio MEP is part of the Ohio Developing Servicing Agency which is part of the Ohio state government. Next slide.

By the numbers, 51 centers. Out of our 51 centers, we have about 1,400 manufacturing experts. These are people that are engineers, technical manufacturing aspects that are in factories every day around the country. Very typically these are people that have a long amount of manufacturing experience. A lot of them are plant managers. Many of them are small business owners that are now giving back in this public good-based program.

Out of our 51 centers, we also operate about 375 service locations around the country to give us that geographic coverage that I mentioned early on. And then in addition, because none of our centers are supercenters, we work closely with over 2,000 service providers and partners that help us extend the range of the portfolio of services that any and all of our centers can provide. Along the lines of service providers and partners, one of the things that is the most powerful attribute of the MEP National Network is that our centers work together. So if a manufacturer in a particular state has a need that the center in that state can't meet, they'll go to a neighboring center or they'll go to one of our go-to centers that has that expertise resident and that neighboring center or that go-to center will come into the other state and help meet the need of the particular manufacturing client. Next slide.

So our program is based on partnership. The P in MEP stands for Partnership. We work closely with a lot of federal agencies and laboratories including the DOE, including the Department of Defense. A lot of the stuff that we do in cybersecurity right now we do closely with the Department of Defense. With respect to the DOE, one aspect of services that we provide are process optimization, lean manufacturing. You know, when we do lean manufacturing, we very often do it from a lean and clean or a lean and green perspective. A lot of times we work closely with the Industrial Assessment Centers that DOE operates.

You heard me say earlier that our centers are tightly woven in the economic development fabric of states. So very closely, you know, our centers work with state governments. In today's national crisis, our centers work closely with state health departments, with

governor's offices, and are really viewed as that go-to resource within a particular state for access to manufacturers. You heard me say that we're part of the economic development. We work a lot of third party economic development organizations, many of which are international, by the way.

We also do a lot of work with community colleges, technical schools. A lot of the stuff we do involves training and a lot of times we'll refer clients to training courses that are available through community colleges and technical schools. We also do work with universities when there are technical aspects of the work that we do and it makes sense for us to partner with universities. In addition, we do a lot of work with industry leaders, thinktanks, trade associations, and other partners because when we serve the needs of small manufacturers, very typically those needs are as parts of supply chains and it's important for us to have relationships and know what's happening up and down throughout supply chains to best service the needs of manufacturers that are operating in third, fourth, even fifth tiers of supply chains. Next slide.

So by the numbers, this is my one cheerleading slide, folks, but I want you to see how impactful this \$146 million federal program is on a national basis annually. So these are numbers that in fiscal 2019 our MEP National Network across the country, we served over 28,000 US manufacturers. When we conduct projects with those companies and typically we conduct about 9,000 or 10,000 projects annually, we have a third party survey process that we use that's independent that goes to the clients that we serve and asks the clients to report data to us that describes, that details the impact of the services that our centers provide to them.

Based upon the project survey results from 2019 alone, MEP Center services for small manufacturers across the country resulted in almost 115,000 jobs being either created or retained at those companies, \$15.7 billion in new and retained sales for those companies, about \$4.5 billion in total investment by those companies into their businesses, and about \$1.5 billion in cost savings. So folks, when you look at these numbers, for \$146 million federal investment, this is a very impactful national program for the US economy and specifically for the manufacturing sector of our economy. Next slide.

So how do our centers work with clients? There's no cookie cutter approach, but if I break it down into a common theme, basically our centers have contact with companies and that contact can occur through a lot of different mechanisms. It can be web-based marketing. It can be group lunch-and-learns. It can be webcasts. It can be word of mouth referrals. It can be companies one at a time to companies by the hundreds.

After the initial contact, there's typically a discussion that occurs about a topic. Once that discussion occurs, our centers will then do an assessment of a manufacturer that will basically detail what the manufacturer is doing and where they might need to get to. That will identify any potential issues that can lead to a defined project approach, you know, and a means by which gaps can be closed and strategies can be capitalized on. A center will then negotiate with a client whether they actually want to proceed forward and address what the center identifies as opportunities to solve problems or capitalize on new growth opportunities or new business opportunities. And then our centers will execute a project that will involve either center staff, partners, or third-party consultants or some combination of all of those.

And typically MEP Center projects for companies can be as small as a couple of hours or as long as a year depending upon the nature of the technical work that we're doing. And then as I mentioned, we always have follow-up when we go back through an independent third party and ask the manufacturers to tell us about the impacts of the work that we did for them. In the middle there, you see the Net Promoter Score. That's an aggregate number that is used as a representative of if a manufacturer would refer the MEP Center to a friend or family member. Typically a Net Promoter Score of 50 or above is considered very good. An aggregate score of 85 is considered excellent across the National Network. Next slide.

Every year when we ask our clients about the impacts of the work that we do for them, we also ask them what their challenges are. I just put this up here so that you're aware that among the nation's small manufacturers that we serve, cost reduction is an ongoing and ever present issue. These were identified during our 2019 Client Impact Survey. Workforce is always there, clients seeking to grow, manufacturing companies seeking to grow. Product development issues are every present, as are sustainability issues and I'll give you some details about things that we do with respect

to sustainability. Next slide please.

So what do our centers actually do? This is not all-inclusive, but this is representative of the types of technical assistance that we offer to companies. I'll start with sustainability. We've had a longstanding program that works closely with the Department of Energy and with the EPA looking at energy, the environment, and the economy or E3. And what we do as part of that program and in conjunction with our process optimization activities and ISO and quality work that we do, is we help companies identify how they can drive waste out of their manufacturing processes including energy and emissions-related waste. That's a common program across our MEP National Network.

In addition, we do a lot of things relating to cybersecurity, how do companies put in place the protections that they need to protect their online and information-based assets. Lean and the next evolution of lean, Toyota Kata, that's a core competency across the National Network. Workforce development is something that's ever present. You know, how do companies attract and retain and retrain the workforce that they need. Industry 4.0 and advanced manufacturing technology is a very hot topic for us today. How do companies better connect the cyber and physical systems that are part of their manufacturing environments to make their products better, cheaper, and faster and more innovative. We help companies export. We help companies with risk mitigation. We do a lot of work in the food industry, folks, where we help food companies to put in place safe food manufacturing practices.

I also want to highlight that here we address basically every industry within the manufacturing sector whether it's energy products, manufacturers, or chemical manufacturers or food companies, defense contractors, transportation manufacturers, metalworkers, whatever. Literally if it's companies that have NAICS Codes that begin with 31, 32, or 33, they're in scope for the work that we do. One thing also that I want to highlight here is that this broad portfolio has really positioned MEP Centers to be able to respond very well to the current national emergency that we're facing. I'll give you some info in the coming slides about what we're doing there. Next slide.

So what are we doing right now with respect to the national emergency? Folks, our centers are on the frontlines right now. They are responding immediately to help small manufacturers stay

afloat. You know, the markets are shrinking. A lot of companies have excess capacities and capabilities and they want to pitch in and help.

So there's really four main areas where our centers are working to help companies as well as help the overall US national needs with respect to PPE, medical equipment, and supplies. But our response really boils down to connecting resources to needs, working directly with state governments, addressing specific production and technology issues with manufacturing of PPE, medical supplies, and medical devices. And then while we're doing all of this, just basically maintaining base operations and serving all manufacturers whether those companies are responding to the national emergency or not. As I mentioned earlier, we got a slug of \$50 million through CARES Act funding that's helping us do this. Next slide please.

So quickly I want to highlight the four hours. We're connecting resources to needs. I'm not going to read all of these words, but we're doing things associated with supply chain mapping. Where do suppliers exist that can meet critical PPE needs? How can we match resources to needs in medical and food supply chains? What are manufacturers that have capabilities and capacities that are not currently operating in these supply chains but can pivot to do that? How are we connecting with our state government partners and agencies to operate supply chain portals? And a lot of MEP Centers are in fact doing that. And then what are we doing as far as workforce and what are the workforce issues associated with this and then partnering with federal agencies. Next slide.

With respect to working directly with state governments, again MEP Centers are really being positioned right now as being the go-to, central hub within many states for accessing the production and manufacturing capacity and base within states to meet those state-based needs and national needs overall. And one of the things that's cool that we're doing is serving as a connection between the manufacturing industry and state procurement efforts, as well as I mentioned earlier, managing this supply chain, these portals that are linking manufacturers to demand for the present critically needed and support supply items. Next slide.

I want to give you two slides that talk to you about the process that we're using to help make these connections, and they're called MEP supplier scouting. And really what we're doing is serving in a

pivotal connection point where our centers know the capabilities of manufacturers in their state and they're working either with state-based entities or national entities to connect manufacturing capabilities and capacities with national and market needs and do this either on a national scale or a state scale. This helps solve the problems of the critically needed and short supply items, plus it brings business to companies.

The other thing that's very cool about this is we're not just making a connection and walking away, we're making a connection and then we're helping companies go through the process of what is the strategy for how they're gonna pivot and retool their operations and scale up. Next slide.

So supplier scouting, you know, we could do this within a week. We identify a need and we can go out and conduct an analysis on a state level or on a national level and give a high fidelity of results that are companies that can meet needs and we can give answers within one week and that's very quick. And we're proud of the fact that we can do that and the key to our success here is our National Network, not the tools that we're utilizing but the fact that we have this National Network with a presence in every state and this deep and broad understanding of manufacturing capabilities. Next slide.

The next area that we're going to address is we're addressing specific issues with the manufacturer of PPE, medical supplies, and medical devices; and we're helping companies go through the process of certification when they need it. You know, we're helping them enter new markets when they don't understand how to do that. You know, a lot of things, you know, have to do with legal liabilities and we're helping companies go through the process for products that include gloves, space shields, masks, catheters, medical supplies, oxygen masks, nasal cannulas and then different types of devices including beds, infusion pumps, pressure rooms, and the like. And there you see a listing of the different types of devices and supplies that we're focused on right now. Next slide.

And then lastly it's important to mention that it's not just about helping companies respond to the national emergency, but it's also about helping companies continue to stay afloat as their markets are shrinking and they're not ready to pivot into new markets, but how do we work with companies to help them access capital that they need through loans, through the SBA loan programs that are

out there? How do we help them get lines of credit and cash? What are the different approaches that they can take to protect their workforce and their workplace? A lot of things have to do with OSHA requirements and social distancing. How do companies stay afloat and operate in a way that's safe for their employees? We're helping companies go through those processes.

We're helping companies examine and stabilize their own supply chains. How are they engaging companies now – or customers now? They're not doing so in person and shaking hands anymore. What are the online means by which manufacturers can operate supply chains? And then, folks, right now cybersecurity is really taking on a new level of prominence with respect to risk management for manufacturers overall. Next slide. Next slide please.

And folks, that's really it for my overview presentation of MEP, who we are and what we do and how we operate and what we're doing in response to the national crisis. My last message to you, you know, we're a viable national partner. We're a federal-private partnership. We connect with manufacturer needs one at a time and on a national scale and we do that by the hundreds and thousands at a time, both in immediate and direct response to the national emergency as well as perhaps and equally importantly as, in preparation for recovery from the national emergency. There's my contact info. I'm available to answer any questions, either via e-mail, you can give me a call. There's our website and Marissa or Eli, I don't know if we have time for any questions right now, but I'll pause at this point and turn it back over to you, Eli, or you, Marissa.

Eli Levine:

Thanks, Dave. This was really awesome. Every time I think I start to have a handle on all the great stuff you're doing, I sit and listen to a presentation and learn so much more. So just on behalf of all of us, just thank you guys for the important role you're playing now and in general supporting our manufacturing competitiveness.

So it's 1:31, Dave, so maybe I'll ask one question. If anyone has a question, please type it in but maybe I'll see one question we've got and then I know you have to jet off to another meeting. So I appreciate you leaving your contact information. So a question we got is if their company was thinking of reaching out to the MEP Network how an MEP could help them, is it best off reaching out to you directly, Dave, to start thinking about how could work with

MEP or should they reach out and contact their local MEP in their state? What's the best way to work with the MEP Network?

David Stieren: Yeah, that's a great question. NIST MEP, myself, great place to start. Can help a company understand what options are. But the way that we operate as a program is I'm happy to have an initial engagement to understand what the company's needs or opportunities are, but the actual hands-on, technical assistance that will be available to any company anywhere in the country will in fact be through their local Manufacturing Extension Partnership Center. And the way that they can access the contact info for the center is through the website here, www.nist.gov/mep. And if you go on that website and look at the National Network, there's the means by which you can contact your local MEP Center and it'll give you access to every MEP Center in the country there.

Eli Levine: Wonderful. Well, wonderful. Thanks so much, Dave. If they're business is located in more than one state, do you advise that they start with state and see how that MEP Center can help and then maybe look to a connection and then build the conversation with another MEP in the neighboring state?

David Stieren: Yes, absolutely. That is a viable option and that's something that we encounter very frequently. And in a situation like that, it's not a bad idea to start with a connection at NIST MEP. But again, even if it's an instance where there are multiple locations, the actual assistance is gonna occur via the local MEP Centers, plural in this instance. So that reference will ultimately be made regardless of the particular need.

Eli Levine: Fantastic. Well, with that, I'm sure there are other questions, but we do want to be respectful of your time. So thank you for leaving your contact information up there. Thank you again for taking the time to join us and for everything that you guys are doing. I will let you go and return to your other meeting, and we will turn to our next presenter. Thanks again, Dave. So this is –

David Stieren: Thank you.

Eli Levine: This is Venus Welch-White. She serves as the National Rural Energy Program coordinator at USDA's Rural Business Cooperative Service. She has a really cool job in reading about this. In her current role she conducts stakeholder engagement, outreach business strategy and development, policy support and

facilitates collaborations with internal and external partners in agriculture and energy, biofuels, business development, and financial institutions.

She joined USDA as a Presidential Management Fellow which is also how I joined the Department of Energy. So I'm partial to that. She has a BS, bachelor of science in biology, a master's and a doctorate in integrated biosciences from Tuskegee University in Alabama. So Venus, thank you for joining us while juggling all the responsibilities you have and we're looking forward to your presentation.

Venus Welch-White: Great. Thanks, Eli. Thanks for that lovely introduction. So next slide. So again, Venus Welch-White with Rural Development, Rural Business and Cooperative Services. So I'm gonna just kick off that on how I got to know Eli is actually through USDA Department of Energy memorandum of understanding which was a part of the 2018 Farm Bill and was announced last October. So we've been really working diligently and happy to be here. And thank you so much, Eli, for the invitation to participate in the webinar. Next slide please.

I like to always start off with kind of people that don't know USDA. It is a massive organization. It includes over 17 different agencies across seven mission areas, lots of offices and so just in lieu of time, I'm not gonna read this. But we have a major footprint. And so I always try to start high level distance standpoint of how large USDA is and a lot of resources that we are able to offer through a variety of missions and agencies. Next slide please.

So I'm with Rural Development. And again, we're are a mission area that primarily serves to assist rural communities in creating prosperity so they're self-sustaining and economically thriving through our investments that create ladders of opportunity, be it build resilience, and supports the growth of emerging markets. Under the RD umbrella, we actually have three separate agencies, Rural Housing Service, Rural Utilities Service, and again, Rural Cooperative – Rural Business and Cooperative Service which is what I'm a part of. Next slide please

And the fantastic thing about our RD is that we have approximately – don't quote me on this – 40 different funding programs and so we have a lot of different resources across our three sister agencies. For the sake of this particular presentation,

I'm going to primarily highlight six, which is a lot of programs, across our two different funding agencies. I'm going to talk to just briefly about community facilities, our Business and Industry Guarantee Loan Program, Our Intermediary Relending Program, Our Rural Business Development Grant, our Rural Energy for America Program, our Biorefinery, Renewable, Chemical, and Biobased Product Manufacturing, as well as our Biobased Product Program. So this is kind of just a snippet of the types of programs that we offer, Next slide please.

Just to kind of paint, we offer again a multitude of programs that support rural business growth. We have programs that can assist with capital needs, training, education, entrepreneurial skills. I apologize. And our public/private partnership. In FY '19, we invested approximately \$2 billion across our guaranteed loan programs. And again, this is really just to support prosperity.

[Silence from 0:38:35 to 0:38:49]

Eli Levine: As we pause here for a moment, just a reminder to type in your questions and we'll be able to answer them at the end of the webinar.

Venus Welch-White: So sorry about that. So our Biobased Markets is a our BioPreferred program. I'm not sure if anybody's familiar with this. It doesn't necessarily fit into any of our funding programs, but I thought I would take time just to mention it. It is a two-part labeling and procurement program, and it moved from Departmental Management to Rural Development under the 2018 Farm Bill, and it has a renewable chemical provision as well as some consolidated provisions. So if anybody has an questions about that, feel free to reach out and I can provide some additional information on that particular program. Next slide please.

So our 9007 Program, our Rural Energy for America Program is probably one of our flagship programs. It provides grants and guaranteed loan funding through commercial available renewable energy systems as well as energy efficiency improvements for ag producers and rural small businesses. Just for in 2019, we awarded approximately \$250 million to approximately 1400 different types of projects. So we have about \$500 million available in guaranteed loans. I think we've probably used some of that. And we had approximately \$40 million in grants this particular year. Next slide please.

It's important to note that we only do commercially available technology. So from an efficiency perspective, we really consider anything old to new – lighting, heating, cooling, ventilation, fans, automated controls, insulation. So we can do HVAC systems. We can do combined heat and power. So there are a lot of opportunity in the standpoint of the types of program or types of projects that can be done with our REAP funds. As far as our renewable energy system installations, again anything commercial available technology. We are technology agnostic so solar, wind, hydroelectric, digesters, waste to energy project, biomass, geothermal, as well as wave and ocean power. So there's a lot of opportunity in the standpoint of types of energy efficiency and renewable energy system installations that we are able to provide through this particular program. Next slide please.

So for our grant, we are able to do approximately a maximum of 25 percent of our total eligible project cost. The deadline for this particular year ended on March 30; however, we accept applications year round. One thing to note, we have priority for programs – I'm sorry – for applications or projects that the grant request is \$20,000.00 and less. We actually have some set aside funds so those projects, those smaller projects don't compete with the larger projects. And the application deadline, priority deadline at least one of them, is October 30. So if anybody is interested, we can definitely get some information on kind of teeing up what that looks like. Our maximum grant request for our Renewable Energy Systems is \$500,000.00 which would mean a total eligible product cost of \$2 million. And then for our Energy Efficiency Improvements, our maximum grant request is \$250,000.00 which would be a total eligible project cost of \$1 million. So again, that's just kind of highlighting, and it can be anything in between the \$1500.00 all the way up to the \$250,000.00 for Efficiency Improvements and then obviously a minimum of \$2500.00 all the way up to the \$500,000 for the Renewable Energy System installation. Next slide please.

Our Rural Business Development Grant is a program that's designed to provide technical systems and training for rural small businesses. And typically we're talking about a business that has fewer than 50 workers or less than \$1 million in gross revenue. I mention this, and I was really thinking about our partners that do the wastewater treatment facilities this may be an opportunity for trying to do some expansion. Actually even in the manufacturing

side, if you're doing some expansion and you would have a need for maybe looking at the Development Grant. It's a combination grant and loan program. Next slide please.

There are two different types of support. There's an Enterprise Grant that's more training and technical assistance, project planning, business consulting, feasibility studies; and then there's an Opportunity Grant that supports kind of analyze business opportunities. Again, the primary applicant would actually be a nonprofit and would probably need to partner with another entity. So if anybody has any questions on this, we can definitely – I can provide some links, posts. But just kind of wanted to put this out here that we do have some development grants as businesses are trying to expand. Next slide please.

So I'm going to shift into our loan programs. Again, we provide direct loans as well as loan guarantees under various programs within our three agencies. For our loan programs, any guaranteed loan program that the bank is actually our applicant which could be a credit union, farm service agency, an improved lender, community banks, large banks. And so we kind of evaluate the banks. But again, the lender is our applicant. The interest rates and repayment terms are negotiated between the borrower and the lender with our concurrence. And typically eligible projects are located in a rural area defined by the program.

I will mention when we're talking about rural – and I apologize for not mentioning this earlier – it's any population of 50,000 or less based off of the census data. And so we do have a rural determination on our website. I would say one important note is that we have some flexibility in the standpoint of the type of business for ag production. Our REAP program, you do not have to be located in a rural area so all REAP funds are eligible for ag producers. For our business and industry, your program, your project could be located in a rural area but your business doesn't necessarily need to be headquartered in a rural area. So it opens up the breadth a little bit of what's considered applicable. But again, we have some opportunities that kind of expand our eligibility criteria. One of them is for REAP for ag production and the other one is for healthy food for business and industry that are not restricted to rural. Next slide please.

And I'll talk about both of those programs on the guaranteed loan side. So our business and industry might be considered our

flagship loan program within RBS. It is designed to improve, develop, or finance industry and employment as well as economic, environmental, and climate conditions in rural communities. Again, this is not necessarily a loans for substandard or marginal loans. There are programs that are out there that you can have no other commercial lender, but this is not one of them. And so we have competitive rates and those rates are able to be negotiated between the lender and the borrower. Next slide please.

This particular program has probably the largest breadth of our programs within RBS. You are able to use it for purchase of real estate land, buildings, industrial projects, properties. You can actually acquire other businesses, do some expansions, modernizations as well as conversions. You are able to get machinery and equipment, working capital, processing facilities. You're able to generate energy under certain applicable conditions as well as some debt refinancing. So it has a really large breadth of the type uses that are approved.

Again, this particular program, the B&I, is not restricted to small businesses. So any business that is located in a rural area and again the manufacturing facility or other facility does not have to be headquartered in a rural area but the project, so let's say the manufacturing facility would need to be located in a rural area. Next slide please.

So I'll pivot back into our Rural Energy for America Program. So apparently this is the loan side. We have a maximum of \$25 million for our grant. Again, the same eligible purposes – energy efficiency improvements as well as renewable energy system installations, minimum loan amount of \$5,000.00, maximum of \$15 million. Again, we are only able to do 25 percent of the total eligible project costs. Now it's interesting because our guaranteed loan programs, this particular one, can actually be coupled with another guaranteed loan program. So you are able to couple the REAP with business and industry as well as SBA and to help meet that additional 25 percent equity requirement. Next slide please.

Again, this is kind of just a mention. Typically we have a \$10 million standard for our loan amount. However, our maximum loans for our business and industry and again, our REAP, are \$25 million. And then we're actually able to go a little bit higher, \$40 million for our rural cooperative organizations. So if there are any coops on the line, you are probably aware of that. So again, our

loans can be actually combined to maximize the guarantee amounts and reduce the equity requirements. Again, I mentioned the B&I can be coupled with REAP. It can also be coupled with SBA. If there's any from an ag perspective, you can also work with FSA which is the Farm Service Agency. They also have loans. Those can be mirrored together as well. Next slide please.

This is kind of paint the numbers in FY '18. B&I closed 346 loans, obligated about \$1.2 billion. So again, we have an appropriations of \$1.2 billion. So this is the largest program that we have in the standpoint of funding at RBS. Next slide please.

Our Biorefinery, Renewable Chemical, and Biobased Product Manufacturing Assistance Program is a program that supports integrated demonstration units for emerging technologies to full scale commercialization. You can produce an advanced biofuel, a biobased product, or a renewable chemical or any combination thereof. So the maximum guarantee for this is \$250 million dollars.

It's a pretty lengthy process in the standpoint of the application process. It's done in two phases. Phase I is done, you need basically a feasibility study, some marketing materials. You need to have your lender together. We can talk offline if there's somebody that's very interested in this. However, we have two different application cycles for this particular program, April 1 as well as October 1. So if anybody is interested, I can definitely provide some additional details, but it's a pretty good program.

I would say from a manufacturing perspective, you're really talking about more biobased product manufacturing which can also be used as an intermediary. So you don't necessarily have to manufacture said product. You could be manufacturing an intermediary that's going to be used into another process or maybe a biobased plastic or a biobased straw. So you could be using the resin and manufacturing essentially that. So there is a lot of opportunity for this particular program. Next slide please.

We also have an Intermediary Relending Program. Again, I was really thinking for this particular slide about wastewater treatment facilities. Essentially what this program does is provide a low interest loan to local lenders or intermediaries that will relend to businesses to improve economic conditions. And so this could actually be used for both wastewater facilities as well as manufacturing facilities. And so in sake of time, I'm not going to

go through all of this slide. But I do think it's a really good program and it provides some additional funds and access to capital depending on where these particular businesses are located. Next slide please.

Again, this is a little bit more information about the Relending Program, and again, being able to apply for an intermediary. So again, for the sake of time because we're getting pretty close, I'm going to just fly past this. Next slide please.

Community Facilities. So Community Facilities is actually a grant and loan program. I'm gonna only really talk about the guaranteed loan component. It is essentially a community facility that provides essential services to the local community in a rural area. I was really thinking along this line for the wastewater treatment facilities. And so this program has a little bit of a different definition for rural. The guaranteed loan program is for designated places of populations 50,000 or less; however, they use a little bit smaller designation for direct loans and grants which is 20,000 or less. Eligible borrowers include public bodies, community-based nonprofit corporations, as well as federally recognized Tribes.

And it has a wonderful breadth of the types of things that it can fund. So I wanted to mention this because it really provides a very good snapshot from the standpoint of the types of resources that are available through the USDA, but it can be used to purchase, construct, improve essential community facilities, purchase equipment, pay for related project expenses. It does not have a maximum on the guaranteed loan amount either. So it is really a fantastic program. Next slide please.

I also wanted to mention really looking at kind of from the standpoint of leveraging and recognizing what types of resources are available, really looking at leveraging the RBS programs with incentives and tax credits. There's a lot of different types of investment incentives and tax credits that can be used in tandem with our programs. These include but are not limited to opportunity zones, new market tax credits, investment tax credits, carbon capture tax credit, state energy programs, and other tax credits as well as secondary market sales and revenue.

And so I'm not going to go through all of these, but I think most people are aware that there has been opportunity zones that will reduce your tax equity or the no tax on the capital gains. And so

I'm not an expert in opportunity zones, but I know that depending on what your project is located at, that might be of some – a creative mechanism to really looking at the increasing or making the business case. So there's a lot of different things that can be done from a tax perspective or leveraging additional resources not also within your estate. So in addition, you're able to sell our guarantees on the secondary market, not you but the lender is. So that might also be a selling point when you're essentially talking to lenders on why they should participate in USDA guaranteed loans program. Next slide please.

So qualified opportunity zones, this is just a map. And I will make mention that 40 percent of opportunity zones are located in rural areas so it's kind of worthwhile to kind of take a look at. A picture's worth a thousand words. So I always like to throw the map out there to say, here, here's what's potentially available. Next slide please.

So I'm going to just give a couple very quick examples and success stories. We were able to do a rural electric cooperative utilizing \$13,000.00 REAP grant for efficiency of glass roof, radiant heat, fans, vents, and some computerized controls resulting in 66 percent reduction in energy costs. Next slide please.

We have a guaranteed loan that's REAP that Merrill Manufacturing was able to utilize the purchase and installation of energy efficient heating and cooling system and were able to obtain a reduction of their energy costs. Next slide please.

And one Business & Industry loan guarantee. That was a business in Ohio. They were able to purchase a high pass air compressor system to improve the efficiency of their drillers operation, a little over \$2 million in total project cost. The lender is Byline Bank. Next slide please.

So here is – any additional information, feel free to check us out at our website as well as if you're interested in looking at our USDA Investment Map and you're able to search by location as well as different types of programs from the efficiency perspective. So we have lots of – and you're able also look at maybe if you're interested in incorporating solar into your operation, who has been doing solar in your area. So it's a really fantastic resource. Here's my contact information.

I would also say and I didn't mention this before, but I think it's important, kind of piggy-backing off of the last presenter, if you're interested our first step for Rural Development, we have 47 different state offices. So oftentimes your state Rural Development Office is your first step. And so you are able to access your state resources through this site too, but it's always a good step. If you have questions or need some additional information, feel free to contact me and we can walk you through that step. So that's all I have, Eli.

Eli Levine:

Wow, Venus, that was really great. Every time I start to feel like, you know, the Department of Energy is your one-stop shop for helping you with your energy management needs, a webinar like this comes around and I feel like we are just one small piece of the pie of how the federal government is looking to help people. So I have a lot of homework to go back and really familiarize myself with a lot of these resources. So again, folks, we have maybe three minutes or so until we should wrap up here. But if folks have questions, please submit them.

One question that I saw come in was that you may have addressed just now concerned if I'm trying to figure out which of these programs is right for me, is there a central place where I can compare and contrast them or understand or is it best off for me just to call my USDA state energy office to talk through with someone and then describe my business and understand how one of these might make sense for me?

Venus Welch-White:

So that's a loaded question. Yes, there are resources that we kind of go through on our website for businesses, more that are energy focused. You can also reach out to your state energy coordinator and kind of talk to them. You can also reach out to me and kind of walk them through your state, where you're located, what you're interested in doing. Sometimes it's really easy when you have somebody that understands kind of the 30,000 foot perspective. And it's hard in the federal government, and I don't mean that in a negative way, but there's a lot of different resources and we're here to support. So we're happy to help. So I would say it would be helpful – what state does this person – well, they can reach out to me and tell me what state they're in and we could kind of go from there. So but again, feel free to reach out to your state resources. They're often the first step. So whatever you're feeling comfortable with.

Eli Levine: Great. And one last question, Venus, before we have to let you go. There were a few of the programs or at least one of the programs that I saw that where you specified the application dates. There was an April 1 application date and then a later one. For the other programs if you didn't specify, should we just assume it's a rolling application period that funds – you know, it's available till funds expire?

Venus Welch-White: Yes, I apologize. So our guaranteed loan programs are all rolling application deadlines. We accept them year round. We actually have a competition on a monthly basis. So it's something that's perpetually cycling all the time. We'll also not that if anyone is interested in the guaranteed loan component, that doesn't necessarily – because it's a lender-driven program, we are happy to hop on the phone with your and talk to a lender, a potential lender on what that looks like. We often say that it's probably easier to work with someone who you're already working with. However, we also have additional lenders that we do business with. We can't necessarily promote any particular bank; however, we're happy to kind of help you kind of steer and navigate that particular process, especially if they're new to the guaranteed loan world.

Eli Levine: Fantastic. That's great, Venus. Thanks so much. Well, we have your contact information up there. The slides will be available for everyone to go back. And we've recorded this webinar. So if there's anything you missed or wanted to review again, we'll be sharing that with everyone on our website.

So Marissa, are there any next slides? In the past we have. I should have checked. In case not, I won't – yes, so this is our Better Building Solutions Center. This is a reminder on how to use it and to leverage all of the resources that we have out there. There's the little mouse is doing this for me which is really great. And so should you want anything from our resources, please we have all these wonderful solutions and technical resources that we hope you will take advantage of. So please do that. Otherwise, next slide.

We look forward to seeing you next week where we roll up our sleeves and dive deep into the wonderful world of compressed air systems. So thank you for joining us today. Please register for the Summit. You have all of our contact information from myself, Venus, Dave. As well as the team who run the webinar series, you know, Marissa and Nina, thank you for your continued help and everyone enjoy your Thursday. Stay safe out there.