

Maddy Salzman: Hello, folks. Welcome. Thanks for being on time. See folks are entering the room, so we will just get started in a minute or two so we give folks' computers a moment to actually get situated in the virtual room and get connected to audio. Thanks for joining. We're excited to have you today. I'm very impressed with people that can be in the room right on the dot at the time. Good work. We'll just get started in about one minute. All right. So thank you, everybody, and welcome to the webinar. We have a jam packed agenda today, so we will jump right into things. So thank you so much for not only joining, but joining on time this morning. Really appreciate all of you taking time out of your day in the new year.

This presentation is called Classroom to Career: Advancement in Energy Efficiency Jobs. My name is Maddy Salzman. I have been working with the Better Buildings program for about seven years now, including most recently managing the Better Buildings Workforce Accelerator, which today's presenters all represent. Before we jump into everything I just want to go over a few housekeeping items. So please note that today's webinar will be recorded and archived on the Better Buildings Solution Center. We will follow up when today's recording and slides are made available. As an attendee you are in listen only mode, meaning that your microphone is muted. If you experience any audio or visual issues throughout the webinar, please send a message in the chat located in the bottom of your Zoom panel, or if you already have it open should be on the right-hand side. And I think we can jump into things. Slide. Great.

So as I mentioned, my name's Maddy Salzman. I manage the Better Buildings Workforce Accelerator. I'm also an advisor for workforce topics to the Office of Energy Efficiency and Renewable Energy. I'm spending a lot of time thinking these days about how to make sure there's lots of clean energy jobs that are hiring highly skilled folks to do the work that needs to be done in this space, so really excited to not only discuss all these topics with all of you but get to dive in with our panelists. We can go to the next slide. So first I will just do a quick introduction of DOE's work in this space, including introducing the Workforce Accelerator, and then we will hear from our presenters, first Erick Shambarger from City of Milwaukee, then Roger Ebbage from Lane Community College, and then last but not least Laure-Jeanne Davignon from the Interstate Renewable Energy Council. And we will have time for audience Q&A at the end, so we will try to rush through things so that there's plenty of time for discussion. Next slide.

Okay, so I wanted to just give a quick introduction to some of the ways that we're thinking about things at DOE, and be clear that I'm super excited by the things that are happening in the Accelerator, but it's also one element of lots of things that are happening at DOE these days. So overall the Office of Energy Efficiency and Renewable Energy is, has a mission to accelerate the research, development, demonstration, and deployment of technologies and solutions for an equitable transition to net-zero greenhouse gas emissions economy-wide by 2050, which is a big, audacious goal, but I think it's super important for all of the reasons of health and energy affordability and climate and justice. So I think there's tons of good reason to put folks to work on these efforts, and our clean energy workforce vision is really to make sure that we have a workforce that is of, that's nationally representative and of sufficient size, skill, and compensation in order to carry out this equitable transition and, you know, really acknowledging that this transition doesn't happen just because we say it happens. It's helpful to say that it should happen, but we also need to put people to work to do it. And so our goals are to increase awareness of these opportunities, support strong skills development, streamline pathways, and then increase growth and stability of the clean energy sector. Next slide.

So as I mentioned, there's obviously the clean energy workforce overall that kind of works on a very wide array of technologies. Today we're talking mostly about the green buildings workforce. So who are we talking about with that? And so we think about folks that are involved as part of their job elements of green building technology and products development, like research and manufacturing; design, in the case of buildings, often architecture and engineering; deployment, which includes construction and operations roles; and then our kind of catch-all bucket of diffusion, which includes folks in services and programs that really make the deployment of these technologies possible. According to the US Energy and Employment Report, there's over 2.3 million workers across these industries in efficiency alone, so we know that there's millions of people already out there doing this stuff, and we want to be making sure that they're fully prepared for the work that's coming down the pipeline, and also bringing new people into this workforce that maybe have not already been a part of it. Next slide.

So I don't want to spend too much time here, but I'll just say that our overall goal is to ensure that there are career pathways for a diverse and qualified building efficiency workforce that enables high performance building, and we want to address kind of the key barriers across the entire pipeline of the workforce from early

career exposure and education to apprenticeship and on-the-job training, and then mid and late-career workers, and address the issues like low or negative perception, confusing pathways, poor quality installation, or lacking market stability by helping to build interest, streamline paths, improve skills, and then support demand both for the workers and for the technologies themselves. Next slide.

So as I've already mentioned, I manage the Better Buildings Workforce Accelerator which represents a partnership of over 40 national stakeholders that have agreed to set and meet goals that achieve some of these areas, so to increase interest and awareness of building efficiency careers, simplify and streamline pathways from education and apprenticeship training to careers, and then augment existing education, training, and apprenticeship programs to fill knowledge gaps and improve skill competencies. So we work with partners that have established these goals in coordination with us, and provide technical assistance to help them achieve these goals. Next slide.

So technical assistance from DOE can look like quarterly calls to share updates on progress, workshops and other technical assistance opportunities, and then amplification of progress and stories of success so that we can get good word out there, like hopefully through today's webinar. Next slide.

So we are a bit over one year into the Better Buildings Workforce Accelerator since we launched, and some of the things that our partners have established or accomplished already have been launching two new workforce programs that did not previously exist a year ago, offered over 95 trainings which reached over 21,000 participants, which is wild. I think being virtual maybe helped increase that number a little bit. And reach over 400,000 people with emails and information about green building careers in general. So it's been awesome working with all of our partners towards these cumulative milestones. Next slide.

And then just as I highlight a special congratulations to, you know, this is an array of some of the partners that we've been working with that not only have made a significant progress toward their goals, but also have been including DOE in that process either through technical assistance, sharing data with us, and really showcasing the work that they're doing to help drive this market forward. So virtual round of applause for the folks that have been working really hard from all of our organizations, and especially these ones. Next slide.

But I did just want to kind of, as I had mentioned, say that the Better Buildings Workforce Accelerator is our partnerships program, but we also have a lot of analysis for strategy development and R&D funding opportunities going on, among other things. We are researching and putting out publications on workforce and market trends. We're working on engagement with labor organizations who are members of the Accelerator, but even ones that are not, to better understand needs, concerns, and successes. We've previously put out over \$15 million in funded awards to develop and deploy education and training, and we're continuing to work on our strategy. And so we're always interested to hear from folks on the line today and maybe elsewhere on how we can be doing more and better to be supporting the demand for market, for skilled labor and family-sustaining wages in the energy efficiency sector. Next slide.

So I think with that we are jumping over to Slido. So Slido is going to be our main tool for asking questions of the presenters and getting to engage, so if you don't mind we'd love for you to either pull up Slido if you managed to already have it downloaded as an app. That's how I'm gonna be on, on my phone, but you can go to www.slido.com and then you can enter the event code #DOE. So if you would like to ask our panelists questions, please submit them anytime throughout the presentation. We'll be answering questions at the end of the session. You can also click the thumbs up icon for questions that you like, which will result in the most popular questions moving to the top of the queue, and that's how we'll kind of make selections of questions you hear from folks on.

So to get started we will, there should be a live poll if you've entered #DOE where we've asked you to say what is you or your organization's relationship with the green buildings workforce. Select all that apply. I might enter it, too. I would say I'm mostly a program manager or policy maker and then research and analysis, so I will enter it. Seeing some replies in here, which is great. Looks like our number, our most common group right now is trainers and educators with a bit over a third. I would say I try to make responses that cover most things, but then clearly I'm not because we got 30 percent of people saying "other," so I don't know exactly how I should get this information but I'd love to know what the "other" people are up to. Maybe just interested in the space and not currently engaged as part of their work. But happy to have you on nonetheless. And then looks like the smallest group is professional associations or labor organizations, but still with about almost ten percent of participants. Okay. I can see that we have 94 responses,

so whenever folks are able to get in here you can always answer this poll and we can maybe check it later if something's changed dramatically, but for now we will move forward. Okay.

So with that, we will jump into our presentations for today. So up first is Erick Shambarger – I'll give his intro in just a moment – from the City of Milwaukee. We also have Roger Ebbage from Lane Community College, and then Laure-Jeanne Davignon from the Interstate Renewable Energy Council. So, like I said, up first is Erick, and we can go to his speaker slide. He is the director of environmental sustainability for the City of Milwaukee, where he leads the Environmental Collaboration Office, ECO, including the Milwaukee Energy Efficiency Program, the Milwaukee Better Buildings Challenge, the Water Centric City initiative, the HOME GR/OWN program and green infrastructure work. Erick, I don't know how you do all of these things, but I know many of us across the Better Buildings team work with you, so welcome and excited for your presentation.

Erick Shambarger: All right. Thanks so much, Maddy. It's exciting to be here. I kind of consider myself an adjunct member of DOE because your work has been so important to shaping what we're doing at the local level here in the City of Milwaukee. Today I'm here to talk about what we're thinking about as our Green Jobs Accelerator, building from the work of the Department of Energy's Buildings Workforce Accelerator, and how that ties into our City-County Task Force on Climate and Economic Equity and our forthcoming Climate and Equity Plan. Next slide.

So the City of Milwaukee is separate from the County of Milwaukee, but the two local governments, we've teamed up and we are trying to come up with our climate plan with a real strong emphasis on racial equity, because we have the twin challenges of climate change plus longstanding racial disparities in our metropolitan area that we want to address. So as we create new green jobs, we want to be intentional about trying to make sure we are being inclusive of the many workers that we have available in the City of Milwaukee. We've got a lot of different member organizations listed there. I won't go through them all, but it's just been a really excellent effort, I think, that's been informed again by the work that we've been doing with DOE. Next slide.

So we have two goals. As I mentioned, we have the twin goals of climate change, but also this racial and economic disparity goals that we're trying to address, so we're trying to cut community carbon emissions or greenhouse gas emissions 45 percent by 2030

and trying to be net zero by 2050. That's consistent with what many progressive cities have done around the country. And then again trying to move the needle on racial equity, and so we have some data that we look at and it shows that the average or the median household income for white families in the City of Milwaukee is about 57,000. For Black families it's about 31,000. And unfortunately that disparity has grown over time, and so when we were thinking about, well, what benchmarks should we set, we came up with this number of trying to do green jobs that start around \$40,000 a year and focus that recruitment on people of color so that we can try to, again, close this gap. And I think that's consistent with some of the federal goals around environmental justice that have been laid out. Next slide.

So when we have been thinking about this locally, we were thinking about energy efficiency jobs in the building sector, but we're thinking about it more broadly in terms of green infrastructure and solar and electric vehicles and all of the things that go into the climate economy. Fortunately I think many of the lessons that we're learning as part of the building efficiency workforce can be applied, and so we have to have this, you know, I think a team that goes beyond city government into the nonprofit sector, into with our university and technical college partners and with our unions. So lots of partners need to be brought to the table on this. We've got to leverage again this long-term partnership with Department of Energy. So I think we're seeing that these are quality jobs. I want to get people excited about these quality jobs, and then make sure that we are really again being intentional about diversity. Next slide.

So I think I just, it's been very helpful working with DOE to help organize our thinking, I think, around what the Accelerator is and how it can be applied locally. So we have the three kind of prongs to the approach that Maddy outlined, building interest, streamlining pathways, and improving skills, and I would like to go beyond building interest and use the word "excitement." Really want to build excitement among young people for these industries. I think I've seen excitement for people that want to address climate change jobs, and now the question is how do we educate people that doing building efficiency is a climate change job, and getting them into those pathways. Streamlining the pathways, I think there are some great tools that have been developed at the national level through this partnership, and we have to figure out how we tie local training providers to those pathways. And then we've got to improve skills in certain situations. Next slide, please.

So again we had a lot of local partners, and I want to give credit to Employ Milwaukee, which is our main workforce agencies. I'm a sustainability guy. I know a lot of the technical stuff with regard to climate change, but I need partners that know the workforce space. So we have great partners here. Again, Employ Milwaukee is our workforce agency. We have the unions on board. We're working with some of the local nonprofits, and then our technical colleges and university systems as well. Next slide.

So this data was provided by our, again, Employ Milwaukee, and I think it tells two different stories here. On the one hand, we have a number of green job fields like electricians that pay very well, that have pretty well-defined pathways through apprenticeships and things like that, but it's overwhelmingly male and very white and there's an opportunity to diversity many of those trades, electricians. Similar issues in the other trades that you see there. So again those have fairly decent training pathways. I think one area that we need to up our game is on the bottom there with insulation workers where, at least in terms of the data source that we were pulling, they've listed it as no formal educational credential. It has very high turnover rate and it doesn't pay very well. And so that is an area where we think we need to bring better training to Milwaukee, whether it's BPI, not just for the energy auditors but for the workers themselves. So we think there's an opportunity to both raise wages, but requiring more training, and then we hope to have better quality outcomes in our weatherization programs as well there. And I should say we are doing a lot of work locally to try to sync up energy efficiency work in lower-income homes with lead abatement. There is a lot of state and federal money going into both lead abatement and energy efficiency, and again the types of issues around the workforce are very similar. Next slide.

Again, we want to apply those national maps that have been developed. These have been excellent and have been very informative as we work with our local stakeholders about what are the different types of green jobs. Because it can be very overwhelming with the different levels and types, we are trying to focus on entry level jobs. And electricians are one of the big ones that we are very focused on because we need to upgrade our streetlight, electric vehicle charging, energy efficiency retrofits in buildings, so we see lots and lots of opportunity to grow the field of electricians. HVAC and building controls is another one that we are very focused on because of our work in the Better Buildings Challenge, and again I mentioned lead abatement. One of the other ones that we are excited about is we are also partnering with the Department of Energy through their Advanced Building

Construction Collaborative, and thinking about the workers that would go into factories to support factory-built housing. That is another really big opportunity and we utilized technical assistance through the National Renewable Energy Lab and got hooked up with a professor from UNL who gave us a really good plan for creating workforce development in factory-built housing. Next slide.

Again, we want to support the training providers that we know are already in place. So I think a lot of times government has a tendency to try to create new programs all the time, and in this case we want to figure out why people aren't, why more people aren't enrolled in the pathways that are already existing. And so we want to try to – we've identified that many of the pathways we have, unions like the IBEW, MATC is our local technical college and they have an outstanding automated building systems program, we have the university system, and then we have the Midwest Renewable Energy Association that does training in solar energy. So we want to figure out a way to get people to know about these existing programs, connect them to their interest in climate change, and then support them through there. So we've identified a lot of the different barriers people have to joining these programs, particularly in people of color who may have transportation barriers or may not just be able to take off the time to go to training. They might have, not have the savings accounts to be able to take time out of the workforce. We need to figure out ways to support people while they're in training. Next slide.

So the question is how do we get more people of color employed in these family-supporting green jobs if we have training already in place. Next slide. So we came up with this kind of seven-point plan for our Green Job Accelerator. Again, you're trying to follow Department of Energy framework as best we can with clarifying pathways. That means we need great websites. We need recruiters out there. This ties into building excitement. Getting into the high schools. I saw a question in the chat about what are we doing in high schools. We think it's very important to talk to the young people at the high school level about these before they get disconnected from the workforce, so we're talking about a mobile green jobs lab to be able to, again, go to different places, recruitment centers, and get people excited about the jobs and the pathways. With regard to building skills, we want to get people into the existing training programs, but we do plan to upskill our weatherization workforce, and to that end the city allocated three million from its allocation of the American Rescue Plan to support energy efficiency and lead abatement training.

We want to create traditional jobs and career ladders. One of the challenges we've seen is many of the green jobs are, have a very high skill level, especially in HVAC, so we think we can start people in landscaping in some of the nonprofit partners that we have there, and then try to have them prove their kind of soft skills and the work ethic over the summer months, and then in the winter when it's hard to do landscaping we can get them into training programs. And a big area we see there is the need to get people drivers licenses, including commercial drivers licenses. That can be a big pathway to get people up the ladder. And then the last couple of things I want to highlight is the connection not only from training programs, but then to get them employed, and so we need to get MOUs with our employers, and a way we can kind of facilitate that is have community benefits agreements on public jobs. So when the city is, we're making this big federal investment in infrastructure and energy efficiency, we can require through our contracts that the employers are pulling people from these training programs, or at least that they will entertain them, entertain people coming out of them and show them the opportunities that are there so that they're aware of it. And then lastly we want to support Black and brown-owned business development in the community so it's not just about workers but it's about a contractor base that's also diverse. Next slide.

So again with our plan we, this all comes back to the climate action. It comes back to our mutual obligation to ensure an equitable workforce, and so we're just really excited to continue to move forward with the Department of Energy, our partners nationally, and our partners locally to kind of support union-owned workforce but one that is diverse, growing, and helps lead to family-supporting jobs. So thank you, and I look forward to questions at the end.

Maddy Salzman:

Awesome. Thank you so much, Erick, and so, I mean so many good ideas and important elements there, and I just wanted to highlight the City of Milwaukee's commitment to partnerships between organizations. It's something we've been trying to focus on at DOE as well, that there isn't just one organization but trying to get cities and states and labor organizations and workforce development organizations, youth corps, all these different groups working together because they all kind of have a piece of the puzzle to bring to the table, so thank you. Up next we have Roger Ebbage. Roger has been the energy and water efficiency program director at Lane Community College in Eugene, Oregon since 1992, and has made the program a national model for energy and

water technician education. So, Roger, I will turn it over to you for your presentation about the Building Energy Controls Apprenticeship Program. Thanks.

Roger Ebbage:

Thank you, Maddy, and welcome all 250 of you. Wow, what a great turnout this is. So as Maddy said, I'm at Lane Community College in Eugene, Oregon. Have been there since '92. Long time. And we seem to be always in the creating business. I mean we've had our foundation program of commercial building energy efficiency since '92, and we keep going in and out of what the employment trends are in terms of adding options to our program. We recently changed our foundation program from just straight commercial building energy efficiency to building energy and controls systems, and on top of that through our award and our involvement with the Accelerator, the DOE Accelerator, we have created an apprenticeship program. Now, you might think apprenticeship, well, wait a minute. That's got to be something to do with electrical or plumbing, and if you saw Erick's list of jobs that he's talking about for the City of Milwaukee the list was electrical, plumbing, HVAC and controls, et cetera. Some of them had apprenticeship connected to it, and so that's what we're trying to do is get on that list, get on Erick's list and everybody else's list. So I'm gonna talk about our Building Energy and Controls Apprenticeship Program for a few minutes this morning. Next slide, please.

So what is it and how did it come to be? Not long ago, maybe a year and a half ago, maybe two years ago, the University of Oregon came to me and said, "So we – " and University of Oregon is in my hometown. "So we have seen this RFP come from the DOE – lot of acronyms – and we think we would like to apply to it, and would you be interested in joining us?" And so I read the RFP and said, "Yeah, this is a great opportunity for us to do something that I've been thinking about for a while, and the deal is that we would like to lead the proposal," and the university said, "Sure. No sweat. Please do." And so we submitted a proposal to create an apprenticeship program. Now, why on earth would we want an apprenticeship program if we are already doing a two-year degree in commercial building energy efficiency and controls? The reason for that is – I'll go back to Erick's list. The reason for that is the list that new individuals coming into our industry don't really get to see energy efficiency. Let me put it in a different way. The people that are coming into the workforce don't usually get to see the fact that there is an energy efficiency side to this, energy auditing, commissioning, et cetera. That's all part of what we do, but nobody knows about it. We're kind of behind a curtain.

And being behind the curtain doesn't give us great exposure to students getting ready to leave high school, veterans coming directly from the military, unemployed, underemployed. When they're offered opportunities or situations where they can kind of test drive an area or get involved in an area, either through a degree program or an apprenticeship, we're not on that list. Our degree program is, but our apprenticeship program is not on that list. That's why we put it up. That's why we decided that this was a good idea. So what is BECA and what are the components? Well, in an apprenticeship program, in a very traditional apprenticeship program, we have two, possibly three components. We have two components if it's a certification, three components if it is a license, and I'll explain. The components that are very standard in an apprenticeship program are related training and on-the-job training, so for our BECA the related training is our two-year degree program. For our on-the-job training it's 2,000 hours of paid on-the-job training with a training agent.

Now, a training agent is somebody that works for an organization that has the ability to work with an apprentice to lead them through some competency-based goals, and so the competency-based goals are things that we would find an energy manager doing, a controls operator doing, a controls designer doing, somebody that's working on that side of the house. So those are our absolutes. We have to have those. An apprentice has to come through the program and do those. And also there is a couple of certifications that are out in the field. Obviously everybody should know about the Association of Energy Engineers Certified Energy Managers program – sorry, certification – and that is one of our objectives. As soon as students get out, they can sit for – get out of the apprenticeship program they can sit for the Certified Energy Manager In Training program, because a two-year degree and a couple of thousand hours don't qualify them for a CEM, the Certified Energy Manager certification, but they do qualify them for the Certified Energy Manager In Training certificate. And once they satisfy the number of hours that are required to become a CEM, then they're there. Then they can get that. So those are our components. Next slide, please.

One thing that's important to note, and I don't think I mentioned this although it was on the previous slide, is that this, our related training, our two-year degree program is fully online, 100 percent online. Eugene is – Lane Community College is in Eugene, very close to the West Coast ocean, and so I can't expect the rest of the country to come here and do two years of related training. That's

ridiculous. So we have our entire program online. It's a career technical program. That means there are hands-on components to the work that students do through their classes, and we figured out a way to accomplish that hands-on work in a class. And then of course halfway through the program they are able to go out and start their 2,000 hours of work, and that gets them, that kind of on-the-job training is just really superior to anything that we've done or seen. So students enrolled in the program, they start their degree work after the first year, as I said. In between a first and second of the program they can start looking for work.

The work doesn't have to be 2,000 straight hours. It's like any other apprenticeship program where they can do ten hours a week, 15, 20 hours a week, whatever their time and their training agent can handle. So if a student is going to school full time and they only want to do ten hours a week, that's very, very possible. Now, why do we wait for the summer between a first and second year? We do that very specifically and intentionally because we want our students to be able to be productive as soon as they hit the ground with a training agent. We don't want there to be any startup time. I mean of course there's office familiarity, there's equipment familiarity, et cetera. But we want students to be able to be productive and we want them to be able to go to work for somebody who is a training agent and be productive, whether it's just filling in spreadsheets or not. They will know what they're filling in if they are tasked to doing spreadsheets. We want them to be able to understand heat load calculations, building shells. We want them to know what lighting is all about, and all of those are first-year courses in our program. The second year are follow up courses. We have a couple of HVAC courses in the second year. We do heavy controls in the second year. So it's a pretty well thought out protocol. May I have the next slide, please?

So if you have any questions – yeah, hi, Laure-Jeanne. If you have any questions, please don't hesitate to ask. We will be on the back side of this presentation with contact information. I will say that we have just recently received a new URL for our program. It will be becajobs.org. The site is under construction, and please do not hesitate to visit us frequently. Thank you.

Maddy Salzman: Fantastic. Thank you, Roger. I think Roger brings up another important element of what DOE's been really interested to help support, and that's registered apprenticeship pathways for people in these careers. And sometimes there's existing registered apprenticeship programs that are really important to augment and support, and sometimes it's kind of a career space that doesn't have

existing registered apprenticeship and trying to make sure that there are pathways. But, Roger, I love the commitment to on-the-job learning and making sure that students get to have the foundational knowledge they need, but then get into the field as quickly as possible so that, one, they can start making money. I think there's a massive equity component there. But then, two, just really get the experience that's needed to become a professional in this space, so thanks so much. And, of course, last but not least for our presentations today we have Laure-Jeanne Davignon, who serves as the vice president for the Interstate Renewable Energy Council managing oversight and strategic direction for a national workforce program focused on scaling a diverse and clean energy workforce. So with that, I will turn it over to L.J.

L.J. Davignon:

Thanks, Maddy, and really pleased to be with everyone today, and excellent information that I think is synergistic with what I'm about to share from Roger and Erick, so thanks for that. And if we could bring up my first slide, please, that would be great. So as Maddy said I'm with IREC, which is the Interstate Renewable Energy Council, although we do operate in numerous clean energy and energy efficiency sectors. We are a national nonprofit working to remove barriers to the deployment of clean energy for all Americans. We do this through state regulatory reform, local initiatives such as our SolSmart program, which helps communities across the Midwest, including Milwaukee, accelerate their solar development, and workforce development. Next slide, please.

You can see here IREC's areas of workforce engagement that really span the spectrum from training to talent pipeline development. We'll take some time today to take a deeper dive on the items in bold, so the Clean Energy Workforce Alliance, the EMPOWERED project, and IREC's career maps. Next slide, please.

So as Maddy mentioned, and if you're on this webinar it's likely 'cause you are aware, we face an unprecedented need for workforce development in our sector. Certainly we're all aware of new and potential drivers at the federal level, but even before the current federal administration demand for workers in our sector was increasing year over year until the pandemic hit, driven by state and local policies and programs. So, again, going back to the City of Milwaukee, certainly their activity is a driver of workforce needs in that area. Next slide, please.

So because of this need, enter the – and, I'm sorry, I'm skipping

slides here. And if you're on this webinar, you likely know good workforce development doesn't happen by accident. I see we have a really good, strong representation of training providers here. I know you're all nodding your heads. This is especially true when you're rapidly scaling, and even more so when your intention is to be inclusive of communities that have not historically benefited from the green jobs transition. Our collective effort has resulted in some really great training, credentials, and other resources, some of which we've talked about today, but my organization and our partners have really identified a need to kind of connect the dots and address clean energy workforce development more holistically, focusing on every aspect of the workforce development landscape from new learner and worker recruitment through employee, employer development and retention of employees. So enter the National Clean Energy Workforce Alliance. Next slide, please.

So what is the Alliance? It's an effort IREC is launching to make it easier for clean energy employers to find, develop, and retain skilled workers and increase the diversity of all clean energy sectors from buildings and energy efficiency to renewables and beyond. In partnership with the National Council on Workforce Education, which is an affiliated organization to the American Association of Community Colleges with about 400 plus community college members, this unique project unites clean energy workforce stakeholders from across sectors and technologies to address shared challenges. Our goal is really to eliminate some wasteful duplication of effort by identifying and scaling the best practices and resources already in place, and a good example of some of the curriculum that we've already developed that's really good, and we just need to get it to more people. And we also want to chart a path forward to address remaining workforce gaps and challenges. I think a lot of us have done a really good job articulating the challenges and really want to work with cross sector on those solutions. The Alliance's outcomes and findings will be proactively promoted, including targeted outreach to funders and program designers. It's really designed to augment the efforts of groups such as the Better Buildings Workforce Accelerator that's convening this event today and serve as a connected entity between workforce development efforts across clean energy sectors. Next slide, please.

So the Alliance is really about knocking down silos and kind of connecting the dots to unite all stakeholders engaged in workforce development. So I already mentioned training and educating folks. Certainly we've got to start by asking employers what they need and what they perceive as gaps and what they would put into use if

offered. We want to ensure that all these solutions are tailored to employer and worker needs. Certainly we've got to have the funders and program designers involved because we want them to be able to fine tune their designs and funding opportunities to be more impactful, and then we have this more nebulous but incredibly important cohort that we're looking to target down at the community level where we know workforce development really happens. We can help at the national level, but these relationships and the work happens in our communities, and we really want to reach and empower the CBOs, energy justice organizations, community action programs, the DOL workforce system, and all of those who are working on connecting community members to training and jobs on the ground. Next slide, please.

So here are some of the outcomes, some of which I've mentioned. We really see a value to the community of practice itself, so the Alliance itself is a deliverable and part of the effort. I will say since I've started this effort with IREC, I have heard from new partners, old partners, folks we haven't heard from in a decade, so the word is getting out. People are really interested in working on these issues together, which is very encouraging. So we think that in and of itself has value. Our collective knowledge and abilities are much greater than any of us individually. We will write up our findings late this year in what we're calling the National Clean Energy Workforce Plan. So we will promulgate examples of successful programs and best practices while digging deep into some of the gaps in areas that the Alliance identifies as most critical, and detailing some recommended solutions, again, for funders, program designers, and nonprofits like IREC to kind of bite off and start the work through partnerships or other methodologies. And then I mentioned we do want certainly stakeholders who will directly do the work and also those funding and supporting them to be in the loop so all this collective knowledge and information can result in tangible outcomes with the projects and work that we do on the ground in communities across the US. So next slide.

The most important part. How can you participate? Please sign up for the Alliance. We have a link I can put in the chat, and also will be in the materials that you receive after this webinar. We do have our first convening January 31st at 2:00 Eastern. This convening is focused on clean energy employers. All are invited to attend, but the agenda and the questions that we're asking participants to engage with really are focused on the employer experience. And don't worry if you're a training provider, which I know many of you are. Feel free to listen in or invite your employer partners to attend January 31st, and again I have a registration link we can

drop in the chat and will be available to you after this session. But your turn to give training provider specific feedback will be March 3rd at 2:00 Eastern. We are launching that invite and registration next week, so look for that. And if you want to receive it directly in your inbox, make sure you sign up for the Alliance. And then I know there were a lot of the folks in the "other" category earlier when we did the Slido. I certainly put "other." We are a nonprofit. Certainly we conduct training and design training, but IREC's workforce activities really go beyond that. I know many of you are in the same boat trying to approach holistic workforce development either in your community, region, or nationally, and really want this to be a resource for you. So even if you don't have the capacity to directly engage, want to invite you to stay tuned and benefit from the solutions that we're recommending.

So with that, I'm gonna go to the next slide and cover a couple other resources and programs that IREC has that may be of interest to this convening, certainly to the training providers and others. The Green Buildings Career Map that Erick showed earlier in the presentation was created by IREC with a group of energy efficiency and green building stakeholders. This map is available through the IREC website. It's a highly interactive tool that explores careers in green buildings, energy efficiency, which we know there are so many job opportunities. We were supposed to cover just 40 careers, and Maddy was very patient with us and let us expand to 55 across four major sectors of the green buildings and energy efficiency industry. There are 300 possible progression routes between these occupations. Plenty of opportunities for learners and workers to explore. We identify the credentials and training necessary to do them well, which can be very valuable when you're sitting down to talk to folks about these jobs. And these 55 jobs we focus on really have a mission to design, build, and operate high-quality, healthier, and more energy efficiency homes, commercial, and industrial buildings. Next slide, please.

The map is designed for educators, career advisors, job seekers, employers, policy makers, and workforce professionals like us, anyone who needs to explore these careers, either just for your own knowledge or to work with workers and learners. We know that this industry is one of the fastest growing industries in the US and around the world. I know there are some questions about where we get this data and stuff about salary data we can talk about during the Q&A. And really we know the demand for energy efficiency and green buildings job is not going to go away. We are really pleased to provide this resource, and really invite you to include it in your outreach, and we hope to build off tools and resources, and

we hope that others will build off these resources to make a more holistic picture of our industry and provide much more clear information about career pathways and pathways for advancement to people who are interested in a mission driven career with us. Next slide, please.

And the final program that I will feature for this group, under DOE's EMPOWERED project – yes, that's an acronym. Please don't ask me to tell you what it means – we are developing and deploying training and educational resources for code officials, building owners, and managers for a wide range of clean and efficient technology. Most relevant to this audience will be content on grid enabled building products. These will be hosted on a clearinghouse website – the URL is shown on the slide – where fresh and updated content will be available throughout the grant period, which runs through 2024. We do already have quite a few resources there, but expect much more to come. The image I used on the slide is one of our first resources on inspecting smart buildings, and again this website is listed and in the promotional materials for this webinar. So with that, I'm gonna pass the baton back to Maddy and the team. I believe we're moving on to Q&A. Yeah.

Maddy Salzman:

We are. Thank you so much. And, yeah, fantastic. So many projects that IREC is working on, but really appreciate the commitment, as you say, to not duplicating efforts and really trying to connect the dots between existing efforts wherever possible and then, you know, hone in on what work really needs to be done in this space. So really excited to see more of what comes of the Alliance and how more folks can be working together. So I think we are – and as far as Q&A goes, I have the Slido open on my phone, so if folks have not yet added questions into here please feel free to do so, and also please feel free to upvote questions that you like and want to be addressed. There's quite a few questions in here already, so it looks like people have had access to it, which is great. If we could have Erick and Roger all come onto video, and I don't know if there's a way for me to change my view. Okay, I changed my view to more of a gallery view where I can see everybody, which is lovely.

And so right now there are some kind of high-rated questions that have to do with resources providing wage data for specific positions, and I know this is something that DOE has been thinking about and trying to figure out what's already out there, what, you know, is there a role for DOE to play here. I know, Erick, you showed some information. I don't know if you want to start off by

just saying where you've been able to collect that information. Maybe it's local. And if anybody else wants to chime in on data they're using or data they wish they had.

Erick Shambarger: Sure. There is, that information came from our office of Employment Milwaukee, which is our employment agency, so I would start there, but I believe they pull their information from this organization, I believe it's pronounced O*NET OnLine, and I'll put it in the chat. It's onetonline.org, and so I think they get, I think they do market industry data.

L.J. Davignon: Yeah, and historically the US Energy and Employment Report has had salary data that I know the NASEO and the Energy Futures Initiative have used for a deep dive on energy efficiency wages and salaries in the past. I'm not certain what that's gonna look like this year. It's about to be launched by DOE. I don't know if Maddy or others have any intel. I had heard there's a change in approach to wage salary data, but I think we'll have to wait and see what that looks like. On the solar side, IREC is, having merged with The Solar Foundation this year, does maintain and will continue to maintain the Solar Jobs Census, which does include that sort of data as well as state breakouts.

Maddy Salzman: Yeah, absolutely. Yeah, thanks for sharing that, Erick. I do know that there is quite a bit of data – a lot of reports that I've seen ultimately source their data back to the Bureau of Labor Statistics under Department of Labor, just because they do quite a bit of work collecting workforce information already, but it can be hard especially in some of the careers where there isn't like a really clear NAICS code for the job titles or occupations, so it can be hard to figure out exactly what's the best data to use and is that truly a representation of what workers in this particular space with these particular skill sets are experiencing. So I know it's something that we've been thinking about at DOE and trying to figure out how to make sure we have really good information. I'll also say there is one report, I believe from E2, like called Clean Jobs Better Jobs, and just kind of went into some wage data where they were using some sources where they were able to parse out some clean energy jobs wage data points. But it's still really hard to do, and I commend people that are trying to figure out how to disaggregate some information there.

There are some questions that I think are probably more for DOE, but I would love to have our panelists chime in as well. One is asking are there grants for schools or small construction companies to help fund green training, and I'll just mention the infrastructure

law that was passed in November does have some green training components. Those funding opportunities that may be associated, however they take shape, are not yet posted publicly in any way, but I mean the information about them can be found in the law itself. But there is some, there are some provisions that pertain to upgrading schools. There are some provisions that pertain to energy auditor training as well as career skills training for installers. But I don't know if other folks on the line are aware of other – maybe not DOE or infrastructure law, but opportunities to fund this type of work.

Erick Shambarger: Well, I'll just note that the American Rescue Plan Act funneled money down lots of different ways. So some money came to states and then some funding came directly to cities, and with – there are rules around it, but generally speaking there it's far less restrictive than other federal funding sources that I've seen. And so I don't know what it's like in other states, but the City of Milwaukee has used its portion of its funds for workforce development, but then we've also seen workforce development funds that were federal money but are flowing through the states, and then the State of Wisconsin is doing some workforce programs that can be applied for. So we're working on grant applications now based on the presentation I've shown to some of these different agencies. Not all of them are DOE, so sometimes you gotta be creative in where you go for these different funding sources, but I have not seen more workforce development funds flowing than I have in the last year. It's quite incredible.

Maddy Salzman: A great point. Yeah, I know EDA totally separates government agencies in putting out a lot of things related to workforce development as well, so yeah. There's always, I will not pretend that it is easy to merge funds and merge programs across federal agencies, but I think there are a lot of opportunities to potentially make progress there. One last question in our final minute just 'cause I see a few items in the Q&A about reaching high school students, and I know that's been a topic area for many of our Accelerator discussions as well. I'll give a shout that one says are unions visiting schools, and I think a lot of times unions do play a role in this space. I know NABTU has a great MC3 curriculum to reach high school students. NABTU is an Accelerator partner. Also, another Accelerator partner is The Corps Network, and a lot of youth corps like YouthBuild reach, whether students are in high school or at high school age, and so those are some programs that I would highlight working with. But I don't know if there's other strategies or partners folks on the line would want to mention.

Erick Shambarger: I would just reiterate that it's very important I think to reach kids at the high school level. I think a lot of times our workforce programs, we're targeting people that have been out of school and disconnected from the workforce and often have a lot more challenges, so I'm a big proponent of trying to get people's interest at a young age. I have heard one of the challenges from our public schools is finding instructors for trades education that have both the education credentials and know something about the trades, and so I don't have an answer for that but it's, perhaps it's something that needs to be thought about further so we have not only the expertise to teach young people, but with regard to diversity people of color in these trades that can then train the next generation of people of color. And so but, again, definitely think we need to make these connections with our high schools.

Maddy Salzman: Yeah. I'll mention that this is still an active area that we're working on. There's another awardee we have, Confluence Communications, that's been developing some training resources that can be incorporated into high school programs. But since this is such an active question, actually our next Accelerator workshop for Accelerator partners is gonna be focused on K through 12 education and reaching those groups because we want to dive more into it. I know we are at time. I think there's like one more slide I need to share just with information about the Better Buildings webinar series. Of course this, we're lucky enough to participate as one of the series, but these come up two times a month, roughly, throughout the year, so please feel free to visit the website to register and sign up for more. Next slide.

And you can register for I believe this is the next one on February 1st, PV Valuation: How Solar PV Adds Value to Your Assets, to learn more here. And then I think the next slide is our – oh, no. Interest in learning more. Yes, so we have additional resources PDF in the chat box, which was just added, so you can find links to our Better Buildings Solution Center and some content that was selected by our speakers today, and it's accessible now. And next slide.

Great. All right, so here are our emails if you'd want to reach out and touch base later. But thank you all so much for your time and attention today, and hope you enjoyed the presentation. Thanks all.

[End of Audio]

Classroom to Career: Advancement in Energy Efficiency Jobs

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