

*Cedar Blazek:* We'll give folks a few minutes to come in and we'll get started just a couple minutes after the hour. Welcome everyone who's joining. We're giving folks just a couple minutes to get in the room. Feel free to get situated. All right. Well, I'm gonna go ahead and kick things off since this is being recorded and we'll be able to share if folks missed the beginning.

Good morning, everyone. My name is Cedar Blazek. I am a project manager here at the US Department of Energy in the building technologies office specifically looking at commercial buildings. I'm really excited to have you all on this webinar today talking about our high impact technology catalyst field validation and demonstration program and some of really exciting technologies that we have available. We think it's really important and a great role of government to demonstrate and validate and provide rigorous measurement and verification for promising emerging technologies to help reduce risk for you all building owners in the field.

So we are recruiting host sites for technologies that were competitively selected through one of our processes. Jeff will tell you a little bit more. That help make your buildings more energy efficient, more resilient, and hopefully healthier. So with that, welcome. I'm gonna hand things over to Jeff to talk us through the opportunity as well as the technologies available.

*Jeff Wanner:* Hi, all. Jeff Wanner, work alongside Cedar in commercial buildings. Again, thanks for attending. Just to provide a little background on this program, Green Proving Ground is a partnership between DOE and GSA. It is an annual competition or solicitation for vendors and new technologies as a pathway to market reach and market penetration for them. The FY21 solicitation, which was announced this time last year, and selection occurred in this past spring was for healthy and efficient buildings. So that's the overall and overarching theme.

What we'll go into throughout this are the five technologies that were selected and the applications of those technologies which we are looking for sites to partner with. Those validations are done both at a GSA facility and then by DOE we look to do them in a private sector or a non-GSA facility. So it might be a public building or a federal building, however, just not a GSA site. Ideally, some of these have target markets and target buildings that might be better than others, but we can talk about that in detail. I don't think it was mentioned yet, but please log any questions you

have and we'll stop it if they're relevant mid present or we can take them at the end as well.

These validations are done by the national laboratories. We have a few from the labs on now, but those validators really serve as the project manager and conduct the M&V and the case study reporting out on the findings. Next slide. Thanks. So for FY22, this selection we are looking for for sites. This is an annual call. So looking for technologies that are novel or new ways of approaching things that could have wide impact on energy reductions or in this case, for FY21 are healthy buildings. We're seeking partners in commercial buildings.

As I mentioned some sites specific or site desires that are beneficial based on the technology type, but we'll go into that in detail with each one. This validation is put on or overseen by the national laboratories being Lawrence Berkeley, National Renewable Energy Lab, Pacific Northwest, and Oakridge National Laboratory. The technologies are purchased by the host site. So the way this partnership works is we would make the introductions DOE to the – between the organization, the building owner, and the technology vendor.

And then that conversation for procurement would take place, which we can be a gateway to, but we're not gonna sit in on. Then when the validation kicks up or looking at insulations the lab principle investigator will serve as the primary project manager alongside the energy manager or likely yourselves. Next slide. The benefits participation, it's a fairly low-cost way of testing out a new technology that may be deployable and beneficial across your portfolio.

So for larger portfolio owners this could be a good way of trying out something new that may work across the board. The third party validation through the National Laboratory, that is funded by DOE. So that partnership will provide results and findings of performance for the vendor and host site, both. And that can be used at your desire. This is a pretty visible program. It does not need to include the names of organizations if they choose not to. However, if beneficial to you, we certainly would like to include it among different presentations and conferences where this is published. Good job.

Next slide. So the five technologies for this year, we'll go into each one specifically. But just to cover them overall, we have an air ceiling, the automated air ceiling. That's a spray insulation, HVAC

pretreatment dehumidification system, a high performing air filter system, the coreless motor, and snap-on window insulation panels. We can go to the next. So for this program requirements and preferences, we do require that the host site is actively and eager to participate. There will be some management on the buildings facility manager, mainly the coordination with the lab investigator. It's beneficial to the program if the building has historic energy data and that could certainly expedite a timeline if that's desirable.

We do – the lab can install sensors and conduct that baseline on their own. However, it's nice if that data exists already. Just the level of knowledge and the depth of knowledge at the facility can certainly help in receiving good results and valuable findings. Next slide. So the automated air ceiling. This is an airborne air sealant. It's – the building would be negatively pressurized and this particular matter is sprayed into the air inside the building to fill in small gaps.

So it's really an envelope tightness procedure. There are some challenges with this one. One of the larger being that it requires a facility to be nearly empty or out of use during insulation of this product. Horizontal surfaces need to be covered so that you can drape off or prevent this particular matter from settling anywhere. It's nontoxic, but it could get on to things that would be undesirable. This technology, we think the ideal location is a cold climate, zone five or above. However, if you think it would be good for your facility outside of that, we would certainly be willing to consider that and discuss that as well.

We can go to the next. The HVAC pretreatment dehumidification system is a filter box. In the image here you'll see it on the right hand side of the air handling unit. It pulls off of the cold, the chilled water loop, and runs through a coil. So you are precooling the water to pull out humidity from the area – from the air. This is specific to outside air. So if your facility has now, with COVID, increased percent of outside air, this may be a valuable solution. Really this is a technology that's best for high humidity. So thinking areas in the southwestern, southeastern US or Hawaii. These are really the ideal locations for a technology like this and a high outside air content.

We can go to the next. The Nanofiber air filter is a high performing air filter that does not really – does not increase the resistance of the air filter and the fan system. So looking at really reducing the – sorry – not increasing the level of – sorry – not decreasing the air movement through the building, but increasing the particulates that

are removed via the air filtration system. So this should fit into the system with a standard box air filter. We can discuss more on types. There's some types that this does not work as well with. However, most types of air filters today, these filters should fit with an air handling system.

Next slide. The coreless axial flux motor, this is a high performance motor that is operating without a large magnetic core. So it is a smaller footprint of a motor. It also performs significantly better at low RPM's. So if your motor is operating currently with the VFD, this would perform reasonably better than that motor and certainly if a motor does not have a variable frequency drive, this should outperform it substantially. The ideal test location for this we think is a fan array.

So looking at an existing fan array for air distribution system in the building. There are some limitations with the motor horsepower size. This is currently being produced in a ten horsepower motor and a seven horsepower motor – sorry – 7.5 is coming. So one of those two sizes is really where it needs to be in terms of sweet spots. Certainly the longer run time of a fan if you have a 24/7 fan operation distributing air through the building, that would be a pretty ideal test bed.

We can go to the next. The last one, the snap-on window insulation, these are a clear glass film that's being added. So basically it's additional layer of glazing. A differentiator between this and other products is that the glazing mounts directly to existing glazing's. So it maintains the operability of the window. So that is certainly desirable in multifamily housing and other commercial buildings where the operability is beneficial or is necessary. So that's why that's the ideal building sites. We do feel this technology is valid in a cold climate. So looking for cold climate facilities would be valuable.

Looking – the ideal is a single paint application. Mainly that going from single to double pain is a more significant savings. However, double pain windows or older double pain would still see benefits from this technology. So that's not a too terrible of eliminating factor. That's all the five. I will stop and see if there's any questions now. Did anybody – Cedar, did we have any log that would be worth addressing on specific technologies?

*Cedar Blazek:*

Hey, Jeff. No questions now.

*Jeff Wanner:*

Great. So just to cover overall the demonstration objectives are to validate and verify the performance characteristics of these technologies. Really the energy reduction, the cost savings, and the environmental improvements. I didn't mention on the air fiber – sorry – the Nanofiber air filter, but sites with high particulate matter and high outdoor air ratio are desirable there. Our primary investigator is in the California central region and mentioned smoke and fire as being an ideal test bed or that area and region because it would limit particular matter significantly.

So this is a new technology validation. We're looking at helping these companies in proving out their technology and increasing their ability to reach market adoption in areas that we think would be valuable. We can go to the next slide. We talked on it briefly before, but I wanted to cover it again. The site role, we need building owners that are willing to participate and also engage and excited to participate. This process is facilitated by DOE, but we manage by the national laboratories.

So lab primary investigator is going to be assigned or has been assigned to teach these technologies and they would work hand in hand with the energy manager or building facility manager to identify the great application for this and then to assist with the logistics and placement of the technology and then conduct all the M&V. So if there's baseline that needs to be done we'll be collecting that data and then validating the performance by collecting data during implementation.

Some of these technologies I mentioned being cold climate specific. Where we are now in the year, it would be if someone wanted to be at a fast pace we would be able to validate this winter. However, we're getting to a timeline that it may be tough to validate this winter especially if we don't have baseline. So validation through this winter would be ideal. However, for those winter cold climate technologies, the winter of '23 may be when these would be validated.

Summer technologies, we're still in a timeline that we would like to validate them in the next – have a site selected and be ready so that those could be validated in the summer of '22. Just to give you a glimpse, I think I did mention early on this is an annual competition – sorry – annual RFI. For FY22 we released that RFI just a few weeks back. So that's out now with a closing date in mid-December and the target for this technology is net zero carbon buildings or technologies that work towards net zero. So we're looking for high performance building technologies, on site energy

generation and storage, and greenhouse gas and carbon reduction technologies.

These are obviously very broad categories. We're expecting and anticipate some pretty exciting technologies coming through that. About this time next year we'd be looking for host sites for these types of technologies, which we'll know what those are in spring of '22. But if you have companies you've worked with or have been exposed to recently that you think could be ideal candidates for this, please pass them our way or pass my contact information to them. That'd be certainly valuable.

Next slide. So really that wraps up what we have today. If anybody has questions, we can certainly take those either in this format or you can send them to myself or Cedar directly. The Green Proving Ground e-mail on here, the GSA.gov e-mail, that goes to myself and other program managers for this and we certainly look forward to your feedback and participation if you think that these would be valuable and beneficial to your building.

*Cedar Blazek:*

Thanks so much, Jeff. We don't have any questions in the Q&A or the chat right now. So we'll hang around for a few more minutes. Our goal was to keep this really short today. So if you have questions that are more particular to your building that you don't necessarily need or want answered in front of the group please reach out to Jeff and myself or just that GPG@gsa.gov e-mail. Really nice and easy to remember. We can schedule a follow-up call. We can talk about your particular facilities, get more into depth about each of the technologies or if there's one or two that you're particularly interested in. And I think with that, y'all are welcome to drop off. We'll hang on for a few more minutes and see if there's any questions.

*[No conversation, 0:18:34 to 0:19:11]*

Okay. Oh, here we go. "What is the return on investment for the window treatment, the wex window panels?" Jeff, do we have an estimate of that? You're on mute.

*Jeff Wanner:*

Yeah. ROI might be a little tough. I do have estimated costs that I could share and Jeffrey, may be worth following up an e-mail on that. They've given me some pricing. The ROI, it's really gonna depend on your existing conditions and I don't know – we'll have to discuss facility characteristics, but that can certainly be a conversation.

*Cedar Blazek:* Thanks, Jeff.

*Jeff Wanner:* Awesome. Jeffrey, I think I've got your e-mail on the attendee list. So I'll follow-up there as well.

*Cedar Blazek:* Well, I think with that we can wrap things up. Thank you all so much. Hopefully we'll hear from you soon.

*[End of Audio]*