Connected Communities RFI

U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy

Building Technologies Office

……………..

Here is the transcript of the Connected Communities RFI webinar held in April 2020.

Monica Neukomm:

Presentation cover slide:

OK. Hello. Good afternoon, everyone. Thank-you for joining us today. This is Monica Neukomm from the U.S. Department of Energy. And it looks like our participants calling in have slowed down here, so we're going to go ahead and get started. Thank-you for joining the webinar focused on Connected Communities request for information. This webinar is being recorded. We have two hours scheduled for this webinar today. And we really appreciate you making the time for this webinar. We know that there are a lot of competing factors these days and two hours is a long time to ask. But this webinar is a really important opportunity for us to hear feedback from all of you, our stakeholders. During this time, we'll provide some background information, but we've structured the agenda to allow time to pause and get feedback throughout the conversation. It might seem a little bit ironic to say we really want to hear your feedback, and you may have noted that you all are muted, but given the number of participants that will be participating in this webinar, our main way to get feedback from you today, and really the only way for it today, will be through the chat box. And then of course you can send in written comments officially, and we'll explain how to submit that information later in the webinar. So Starr, if you're able to go ahead and click to the next slide ...

Alright, great. So as I mentioned, the way that we'll be getting feedback from you today will really be through the chat box. So hopefully on your screen you see the slide, and you will see a blue box at the bottom that has a little bubble. If you can click on that, the chat box should pop up. And hopefully we have set this up in such a way that there is one option that says "All Panelists." That's your option to send a chat. But if other options are coming up, we ask that you just select the "All Panelists" option. That's really important because there are a number of us on this call, and so that way we can all see the questions that are coming in. So just to emphasize again, as you type in your comments, please select the "All Panelists" option just before you hit "Send." OK. So then moving on to the next slide.

Great. So walking through our agenda for today: We'll do a quick webinar purpose and introductions. We'll follow up with a summary of our Grid-Interactive Efficient Buildings work, followed by a quick overview generally of funding opportunity announcements and timelines. And then really the bulk of the webinar today will be an overview of the Connected Community RFI. We'll go through the content of the RFI, talk about the submission process and teaming information. And as been noted, we have it set up so that throughout the process we'll be pausing to hear your feedback and going through questions. And then we'll end with a general Q and A on the RFI process. Next slide.

Alright. So the purpose of the webinar today. We have a few things we're hoping to get feedback and share with you today. The first is providing some background on the Building Technologies Office and its Grid-Interactive Efficient Buildings work. Of course, we want to answer questions on RFI and response process. And then our main objective is to solicit feedback from stakeholders, all of you, on the draft Connected Communities FOA goals and design. All of us working on this potential FOA are really seeking your feedback during this timeframe RFI process. And this really goes all the way to the top. Our deputy assistant secretary of energy efficiency, Alex Fitzsimmons, has emphasized the importance of gathering feedback from our stakeholders during this time. In fact, he's made the time to join this call and hear your feedback. And so at this point, I'd actually like to turn it over to Alex as a chance to give some comments and thoughts on the Connected Communities work. So over to you, Alex.

Alex Fitzsimmons:

Alright. Thank-you, Monica, and thank-you all for being here. You know, as Monica mentioned, we understand this is a challenging time for all of us and that we have a lot of added pressure in our lives. And so we all at DOE really do appreciate your interest in this funding opportunity announcement and your willingness to join us for a two-hour webinar on this. So you know, we know that the integration of new technologies into our homes and businesses holds promise for enhancing the flexibility, the resilience and the energy efficiency of the U.S. energy system. And we also know that residential and commercial buildings consume 75 percent of all U.S. electricity, and that's typically even more during peak demand, which makes buildings unique assets to the U.S. energy system. And so as the technological sophistication of our homes and our workplaces continues to rise, due to a number of factors, we really see an opportunity for buildings to play a much larger role in shaping the energy system of the future. And that's what we're here to talk to you all about today, to get feedback from you all on. So DOE for several years has been researching how buildings that are linked to one another across the electric grid and to the Internet can be joined together to not only improve themselves and each other, but the energy system as a whole. And so that's the vision behind DOE's Grid-Interactive Efficient Buildings program, which is led by the Building Technologies Office in conjunction with other programs. And so through the Grid-Interactive Efficient Buildings initiative, DOE is working toward a future in which our buildings can serve as reliable grid assets, not just as passive consumers of energy as they have throughout history, but as reliable grid assets that operate dynamically with the grid to enhance efficiency, flexibility, and the overall resilience of our energy system. To expand on this Grid-Interactive Efficient Buildings work, EERE recently announced our intent to issue a funding opportunity announcement, a FOA, that we're calling Connected Communities. And we also recently issued a request for information seeking your feedback on this effort. And that's what we're here to talk about today. So this new competitive funding announcement, which we're expecting to formally roll out in the coming months with your feedback incorporated, is envisioned to be up to 42 million dollars. I think it's going to end up being higher than that, as we have some other strategic partners in other offices who are excited to join BTO. And what we're going to do is establish a cohort of regional pilot projects around the country. And these projects, which will be managed by BTO, are going to evaluate the capacity of grid-interactive efficient buildings of all kinds to perform at a community scale. So they'd be able to provide greater degrees of demand flexibility and other services at far greater scale and in more varied settings than we've ever tested before. So the Connected Communities pilot will be an expansion of DOE's successful partnership with the electric utility sector and real estate developers that's known as Smart

Neighborhoods, which I'm sure many of you are already familiar with. So these neighborhoods test GEB functionality in real-world homes that are inhabited by real people. So these projects integrate energy storage, energy efficiency, and other distributed energy resources with, say, connected efficient appliances and other features to both reduce and store and change the timing of household energy use, all without sacrificing the comfort and productivity of building occupants, which is a top priority for us. If these technologies are going to be sustainable in the long run, they have to make people's lives better. That's what we are in the business of doing, is improving people's lives. And we know that people spend 90 to 95 percent of their time in buildings, perhaps even more today during these challenging times. They are our refuge. They are our home. And so we are committed to developing technologies that enhance productivity and enhance comfort, because that's ultimately what will lead to the sustainability of these new technologies moving forward.

So I'm going to talk a little bit briefly about the existing Smart Neighborhoods and how the Connected Communities program is going to build off of that foundation. The first Smart Neighborhood was unveiled in 2018. It is Alabama Power's Smart Neighborhood in a suburb of Birmingham. And this neighborhood is comprised of 62 single-family homes with a combination of connected appliances, highly efficient design and equipment, electric vehicle chargers, and advanced controls. And these homes are also connected as a neighborhood-level, island-able microgrid, which includes community PV, a battery energy storage system, and a backup natural gas generator. So it's integrating so many new and exciting technologies together. And we're also partnering with Oak Ridge National Laboratory, who has developed a novel control strategy that uses DOE's transactive console platform to help achieve grid responsive control of the energy loads in these homes. And so that's very exciting. In fact, the Secretary of Energy, Secretary Brouillette, visited, toured, the Alabama Power Smart Neighborhood last year. And one of the things he pointed out is that these homes and neighborhoods are providing choice and freedoms to the American people on how and when they want to receive and use their energy supply. And that's an important element of this, is it's about comfort, productivity, making people's lives better, but also empowering them with options and choices to make informed energy decisions to improve their lives. We're excited to have such high-level support for these projects within DOE.

The second project was launched in 2019, and that is Georgia Power Smart Neighborhood. Both Alabama Power and Georgia Power subsidiaries of Southern Company. And this Smart Neighborhood is in Atlanta, and it's a set of 46 townhomes as opposed to single-family homes, and that include rooftop solar as opposed to community PV. It's similarly a battery energy storage system, and also energy-efficient building technologies within the home itself. So similar to the Alabama neighborhood, the advanced technologies within the Atlanta Smart Neighborhood are also managed by Oak Ridge National Lab's control platform, which we think if successful will enhance the flexibility and provide value for homeowners and grid operators alike, which will help make the business case for these sorts of smart neighborhoods going forward.

So the success of these projects really depends on validating the results in real-life conditions. DOE has helped spearhead so much early-stage R&D through our national labs, universities, and industry. On many of these technologies, independently. The value add for the Smart Neighborhoods and Connected Communities is that we're now testing, evaluating and validating the results of integrating all of these technologies together in the real world. And so far the results that we've seen have been quite promising. For example, in Birmingham, after a full year of occupancy, we've seen that the smart homes are using 44 percent less energy than comparable new-construction homes in the Birmingham metro

area that are all electric. These homes have reduced their peak winter heating demand by 34 percent. And that's what it's about, especially when you have low kilowatt hour electricity. It's about reducing demand during peak hours. That's what becomes incredibly important. We've seen successful results there while consumers -- the homeowners themselves -- are saying that the performance and comfort has been maintained if not improved. So that's an important piece of this, is the validation of the results in the field. We know that through rigorous field validation the Smart Neighborhoods and the Connected Communities can illustrate the potential for grid-interactive efficient buildings across the U.S. economy. Building on the foundation that DOE has helped establish, the Connected Communities program will help serve as a model for how we can combine DOE's early-stage R&D with private-sector field validation to de-risk and commercialize new technologies. So the Connected Communities program is part of and really is the foundation of a larger field validation strategy that I asked, in my capacity as the deputy assistant secretary for energy efficiency, that I asked all four of the energy efficiency offices to put together. I'm proud of what the Building Technologies Office has done here and will continue to do with your feedback and guidance.

And so I think it's important to point out that while the existing Smart Neighborhoods focused on new homes, the Connected Communities FOA that's you're going to hear more about today will be open to proposals for both new and existing communities. And we're including both residential and commercial buildings. So the goal here, as I said earlier, is to develop a diverse set of projects across multiple geographic regions, building types, technology solutions, and market structures. Because we do have a very diverse country, and if this model is to succeed going forward, it's going to look differently in different places under different circumstances. And so we want the Connected Communities demonstrations to reflect the richness and the diversity of the country.

We all at DOE are certainly looking forward to continuing to engage with you all about the Connected Communities FOA. Of course you can sign up; you can talk to us. We want to hear what you have to say. As I explained when I went to the ribbon-cutting for the Atlanta Smart Neighborhood last year, in 2019, DOE is really reframing the way we think about the role of buildings in the U.S. energy system, because we know the energy system is changing so rapidly. And so we're less interested in searching for ways to simply use less energy within a building's walls, using less energy for the sake of it. Instead we are working to understand how we can use our energy consumption more dynamically so that buildings can provide innovative services to the grid with which they're connected, which we know will improve the efficiency, the flexibility, and the resiliency of our energy system going forward. So I hope you all are as excited as we are for this Connected Communities FOA. We look forward to hearing your feedback, to answering your questions. And we look forward to continuing to partner with you. So with that, I'll kick it back to you, Monica. Thank-you.

Monica Neukomm:

Thanks, Alex. And we could actually hear your enthusiasm without slides. So thank-you so much for the vision and support that you do provide on this. And I do want to note that the chat box is working very well. Thank-you for all of you for sending it to all panelists. There have been a number of questions. We will be sharing these slides. They will be sent out in an email afterward. And we'll post it on EERE Exchange. We'll share that link with you. And also there were a few remarks just about the projects that Alex mentioned. We had a previous webinar on April 3 where we went through some of this material,

and there were a lot of questions about some of the existing Smart Neighborhoods, you know, connected communities that BTO is currently funding. So we actually are holding another webinar on May 4 in response to some of those questions, where we will walk through those examples. And of course we'll share that information with you in the follow-up email that we send, as well. Alright. So moving on to the next slide.

So before I get into introductions here, I just do want to note the title here, "Collaborating Across DOE Program Offices." In addition to Alex, there are a number of us across DOE actually on the call today, and this project in particular really is collaborative. Oftentimes in a program office when we do a funding opportunity announcement, we just focus on the technology or area of interest for our office, but in this situation it's really critical to have the Building Technologies Office working alongside the Solar energy office to work on distributed energy resources, as well as considering electric vehicles. And then of course looking at how they're all optimized and the demand and supply mix and how those connect to the grid. This is a very collaborative effort across a number of offices. And I'll just spend a minute here to introduce a few folks. We thought it was important to share some smiling faces here in the days of social distancing. So we have David Nemtzow, who is the director of the Building Technologies Office, and you'll hear next from him. In addition, we have a few folks from the Building Technologies Office that I'll call out. Dale Hoffmeyer works on our Residential team, Sarah Zaleski on our Commercial team, and Erika Gupta leads our work on sensors and controls. And so even within the Building Technologies Office this is a very collaborative effort. From our Solar Energy Technologies Office, we have Andrew Dawson. Mark Smith is joining us from the Vehicle Technologies Office, and Chris Irwin from our Office of Electricity. So we're all on the call and here to answer questions that you may pose as we go through this discussion. And then at this point, I'd like to turn the mic over to David Nemtzow to talk a little bit more about the Building Technologies Office and Grid-Interactive Efficient Buildings. David?

David Nemtzow:

Thanks, Monica, and welcome, everybody. Very happy to see over 300 attendees today. And on the earlier version of this, we had nearly 400. So we're very pleased to get that level of interest and support, and we hope we will get your formal written comments to the questions we're dealing with. I'm going to -- I won't be speaking directly about the request for information that's on the street right now. Somebody else will. But I just want to say now, and I can see your questions coming in, many of the questions you're asking have not been decided yet. We have a vision. Deputy Assistant Secretary Fitzsimmons talked about the Department of Energy's intentions here. We'll talk about that. But most of these decisions about how will we design this funding opportunity, what do we think are the optimal connected communities -- most of those decisions are yet to be made. It's a story that's yet unwritten, and that's why we're having this webinar. And that's why we need your input in a formal way to our request for information. We know you're stuck at home. We know you're going to give us some of your quality time, not just binge-watching TV, and eating ice cream, or maybe I'm projecting now. But seriously, thinking about the questions that we put out there in this request for information, and need your help designing it. So why don't we dive in. I'm going to next slide, please.

Just real quick, our office, the Building Technologies Office, you heard Alex talk about it; we cover the gamut of energy efficiency and demand-flexible building technologies, residential and commercial. That means 125 million buildings in this country that consume about just under three-quarters of our nation's

electricity, a higher share of peak power in most but not all of the country, for a total bill of 415 billion dollars. And look, we all know at least a quarter of that is wasted and not producing valuable services to the building owner, to the building occupant, let alone to the grid. So we work in our office on the spectrum from early-stage research and development, working with our national labs, and the universities and private partners, all the way through to integrating those emerging technologies into the residential and commercial building space. And looking at also consumer tools, to help inform consumers of energy, to help them make informed decisions about their options. And we run a program to assist state and local governments with their building code questions, and promulgate appliance standards. Next, please.

And the reasons we do that, you heard from Alex Fitzsimmons before: to promote efficiency, resilience, and grid services and all the environmental and affordability goals. I don't know about you all -- yea, my slides are looking a little slow. I don't know if that's at my end or the Webex end. Monica, are you seeing slides advance?

Monica Neukomm:

David, it looks like they're a little bit frozen, so I think if you maybe just want to go ahead –

David Nemtzow:

OK. I'm going to talk off what I know is next. My next slide anyway would just cover ground that Alex Fitzsimmons covered. It's just a list of what we see as the benefits of flexible loads. And before we get to Connected Communities, of course a connected community is in our vision a bunch of buildings. And they're probably geographically situated together, though maybe they're not. And we think that these buildings individually let alone collectively can provide many benefits, energy affordability, improve the reliability of the power grid, reducing grid congestion, especially at peak times or at times of sharp ramping, if you're in a state with big fat duck belly. Enhanced grid services, of other kinds. Environmental benefits, not the least of which is renewables integration as well as other environmental benefits. And providing greater customer choice through greater flexibility. Next, please. Alright. I think you're not seeing slides. Is that right, Monica? Do you see slides?

Monica Neukomm:

Yea, Starr is working on pulling them back up.

David Nemtzow:

OK. So I'll keep talking. I'm going to skip that slide. My next slide is a visual that doesn't make sense to talk; I'll come back. I got all visuals here. OK. So what I'll say is this. When we think of this area, and we call it at the Department of Energy, Grid-Interactive Efficient Buildings. If you call it that or want to think of it as buildings-to-grid, that's fine by us. Grid-Interactive Efficient Buildings, summarized as GEB, are

the approach we take. And it's the same approach we take to all issues we work at BTO, at the Buildings office and at DOE, as well as our colleagues in Vehicles or elsewhere. And that is, we start with the building occupant. None of what we do, whether it's traditional energy efficiency or grid-interactive flexible demand, such as what we're talking about today, will work if the building occupant doesn't get at least the same level if not improved comfort, productivity, services. So we have to start with that baseline. We're not going to work to degrade their comfort or productivity, nor do we need to. So with traditional efficiency, we did that through you-pick-it: LED lightbulbs, a new refrigerator that consumes a quarter of the power as ones 40 years ago, yet providing more cubic footage and more services, etcetera, etcetera. Now with the new opportunities we have with flexible demand, we can use, for example, advanced sensors, algorithms, controls, and accuators. So that we can do things that we either couldn't do before or weren't cost-effective. You probably all, at least if you're in your office, would have an occupancy sensor now. And in that space it would say, is it occupied or not? Should the lights be on or not? Great. But now, with the increase in inexpensive sensors and ones that can be wireless and that can both communicate and energize themselves wirelessly or cheaply, now we can have more sensors in more places that can not only say whether the space is occupied, but what's the population? And for big spaces, such as cubicle arrangement, or public space, if you can remember public spaces like airports or food courts, you can better measure population, not just the binary of occupation, and control the lighting, the HVAC, etcetera, to optimize for that population. So that saves energy when there's only one or two people there. And it increases comfort and productivity when it's highly populated. So that's an option we didn't have a few years ago where it wasn't cost-effective. Even better yet, is when we can do that looking at not just the needs of the building. If you could click again, Starr?

But what is going on in the utility system? One more click. And that is, is there a signal being sent from the utility? That could be a price signal, it could be a communications signal, it could be an incentive that arrives in the mail signal. But if the utility system can communicate what its needs are. For example, if the peak is sharp and the system is constrained, well, obviously it's more valuable to that utility system for people to shift their demand away from those times. Or again, if it's a duck belly, where there's a lot of power that's cheap and clean and plentiful, that's a good time to potentially not over-consume but to shift power to that time. Maybe overheat an electric water heater during those hours of plentiful supply, and then be more flexible when there are times where it's constrained. So that's the world we'd like to see. That's the GEB world that you see in this slide. And you can do it with lots of technologies, as you see in the bottom right: fridges and water heaters and etcetera, etcetera. Next, please.

You collect them into a building, and this is what you get. On this slide it should be obvious what these technologies are. HVAC is very attractive, as well as water heating. Clearly the thermal end uses, it's easier to be demand flexible because it's easier to coast with a water heater, or with the thermal properties of an HVAC or a building, because of the thermal properties. It's a little harder to do that with the lighting, but of course it's possible with lighting when it's turned off for areas that are not in use. But on this slide I want to focus on three other things that we're adding. If you look at the top of the slide, you see rooftop PV. More and more buildings in this country have distributed PV, and we want to better work with optimizing that, so when that system is producing -- sorry, so that demand in the building can help match when that system is delivering. You see in the bottom left, EV charging, which is another, of course, form of growing power demand in this country. And if I had my druthers, people would charge power when it's plentiful and cheap -- oh, I don't know, 3 a.m. Life's a little more complicated, right? And people want to charge, they have different needs so we want to provide them the technology and

the controls to allow them to make decisions that make sense to them, either under their EV charging scheme or their own personal needs. So that's why we're working with the Solar and Vehicles offices, respectively. You see battery storage in the basement, and that can be in the form of a traditional lithium ion battery or other electrochemical battery, or it could be a battery as I said before, like a water heater. And again, we're working with the Office of Electricity, you can see on the right, just to state the obvious. Because we don't want buildings to be islands; we want them contributing to the grid, and vice-versa. We want the grid to be able to contribute opportunities for building energy management to meters and to building automation. Next, please.

The next slide will be, I believe, -- sorry, I'm toggling two platforms ... The next slide is fine. It just covers what Alex and Monica and I have been talking about. And that is Grid-Interactive Efficient Buildings -- it was your cheat-sheet. We think the four main things, characteristics of Grid-Interactive Efficient Buildings or GEBs are: That they're energy-efficient, that they're connected, that they're smart. And those are different; you can be smart. Smart means the micro-(inaudible), the algorithms. Connected means connected communications as well as of course connected to the grid. And that leads to flexibility. You see that. Next, please.

Next slide will be an image of what Alex Fitzsimmons talked about earlier, and this is the Smart Neighborhood that's in Hoover, Alabama, which is a suburb of Birmingham, Alabama. You heard him say 62 single-family homes, newly constructed, that are highly energy-efficient, electrochromic windows, induction cooking, lots of insulation, heat pump water heaters, etcetera, as well as EV charging in each garage. The solar and storage and the PV backup are all done via a microgrid, and if you look to the southeast, which is to the right of this photo, you can see the picture of the PV field there. And that is connected by a microgrid. So this is very exciting. And most exciting, as you heard earlier, the savings here are 44 percent greater than 62 comparable new homes in Birmingham, Alabama, would be of the same size. 44 percent better. Some of that is through traditional efficiency, such as insulation and fenestration and appliances. But much of it is due to what we're talking about today, about the better controls, about optimizing and synergies. And on top of that, the peak power demand of this neighborhood is 34 percent less than it would have been for, again, for normal homes built just to code, no better. So 44 percent better on the kWh after one year of occupancy, and 34 percent better on the kW. Very exciting stuff. We don't have a year of occupancy for the other project that you heard about -- the one in Atlanta, the townhomes. So we'll see what we get there.

This is -- now you know on the map where Hoover, Alabama, is. It's that red dot. Next click, please. Now you will soon see where downtown Atlanta, Georgia, is. If you click again, you'll see where we want to take this. Not literally. If you see your city there -- if you live in Orlando or, I don't know, Westchester County, New York, we're not promising you a new project. This is just a metaphor. Or if you're living in eastern Oregon. We want to take this national. We want to look, as you heard from Alex Fitzsimmons, we want to look at how this burgeoning success that the Southern Company and Oak Ridge National Lab have in Alabama and Georgia -- what does that mean in other parts of the country, other parts of the country that might be like, ah, that looks like, Los Angeles or Orange County, the southwest -- what does it mean in a system like that with warm days, cool nights and a system that has a lot of variable renewables? What does it mean in the upper Midwest, in a system that might be long on capacity but has some other opportunities to save energy and might not have a big IOU with a big R&D budget? It might have rural co-ops that are anxious to manage the demand for their co-op members and are looking for new technological opportunities. The same, as you can see, in Milwaukee or Schenectady or

any of these theoretical places. So we want to do this nationally. I'm going to talk about, again, what Alex talked about, the diversity of projects we're looking for. This is not a science -- it is a science -- excuse me, just a science project. It's demonstrations to see how this works under different conditions for people with different performance, whether they're offices or hospitals or retail or multifamily homes or single-family homes or mixed-use. And not only that, it's not just demonstrations. We're not doing it just because we think it's fascinating and possible. This is the most important thing I want to communicate. We're trying to design this with the money and resources we have to demonstrate, let's say, hopefully, four to six or maybe more new projects, like those Smart Neighborhoods that are existing. But we want to demonstrate it so that others will see how to do it. And if they're as successful as we think they'll be, if they're as successful as the one in Alabama already is, we hope that those demonstrations will lead to other parties doing their own Smart Neighborhoods or smart downtowns or smart corporate campuses. And that's, of course, the purpose of the demonstration. It's not just to have nice pictures and a ribbon-cutting, but to have other people be educated and inspired by the lessons learned, the successes and the failures. Next, please.

Let's get practical. We're looking right now at the intention to invest 42 million dollars of DOE funds. Hopefully it will be larger than that, with the work we're doing with our partners. And it will be to have a competitive funding opportunity -- next, please -- to develop more such neighborhoods. Look at the top list of checkmarks, please, on this one that says what we're looking for. One, we're looking for teams. We don't expect that any single party can do this whole thing. Even a sophisticated company like Southern working with a sophisticated lab like Oak Ridge, still had to work with that lab. They worked with a prominent regional homebuilder, as well as EPRI and technology partners, Rheem and Carrier and others. So we can't imagine one can do this without having a team. We'll leave that up to you, how to build your teams, if you apply for this future funding agreement. Next, of course, is it's a set of multiple buildings. Yes, one giant office tower in Chicago could hit the -- could be a lot of megawatts and a lot of square feet, but we're looking at multiple buildings here. But they can be any kinds of buildings. There's absolutely no requirement, in fact there's no desire, for them to all be residential new construction single-family like the first two Smart Neighborhoods. Next is we're looking at multiple distributed energy resources. The focus of this is demand flexibility and energy efficiency, that's on the demand side. We've talked about that. But we want to do this with PV and/or with storage and/or with microgrids. A focus on resilience, a focus on affordability. So we're interested in proposals that get beyond just demand flexibility and look at integrating other DERs. Next checkmark, you've got to share data. It's a demonstration project that's largely funded by the taxpayers, and of course we will respect all privacy rules, which of course vary by state and service territory. That's not the issue. The point is, we want to be able to, we need to be able to, share the results of these, so that all of us can jointly learn from these projects. And next, as you've heard, very important is this diversity. Geographic diversity, certainly. Other parts of the country with other different kinds of climate and weather conditions. But also different vintages. "Vintages" means lots of things, but again, not just new construction, but if it's possible in a retrofit situation, in a mixed-use situation, with different kinds of buildings. Different utility and regulatory environments. Again, more renewable, variable renewables, fewer capacity, long capacity, short, high rates, modest rates. We want to see how it performs in different situations. IOUs, co-ops, communities, and maybe some nontraditional utility players. Maybe an aggregator or somebody else. It's all fair game. And then of course, building type across the spectrum. And so we've already gone over what we hope to achieve. You can see this on this slide. There's your QR scan, if you haven't already had a chance to look at the request for information. But you know, you can also -- I'll make life

easier for you -- look, if you're on this call, I think you found your way onto our website. But if you ever lose the bookmark, just Google "BTO and GEB." You do that, you get right back to it. And you'll also see not just this important bureaucratic information about our request for information, but you'll get a lot of information about Smart Neighborhoods, Connected Communities, the preliminary results of the Alabama one year of occupancy, as well as academic and other papers on the topic. There's a lot of good resources there, so I hope you'll look at that. I'm going to turn the microphone back to Monica Neukomm.

Monica Neukomm:

Great. Thanks so much, David, for walking us through that background on Grid-Interactive Efficient Buildings and how the Connected Communities work. Before we move on, I just want to make a point here, because I've seen several questions come in. The slide that David went through and the little red dots showed up, that was just to illustrate a point that we're hoping for great diversity from this future FOA. They in no way indicate that we're only interested in those areas, those cities, etcetera. So that was just to illustrate a point. OK.

David Nemtzow:

I'll save you a question we got last time. We are interested in the U.S. of A., so thanks; foreign projects are interesting to us, but that's not where we're looking at. Anywhere in the 50 states, as Monica just said, we're interested in and we'll review all applications.

Monica Neukomm:

OK, great. So at this point Dale's going to hop in here and talk a little bit about the funding opportunity announcement timeline. Is that right, Dale?

Dale Hoffmeyer:

Yep, thanks, Monica. And before we get to that slide, if you're on the webinar and you don't have a copy of the RFI, the link is right there at the bottom of this slide. Of course, you can scan the QR code, as well. But you want to get yourself a copy of that RFI, have it in front of you, and in a few slides we're going to have Erika Gupta, she's going to walk us through the RFI and the questions. So you're going to want to have that. I'm going to talk a little bit about some of the acronyms we've used and about the process. So go ahead to the next slide.

If you Google "EERE funding opportunity process," you'll find a page that has this and more information about how EERE uses FOAs to solicit applications. And we do this in specific program areas. And we select projects based on merit review process, and that merit review process includes industry and technology experts in the review process. So we have a process for that. We've talked about FOAs, or a potential FOA. And we're not at this phase yet. We're not at this phase of the process. We are what I

would call pre-FOA. So once a funding opportunity announcement is issued, then we are soliciting applications and proposals. And this illustration here just shows a little bit about what that process looks like. Once we are asking for applications. But we're not at that phase yet. We are in the pre-FOA phase. So let's go to the next slide.

So we -- it was mentioned that we issued a notice of intent. So we notified stakeholders and the public that we intend to publish a FOA. So we are expecting to deliver a FOA at some point in the future. At least we hope so. We will find out if that happens. So we do want to alert people that we're thinking about it. And that NOI was issued in February. Since then we've released a request for information. And we use a request for information to get information from the public or from stakeholders. And sometimes we will use a request for information to get feedback and solicit feedback on things like a technology roadmap or technology agenda. That type of thing. But in this case we are using it to solicit feedback on a draft FOA concept, or a draft FOA topic. Next slide.

So this is the key information about this request for information. Again, it is a request for information, not a funding opportunity announcement. So we're not accepting applications at this time. You want to get yourself a copy so you're ready when I turn it over to Erika. Next slide.

So again, the subject of this RFI pertains to a draft FOA, which we are hoping to issue, we're planning. But we're not sure yet. So as David mentioned earlier, there's a lot of decisions that haven't been made. So the information we receive through the RFI will help us to develop the FOA. And we are specifically interested in information on the goals and design of the draft Connected Communities FOA topic that is included in the RFI. Next slide.

In addition to the draft FOA topic, there are questions that we have posed in the RFI. There are four categories of questions. The first category focuses on technical requirements that are in the draft FOA. So we have specific questions for you to respond to. Category 2, the questions relate to funding, cost-share, and period of performance that are in the draft FOA. Category 3 relates to data-sharing and measurement and verification that are outlined in the draft FOA. And then the fourth category is "Other," (inaudible). So those are the four categories of questions. And I think the next slide, we're going to turn it over to Erika Gupta, and she is going to walk us through the RFI. Erika?

Erika Gupta:

Thanks, Dale. Alright, everyone. Now we're going to get to the content of what's in this RFI, which means, what's in the draft of the funding opportunity announcement, and talk about what are the specific questions that we want you to give us your feedback, your thoughts, on, in order to help us craft the final version of this funding opportunity announcement that we're hoping to release. So with no further adieu, you've already heard that we're planning to make a very significant investment in this area; it's across offices. You've heard all the reasons why. Really, there's a great amount of value that can be had by leveraging flexible loads and managed EV charging to cost-effectively provide value to the grid while also improving occupant experience. Next slide.

(I'm sorry, it looks like there's some animation.) We're going to jump right through this. I'm not going to reiterate what you've already heard. Alright. So one thing I think that is important to spend a little bit of time on, is what we mean when we say "communities." For the purpose of this draft FOA topic, we are

saying a connected community is a group of grid-interactive efficient buildings with diverse flexible end-use equipment, that collectively work to maximize building and grid efficiency without compromising the occupant needs or comfort. The community can take many forms. It could be residential, like Reynolds Landing that you heard about. It could be a downtown commercial district, or a mixed-use development like the Domino sugar plant redevelopment. There's a picture of that here. Or it could be a university or corporate campus or some other set of buildings. In addition, the buildings do not need to be physically co-located. They could be distributed across a utility territory, or have other larger distribution but still be working together to provide a sum that is greater than the parts. The communities can be new construction; they can also be retrofits. You've heard already that we're going to be looking for a portfolio of projects that have a balance of factors. Obviously climate and geography is on that list. We also want to see different utility conditions, as was mentioned, different regulatory environments and market structures. Also we do want to see a mix of building types. So the idea of these communities, building on all of our research to date, we want to see them leveraging new technologies, high-performance design, things like dynamic windows, heat pumps, smart thermostats, just as an example. And the idea would be to leverage all of these intelligent devices in order to really maximize the value of these buildings, in terms of energy reliability, affordability and resilience. Benefits for the homeowners and the businesses while also providing value to the grid. You already heard about how this can work at Reynolds Landing. We also want to have -- we want to consider also communities that are sharing infrastructure. There is the opportunity to improve the overall economic value if you have a group of buildings that, say, have loads at different times of day that share one energy storage system. So instead of each building installing and using a battery, if one has loads during the day and another at night, they could potentially share a battery system. Another example of that would be a shared thermal plant. That could be valuable for physically co-located buildings. And then if we go to the next slide ...

An energy objective of this planned funding opportunity announcement is to have a coordinated and diverse set of projects that are going to be sharing their best practices, both with each other and publicly. The idea here is that this would allow us to synthesize information across many projects that include multiple building types, applications, vintages, sectors, climates, electricity regulatory and market environments, as well as occupancy and programmatic approaches, business models, really in an effort to scale that innovation. We want to see all of these pilots share information about how to make this work in their different environments and what challenges they experience in order to make it easier for these to be replicated. We will have a national laboratory that's going to serve as the Connected Communities coordinator to support the planning, implementation, communication, stakeholder engagement, and the pilot evaluations, and also to publish the research findings. The coordinator will facilitate communication between the awardees during the pilot implementation stages, doing things like webinars, having annual summits so that everyone can get together and share best practices and information. And they'd also provide a website with relevant tools and resources. And they'd be providing technical assistance for the projects to help with common challenges. We envision the primary role of the coordinator to be to support those regional projects and synthesize the results and lessons learned. The coordinator would also play a role in the development of the overall research and evaluation plans, including the data collection process, the message to evaluate pilot performance, the analysis and to the research questions, and the detailed case studies for all the pilots. The national labs, there will be one national lab performing this role. That one national lab would not be eligible to apply for this FOA. Any applicant that would apply to this potential FOA (remember these are all the draft

requirements that we're talking through here now) would have to explain how they communicate and share the research results and lessons learned on projects, to improve the replicability and increase the grid reliability, resiliency, security, affordability and energy integration well into the future. Next slide.

Alright. So this is where we're going to get into some very text-heavy slides. But as mentioned, this is really the draft of what we have in the planned FOA right now that we want your input on. We're going through this document with you right now and getting your input on what this should say. For desired outcomes, we really want to see data from several regions, as mentioned. We want to see how both new and existing can reliably and cost-effectively serve a significant grid asset by strategically deploying energy efficiency and demand flexibility in conjunction with DERs. So you'll notice the little Q1.1 I've noted here. That's to indicate that Question No. 1.1 in the RFI pertains to this. So what we're asking in that first question is the way that we've written those FOA requirements, are they going to support demonstrations that explore the smart load controls and building design and loads reduction strategies in combination with DERs that provide the best options for demand flexibility. So how we're structuring this FOA, is it the right way to really get to these outcomes, is what we're asking. Another outcome that we want to see is analysis on the interaction between energy efficiency and demand flexibility measures. And how grid-interactive efficient buildings improve energy affordability, grid reliability, and congestion, and also how they offer environmental benefits and enhance grid services. We're also looking for proven pathways that decrease the setup time and potential disruption to the occupants of installing hardware and software and communications to make buildings grid-interactive. So that's particularly of interest for existing buildings. Next slide, please.

Continuing to go through the desired outcomes, we're very interested in the occupant impact and comfort levels that result from using this equipment. And using buildings as a flexible load. We'd like to get perspective into the amount and duration that occupants are willing to change the timing of their energy use, and any necessary level of compensation for them to do that. We're also very interested in seeing what the new business models for demand flexibility and DER coordination and aggregation and optimization across buildings, that can be scaled throughout a region and beyond, recognizing technological, business and contractual approaches that will be potentially attractive to customers, utilities, builders and other key stakeholders. So what we're saying here is, we want to know what business models have worked. What are the things that would make this scalable and enable future communities? And that's what Question 1.2 is really focused on. Then another final desired outcome here (and these are not in any particular order, by the way) is to provide online solutions portal with case studies. So this is that one central location where people can go to and see how it was done in these communities and potentially be able to replicate it in their own. So if you go to the next slide, we're going to stop here for a minute and take any questions or comments people have on these first couple of questions from the RFI that are related to the outcome. And Monica will be taking those through the chat. Again, if you see multiple selections, please choose to send to all panelists.

Monica Neukomm:

Erika, I don't see any specific questions coming in on these, but there was a question earlier, I think based around when you were talking about the different sort of types of connected communities. If the idea is that teams have to be able to cover all the aspects that were being discussed or if it's OK to just

narrow in on a compelling few aspects that don't have national coverage. Would you be able to speak to that?

Erika Gupta:

Sure. As mentioned earlier, this is the draft funding opportunity announcement. We don't have anything out at this time. So anything like that, that you think needs to be clarified or if you have thoughts on how you think it should be addressed in this FOA. If it's too much for one group, which I think likely there are some things here that we would say all projects must have and some that are optional. But getting feedback on that is really part of what we want in the RFI process, so please tell us what you think is reasonable.

Monica Neukomm:

OK, and then another question that came in that applies to an earlier slide: How and when will the national coordinator be selected?

Erika Gupta:

We are very actively working on that, and we should be able to make an announcement shortly. We will make sure that information is publicly available and we can include it with the RFI on Exchange.

Monica Neukomm:

OK. Great. I think the other questions as I see them come through will apply to other things. Other items in the future that you're going to discuss. So I think if we want to move to the next set of slides, we'll weave any questions that I see will connect to them.

Erika Gupta:

Alright. Sounds good. Next slide. We're going to get into the draft requirements now. What we're saying in the draft of the funding opportunity announcement. What we would say projects must do. And you'll see there's a whole series of questions related to this in the RFI. No. 1 is include both demand flexibility and energy efficiency, with a to-be- determined minimum level of energy efficiency. So Question 1.3 is asking you, what is that minimum energy efficiency that we should require, and what should we be baselining it against? Also want to know how is it different for residential versus commercial. The next item is, the project must include a to-be-determined total square footage of building space and to-be-determined number of buildings. So Question 1.4 is asking just that. What should that minimum be, or should it be based on something else? Should it be a minimum load size? How do we make a requirement on the minimum size of these projects, in terms of the number of buildings or square footage or load? Question No. 1.5: We're saying these pilots would include at least two DERs, in addition

to the flexible building load, that support demand flexibility, affordability and resilience. And we have two questions related to that. 1.5, we're asking you, is the requirement to include at least two DERs in addition to energy efficiency the right approach? Should there be a minimum amount of demand flexibility resulting from the combined DERs that we should require? If yes, what should it be and why? And should it be different for new and existing? And should it be different for commercial versus residential buildings? And we're also asking for feedback on our definition of grid resilience for this funding opportunity announcement. Next.

We also want to require that the proposed pilots focus on groups of buildings that when aggregated demonstrate measurable added value to both the occupants and the grid, beyond what could be achieved on an individual basis. And we want to have them articulate the pilot's value to the power grid in terms of defined and quantifiable grid services that consider both transmission and distribution operational. Another requirement is to form teams composed of critical stakeholders. Question 1.7 is asking the teams that we are requiring, are those the right partners? If not, are there other more important partners that should be included, or should we have fewer requirements around who is on the team? Is this too rigid? Should it be more flexible? Give us your feedback on who those teams should be comprised of. Next question is related to the requirements to include demonstration of innovative technologies and approaches. Here we want to know, in Question 1.8, should natural gas technologies be considered in the pilot? If yes, how should they be included? And we're also asking, are there new or emergent technology strategies that support DER optimization that could leapfrog the outcomes of this anticipated FOA that should be incorporated into the pilot design and implementation? So give us your feedback on that. Another of our draft requirements is that the pilots demonstrate pathways that quantifiably decrease the setup time and challenges associated with design, installation and integration, and commissioning of hardware, software, controls and communications to make buildings grid-interactive. We also have a requirement to collect data supporting occupant interactions with the smart technologies and their improved comfort levels. And we're also requiring a plan to address cybersecurity and privacy challenges in both demonstration and at scale. The question we have related to that is, what are the technical communication requirements that should be included for maximum project effectiveness and future scaling? And when we say communication here, we mean data transport, network technologies and interoperability. We're also asking what cybersecurity and privacy requirements should be included. Alright.

We're off to the next slide, last slide on draft requirements. The requirement that these projects pilot new business models for demand flexibility and DER coordination, aggregation and optimization across buildings that can be scaled, recognizing technological, business and contractual approaches that will be potentially attractive to consumers, utilities, builders and other key stakeholders. Question 10 relates to that, 1.10, and says, do any of the outlined criteria present limitations to emerging business models? Should other criteria be considered? So is there anything that we're writing to this draft FOA that would be a limitation to new and emerging business models? And then our final of our draft requirements is that these projects communicate and educate relevant industries, public officials, professionals, the public and stakeholders regarding the pilot's value in terms of the goals described earlier. Alright. Next slide.

Oh, drat -- I forgot something. Sorry. We've got one more to go through before we get to more questions. Planned draft preferences. In addition to those requirements, we're saying preferred applications would also have this. They would integrate technologies and things that are broadly

replicable. So things that we can easily replicate. Demonstrate EVs and managed charging as part of the overall building system load. Also scale or stage energy supply and consumption using load control, storage and generation, in order to deal with power outages. So in terms of resilience for the community during power outages. They would include a larger number of buildings, a greater number of buildings, and more DER assets. So this is kind of a "bigger is better" preference. And they would consider building- as well as community-based assets to maximize system value to community members and asset owners and grid operators. It would also provide a plan for replication in other communities. Alright. Now we're going to go to the questions, and ask if you guys have any comments, feedback related to these questions or questions about the questions that you would like to raise now. And Monica will take those through the chat.

Monica Neukomm:

Great. I have a few that I can start off with here. And some you might consider them more of remarks than questions, but I'll let you determine that. Do you have a GHG focus or natural gas technologies? What about fuel cells, PHPs, etcetera?

Erika Gupta:

I think that's something that we can consider in response to the question on what technologies should we consider. You know, if there are reasons that you believe those are very important technologies to consider as part of these projects, I think that's good feedback, that can be provided. That's Question 1.8.

Monica Neukomm:

OK. So this is just a question, I think, going back to when we were talking about connected communities, but, buildings that are not co-located, do they still need to be serviced by the same utility?

Chris Irwin:

Hi, Monica. This is Chris Irwin from the Office of the Electricity. I can probably take that one. And it goes back to something that Erika just mentioned a couple slides ago, which is, when we're talking about connected communities, they have the potential to offer services to both transmission and distribution companies. And so generally, the utility that you have is often a distribution utility. And so it's entirely possible to have communities of buildings that may not be able to offer an explicit grid service to a single distribution utility, however, based on their footprint they may very well be able to offer an explicit grid service to the transmission system itself, which can go up into the wholesale markets or through other more innovative domains.

Monica Neukomm:

Great. Thanks, Chris. And Erika, there are a few questions coming through -- I'm not going to read them separately -- just sort of asking about, well, what about this technology, are you considering this technology? Can you sort of speak to the mix of technologies and sort of where we are at this point?

Erika Gupta:

Certainly. As you mentioned, in the RFI, we're looking for projects that would include at least two DERs in addition to flexible loads. So any technology that would provide flexible loads. That includes thermal storage technologies, smart water heaters or load controllable water heater to HVAC, and anything related to that. Any technology that can provide you a flexible load, in addition with anything that's providing service as a DER, distributed energy resource. So that could be solar, the managed EV charging, you know, battery storage, all of those technologies are certainly within that definition. Do you think that answered the questions, Monica?

Monica Neukomm:

Yea, and I think if folks have a specific technology they think really should be included or called out, please, if you're able to spend the time to respond and include that in your RFI response, that's really helpful feedback, too.

David Nemtzow:

And this is David; as is a negative: If you think there's some technology that people are talking about and you think we'd be advised to not include, let us know that, too. So we're definitely looking for input on that set of issues.

Monica Neukomm:

OK. And here's another one, Erika: What is the measurement of added value actually mean, and how will it be evaluated?

Erika Gupta:

OK. That is a good question.

David Nemtzow:

It's almost a religious question, Erika. *(Laughter)*

Monica Neukomm:

I thought maybe it was a remark.

Chris Irwin:

This is Chris again. To a certain extent, that's why we have an important emphasis on the national coordinator role because we need to have a uniform measurement framework that not only accurately assesses value within a project, but between projects. That's where we get to agree and we get to establish what are the value streams, and are we properly recognizing value streams of building owners, of utilities, and of other parties who are essential in this kind of a process?

Erika Gupta:

Yea, and one of the things that I would say we are interested in showing are projects that when we're saying "added value," also provide greater value by being optimized as a community, as a group, than they would if you optimized to meet each individual building's needs separately.

Monica Neukomm:

And then, Erika, I've also seen a number of questions come through related to metrics, just asking about carbon reductions and criteria and metrics around that, and the interest for that as an aspect of this future funding opportunity.

Erika Gupta:

Certainly. We're always interested in the environmental benefits. That was mentioned earlier.

Monica Neukomm:

OK. And I'm not sure if you were going to get into this, Erika, in the future, but there was a question that came through asking about how the funds would actually be applied, what they could be used for, for capital, up-front investments, research, etcetera. Are you able to speak to that?

Erika Gupta:

We do not have that information in the RFI at this time, in the draft of the funding opportunity at this time. We do have a little bit on that later. So maybe we can circle back to that question.

David Nemtzow:

And when we do let's also talk about the cost-share issue that comes with the federal funding announcements.

Erika Gupta:

Starr, can you go to the next slide, please? There's more questions there. You'll see there's a definition of grid resilience here. So just knowing that we're also looking for feedback on our definition, if anyone has comments on that. While you think through that, we'll go to the next slide, where there are some more questions. The teaming question: If you have questions or comments related to what you think should be required in terms of teams, we'd love to hear from you on that. … Alright ... And then any feedback on the cybersecurity or privacy requirements ... any concern about the criteria that we've presented limiting emerging business models.

Monica Neukomm:

Erika, there were a few questions about if the projects can have a research component, or if these are just demonstration type of projects. You know, questions about the maturity level of technologies.

Erika Gupta:

As these are pilots, we do want projects that are able to showcase -- I'll say, newer technologies that really want to show that they work and that they can be economically viable, that they can be scaled. And what the different opportunities are regionally. So this is more of a demonstration than research. We are interested in doing research on the impact to occupants, research on the business models, on some of the interoperability challenges, but it is more focused as a pilot scale. And this will lead into the cost-share, as well, that we'll discuss later. Because it is a demonstration project, there is a standard requirement of 50-percent cost-share. We'll touch on that later and get your feedback on that requirement.

Alright. I don't see anything else coming in here, so let's go on to talk about the planned requirements in terms of data. Next slide, please. So we anticipate all these projects will be producing a lot of data. The projects will be required to collect data to demonstrate the ability of the pilot to reduce the loads, as well as shift and modulate loads and/or generate electricity. There would be a requirement to participate with a BTO-designated third party for measurement and verification, in order to measure the quantity and quality of the actual load changed energy services. It's anticipated that all buildings will be equipped in advance metering and infrastructure analytics and comparable infrastructure on the grid side. So we would expect the following types of data. Quantity and quality -- that's kilowatts, kilowatt-hours -- of the actual energy load and/or generation during the periods of interest. We'd be interested in the voltage and reactive power measurements and others as required to support those grid service value streams. Interested in understanding the building occupant benefits. The financial costs and benefits for both the building owners or occupants and the grid. We're also interested in key studies that include data trends, research questions and findings on the operational end, promising practices. We'd be asking the applicant, should we release this FOA, to explain their planned approach to measure,

collect and analyze data to demonstrate the ability of the pilot to reduce the load, as well as shift and modulate the load or generate energy. We have several questions related to these draft data requirements. Those are Questions 3.1 through 3.4.

And if you want to go to the next slide, we can talk through them, but we're looking for how can the pilots best consider and measure and document the energy and building impacts as well as the financial impacts? Are the proposed types of data for measurement and verification consistent with industry practice? If not, what additional data should we require? We want to know how feasible is it for the teams to collect the required data and share it at an aggregated level between project teams and publicly. And again, back to what are the privacy policies or cybersecurity standards and guidelines that we need to consider as part of this? And finally, we want to know what are the critical issues that need to be addressed to successfully evaluate, measure and verify the impacts of multiple DERs? So any feedback on these questions.

Monica Neukomm:

There's a question around, is there a specific metric for grid resilience, and how deep the analysis needs to go for the grid analysis eventually. And I'm guessing ... yea, OK.

Erika Gupta:

Chris, that one's yours.

Chris Irwin:

At this point we're not looking to answer that question explicitly. What we are looking for is how should we frame that within the FOA? Because obviously if a proposal claims to offer grid resilience but can't define it, then we're left with a measurement dilemma. And so at this point in the process since we're looking for what should we be putting into the funding opportunity announcement, what we're looking for is advice from grid operators, from folks who are involved in that area of the business, to help us define those requirements so that we actually get resilience at the end of the day. I think the other important thing to note is that a building is going to define resilience in its own selfish perspective, which is perfectly valid. The building is resilient if the building keeps providing its purpose. The grid's purpose is to provide energy to everybody, and so its definition of resilience is going to be slightly different. But right now, what we're saying is that we have some ideas on how to express that in a FOA, but we're looking for input from the community to make this the best that it can be.

Monica Neukomm:

Great. Thank-you, Chris. I think this is more of a comment, but for Section 3, are lessons learned from Oak Ridge with the Reynolds Landings project to help shape the EMV approaches for this?

Erika Gupta:

Yes, we're certainly taking lessons learned from all existing DOE projects that are of a similar scale. And we're very interested in getting additional feedback through the RFI, as well. But certainly we have had many discussions with all of our principal investigators on projects that have community scale work.

Monica Neukomm:

OK. And can you expand on the role of the third-party data measurement and verification? How are these entities chosen, and does that mean proposals would not include this capability?

Erika Gupta:

That is not something that has been decided yet. It is absolutely something we would love to get your feedback, on how that should be done and how much should be required of that role versus of the individual project teams.

Monica Neukomm:

OK, so I was just trying to read through ones that cover material that we haven't discussed …

Erika Gupta:

I can go to the …

David Nemtzow:

Monica? It's David. … It's not part of this, but there have been some earlier questions that overlap about proprietary technologies and where they are in the technology maturity spectrum. I don't know -- I think we've covered that, but just to underscore: Again, the answer is, tell us what you think, number one. Two, if you do an application, do what you think makes sense. But three, keep in mind in both those, this replicability, demonstrability, ability for these approaches to be used by others, is central to our goals here. So that's a factor. And more mature technologies obviously have appeal. It turns out that Southern Company and their partners in both Hoover, Alabama, and in Atlanta -- just about everything they used was procurable. They might have been advanced, like a heat pump water heater. But they were all procurable, with the exception of some sensors and controls. So again, that's not as of now a requirement, but that replicability is, so I hope you'll think of it that way, in terms of proprietary technologies, mature technologies, etcetera, etcetera.

Erika Gupta:

Thank-you. And the next slide really gets to some of the funding questions that were brought up earlier. We're envisioning four to six awards as of right now. Seven million dollars each. It's in the form of a cooperative agreement. Individual awards would be between 3 to 7 million, so I should say up to 7 million each. These as mentioned are demonstration projects. So the requirement would be a 50-percent cost-share. So the total project value would be between 6 and 14 million. We have a question related to that, Question 2.1: Is that a reasonable funding level to achieve the FOA objective? And is there a different amount that would be more appropriate? Are there things that we should consider given the current economic environment? Give us your feedback on the total cost of the project, as well as the cost-share requirement, particularly given the current situation. We also want to know about the period of performance. We're imagining these to be three- to five-year projects. Is that the right amount of time? If not, what would be more appropriate? Next slide. Any feedback you have on those two questions. We'll take that now, or any questions you might have.

Monica Neukomm:

Erika, there have been a number of questions on this, just generally, you know, what are allowable costs? What would be included within the 50-percent DOE cost-share? And what I heard you say was we don't have the answers for that and we're looking for feedback. Is that accurate, or do you want to add something to that?

Erika Gupta:

We do have some standard allowable / not allowable in all funding opportunities that we issue. So you can expect it would be standard, and we don't have a funding opportunity out at this time, so we can't answer that question for this FOA. But we could answer that question generally for FOAs. And that's something that we can include in more detail in the Q and A. I would actually need our legal team to review that prior to posting.

Monica Neukomm:

OK. But I think just given the number of questions, if people have specific comments on this, especially as Erika pointed out, just given our economic situation today, please do provide feedback on that.

Chris Irwin:

And Monica, this is Chris. There was one observation about the question of smart meters being allowable. And I think that the specific cases will be determined through the FOA and our standard federal regulations. However, we don't expect every utility to be perfectly prepared to embrace a connected community and that all of the investment falls on the connected community side and then the buildings. We know that there's going to be investments on both sides of the interface to make this a vibrant project. So I don't think we need to speak about specific pieces of equipment. But we do

anticipate investments in the hardware and the infrastructure of the project to occur on both sides of the interface.

Monica Neukomm:

And then there's just a comment here, or a question about -- I think this is related to the allowable cost: If this needs to be, the roles and responsibility of the national coordinator would come out of that, or if the national coordinator is going to be funded separately. Erika, can you speak to that?

Erika Gupta:

The national coordinator, because it is a national lab, would be funded separately. It would not come out of the FOA total. … There are other questions here ...

Monica Neukomm:

There's just a comment that just came through: 50-percent cost-share seems high; knowing what qualifies would help. FOA budget of approximately 7 million seems low for a large team spanning three to five years. Would the cost associated with a third-party data company be included?

Erika Gupta:

OK. That's good feedback.

Monica Neukomm:

And then there's another question here: Are universities also subject to 50 percent?

Erika Gupta:

We have not made those determinations yet, so if you think they should or should not, please provide that feedback through the RFI. Let's go to the next slide. We have just two more questions in the RFI that are general about the overall structure. And that is, we're just looking for your general feedback. Any thoughts you have on the draft funding opportunity announcement as we currently have it written in this RFI, please give us that feedback. Really, anything on the goals, the design, the requirements. Things about cost-share, about what should be allowable. Just any concerns you have about the structure. What technologies, what technology-readiness level. All of that. We want to hear your feedback. We want to know what you think. And give us your thoughts. … Monica, are there more questions coming in? We can take a few more questions and then I'm going to turn it over to Dale to talk

about the specifics on how to respond to the RFI and talk about our teaming partner list, which is to help potential applicants or teams, should this be issued.

David Nemtzow:

And while you're doing that, Monica (it's David), I'll just say, on 4.2, obviously that's an open-ended question. And sincere. Just keep in mind -- and look, I've been at both ends of this, as a respondent and as a government official – and just keep in mind, try to make your case as well as you can, of course, but try to make it tight. We will look at everything that you submit. We will consider it. We will discuss it internally among our team. But we expect a very large response. And so, the tighter you can make the point you're trying to make, and if you're trying to make a case or provide a report, please do. And that's great. But just know that it will be more helpful and it will go further if you can get to the point as efficiently as you can, please.

Monica Neukomm:

Great. And Erika, I don't see any new comments coming through. on this. So if folks -- continue to feel free to submit thoughts or questions, and then we can pause again after Dale is done to follow up on any thoughts, questions or feedback.

Erika Gupta:

Alright. Great. Let's go to the next slide. Dale, are you unmuted?

Dale Hoffmeyer:

Yes. Thanks, Erika. So we are interested in getting your feedback. That is the purpose of the RFI, is to solicit your feedback on what is included in the RFI, the content that Erika just went over. And the best way, as well as the only way, actually, is to submit electronically your comments to the email listed, CCPilotsRFI@ee.doe.gov. And our deadline for that is 5 p.m. Eastern time on May 12, 2020. And your responses must be provided as a Microsoft Word attachment to the email. No more than 10 pages in length, 12-point font, 1-inch margins. There have been some questions about what kind of information you might provide. There is a section on page 12 I believe, in the RFI, which talks about if you're providing proprietary information, we strongly advise not including information where your responses might be considered business-sensitive, proprietary or otherwise confidential. However, if you choose to submit that kind of business-sensitive proprietary information, it must be clearly and conspicuously marked as such in your response. And as Erika asked, please identify your answers or your comments in regard to the questions that she went over. And they're listed in the RFI. Why don't we go to the next slide, and I'll talk about the teaming partner list.

EERE is compiling what we call a teaming partner list. And this is to facilitate the widest possible participation for this anticipated FOA. And this is just a list where any organization who is interested in

can submit their information and be included on the list. One thing that the teaming partner list allows is for organizations that have expertise in a topic that's related to this FOA, and they wish to participate in possibly an application, but maybe they are not going to -- planning on submitting an application as a prime, for this FOA. So this would allow them to express their interest, or say, hey, I have this expertise; if anyone wants to contact us, that's fine. However, if someone is planning to submit an application and put together a team, you are welcome also to submit your information to this list. Putting your information on this list does not mean that you are planning to submit an application. It doesn't mean you have to submit an application. It's just a list that allows other organizations to contact you and to be able to see what types of expertise you might have that might be relevant to them putting together a team. Any organization that would like to be included on this list, you, again, submit that information to the teaming partner list email. It's a different email than responding to the RFI. This is CCPilotsTeamingList@hq.doe.gov. And put in the subject line, "Teaming partner information." And then in your email, include the information below: Organization name. And we ask, please include a generic organization contact email, not a personal email. That's like, say it's info@ your company name, or partneringwithus@ -- whatever you want to make up. But not a personal email. And this just has to do with some Privacy Act considerations we have to look out for. And a generic contact phone number, for where somebody can contact your organization. Your organization type. Area of technical expertise. And a brief description of capabilities. We've already had some people submit their information, so if you want to go online to EERE Exchange, and under this RFI, some of the documents that are listed -- one of them is the teaming partner list. And you can take a look to see what other people have already submitted, and how they submitted it, and that will give you some guidance on what to submit. But the information is listed right here at the bottom of the slide. So I'll turn it back over to Monica or Erika.

Monica Neukomm:

Yea. We had a few questions coming through throughout this call, sort of about process. One was, if someone has questions throughout, you know, when the RFI is open, who do they follow up with? I think you maybe just answered that, but if you could just emphasize what is the right ...

Dale Hoffmeyer:

Sure. You can send a question to the RFI, the CCPilotsRFI email address. You can send a question there, and then we will add it to the Q and A log. We did get a lot of questions from the previous webinar we had on April 3. And so we've added a lot of those questions as we've been able to respond to them in the Q and A log. And again, it's at the same place on EERE Exchange, underneath the RFI, and underneath the teaming partner list you can find a Q and A log. And I think we had, I think, at least 48 questions, many of the same questions we've heard today. Some of them, other people have posed, too. And you can take a look and see what the response is. I think David mentioned and Monica mentioned also, you know, we put out the RFI, we're asking for feedback. A lot of decisions haven't been made regarding this FOA. We put out a notice of intent that we are expecting to deliver this FOA, but there's no guarantee that it will happen or what the timeline is. So you can take a look at the notice of intent to see what that says. That's available on EERE Exchange, as well. And you can find the questions on the EERE Exchange. So it's the Q and A log. And there's a number of questions that we can't answer

at this time, because our answer will be in the FOA when and if we actually publish it. So at this point in time we're considering, and so your feedback is really valuable.

Monica Neukomm:

Great. And then there's a question if the responses to the RFI that are sent in and submitted, right, will be made public at any point in the future.

Dale Hoffmeyer:

No. We don't make those public. Any of the information that is obtained as a result of this RFI is intended to be used by the government on an non-(inaudible) basis for planning and strategy. So the RFI doesn't constitute formal solicitation of proposals or abstracts. So it's really -- the way we treat the responses is -- just information only. Yea, we don't post it.

Monica Neukomm:

OK, and then there continues to be a few questions if these slides will be made available. Dale just explained where we're posting all of the information, and the slides will be made there, and we will also send out a follow-up email that will include the slides and the link where you can get them. And also information on the webinar that will go through more material on our existing Connected Communities project, in particular the Reynolds Landing project that was mentioned several times today. There were a few questions about that, and so we'll save those for the future webinar. And I don't see any additional questions that have come through. I don't know if any of the other panelists have seen things that they want to make sure are highlighted, or discussed. Did you see any questions you want to call out, anyone else? I think we've been able to go through most of these as they've come through. … OK. I don't see any additional questions. I don't know, Erika, is there a final slide or anything we want to wrap up on here?

Erika Gupta:

No, I think we're good.

David Nemtzow:

Alright, well, nature abhors a vacuum, as do webinars.

Erika Gupta:

Sorry, to the last slide, though. This has the two email addresses that you really need, and the key information on the deadlines and planned release dates. So I think this would be the slide for me to turn it back over to David to wrap this up.

David Nemtzow:

Yea, I'll just say, if you look at this -- and you will have the slides, or you can do a screenshot right now -- is look, again, that so far that success of year one in the Alabama project -- and there are other projects around the country, but that's the one we have new data on, and we're going to have a webinar on that: 44 percent savings compared to even homes built to code on the savings side. And again, in large part not just due to investments in advanced efficiency technologies but the synergy, the optimizing across different technologies, got them to 44 percent versus new code. I just think that is very exciting and potentially very important. And 34 percent of peak demand: That's a system without a big duck belly at this time. So we think there's a lot here. And I hope if you spent two hours with us you do, too. So again, you heard it before but I'll just close saying, this is why the Department of Energy, the Secretary, has toured it, different offices, Electricity and Solar and Vehicles and Buildings and others are working on this because we think there's a lot of opportunity here for our nation's buildings future and energy, environmental, and economic future. So we hope you'll help us with this request for information as we think through this funding announcement. And obviously we hope you will be looking to participate in the actual project and looking for partners. Please stay in touch with us, and we will see you in the coming months as this moves forward. So thank you all. And thanks to the DOE team. Monica?

Monica Neukomm:

Thanks for your time. With that we will conclude this meeting. Bye, everyone.