Automated Voice:	The broadcast is now starting. All attendees are in listen only mode.
Monica Neukomm:	Hello, good afternoon. I'm Monica Neukomm with the U.S. Department of Energy, Better Buildings Initiative.

I'd like to welcome you to the June edition of the Better Buildings webinar series. In this series we will profile the best practices of Better Buildings Challenge Alliance and accelerators partners and other organization working to improve energy efficiency in buildings. Thank you for joining us today.

Today we're going to take a bit of a different approach and share the results of three successfully completed better building's accelerators.

Each of the presenters will highlight the tools that were created to support partners with their projects and we hope you will also find these helpful for your work.

One of my roles in the Better Buildings program is to coordinate across all the accelerators, so I've had the privilege of working with each of the presenters and will be providing information on the progress of their efforts today.

Let me introduce the presenters. The first presenter will be Alice Dasek and in her seven years with the U.S. Department of Energy Alice has held multiple roles as part of the partnerships and technical assistance team in the Board of Better Buildings.

From 2014 to 2016 Alice led an accelerator focus on energy savings performance contracting or as ESPCs in which she supported 25 state and local governments. Execute 2 billion of these ESPC contracts over three years.

She currently is managing another accelerator focusing on waste water and working with states and facilities in that effort.

Alice graduated cum laude from Bryn Mawr College and has master's degrees in business administration and environmental and energy management from the George Washington University.

We also had Andrew Burr speaking and he is a policy advisor here at the Department of Energy for the energy – for the office of energy efficiency and renewable energy.

Andrew co-leads DOE's Better Communities Alliance; a collaboration with local government leaders, businesses, and institutions to improve the prosperity of American communities through energy technologies and solutions.

Prior to DOE he launched and directed strategies for the City Energy Project; a 20 million energy efficiency initiative supporting major U.S. cities. Andrew has been quoted by national media, including the New York Times, USA Today, and Governing Magazine and has presented on U.S. clean energy policy in China and Europe.

Our third presenter is Crystal McDonald; a policy advisor in the weatherization and intergovernmental programs here at DOE. Her primary role is to identify, prioritize, and accelerate the adoption of policies and practices that transform markets targeted by state and local government initiatives.

Crystal supports strategies and programs that develop sustainable communities, install clean energy technologies, and reduce ___.

Currently she is the DOE lead working with the Better Building partners in the K-12 education sector and was also a lead for the outdoor lighting accelerator which she will speak about today.

Crystal has the masters of energy in environmental management from the George Washington University and a Bachelor's of Science and Architectural Engineering from North Carolina A&T State University.

A really great wealth of knowledge and really excited about hearing the updates they have to provide on the accelerators today.

Right now I went through and introduced the presenters and we have a lot of you on the phone today, over 100, so we don't have time to go through our introductions, but just to get a quick sense of who is participating in this webinar I'd like to go ahead and launch a whole – just if you could identify the category which best describes the sector you represent and we only have five options, so we have public sector, private sector, nonprofit academic sector, utility industry, or other.

I see the answers are coming in. Thank you for providing a quick response here. We'll give about five more seconds and then share the results. Okay, great. At this point I'm going to close poll.

It looks like majority of you are public sector at 52 percent, 20 percent from the private sector, about 17 percent from non-profit academic. A few of you from industry and then, sorry, a few of you from other that we weren't able to include in a category.

Before we start our presentation just want to remind you of a few items. One, you are all muted today because of the large number, but we really welcome your questions and feedback, so please, if you have any questions, go ahead and type them in the chat box throughout the sessions, or the presentations.

Today we're going to pause after each presentation because they're on different topics and will address questions for each of the presenters as we go along.

We'll also have a few other poles just to try to get your feedback as we move along.

Also just wanted to note that this session will be archived and posted to the web for your reference. With that I think we'll go ahead and get going. I'm going to start with a quick summary for the Better Buildings accelerators and then we'll move into the deep dive of the presentations and information on the three accelerators we're going to be talking about today.

If we could advance the slide and to the next one? There we go. Just a quick note about the Better Building's Initiative. DOE partners with leaders in the public and private sectors to make the nation's homes, commercial buildings and industrial plants more energy efficient by accelerating investment and sharing of successful best practices.

As you can see, I don't know, Brady, if you can go back to that slide before. In the puzzle graphic we have four different pillars for the Better Buildings program, market leadership, better information, workforce development and federal and community leadership.

As you can see over here in the box to the right the Better Buildings Accelerator fit under the market leadership because it's a partnership program where we're directly working with public, private sector partners to work through challenges.

To the next slide we can speak a little bit about the way the accelerators work. First just want to note that these are voluntary efforts. Really the purpose of the accelerators are to develop

collaborative peer to peer networks where we can share learning and provide, eventually, a framework to add some additional technical assistance from the Department of Energy and resources to help the partners we're working with work through some issues, or challenges, so that then they can accelerate their progress.

Each of the accelerators are issue specific; they are focused with a specific topic in mind and identified obstacles that we are working to overcome as a group. They are also time-bound.

We typically have these to be two to three-year timeframe, really we want to be very focused with the obstacles we're working to solve and then, at that point, we either – and effort or sort of transition it more to a longer term DOE program, or even an external stakeholder group and that's a better fit.

The just last these are definitely results driven efforts. Each of the partners that participate commit to goals with the accelerator as well as actively participating in the network and just telling again what I hear from partners; the thing that they find actually most beneficial from these efforts are the active participation from the other partners and hearing from their peers as well as the technical systems that Department of Energy can provide through this.

Then moving to the next slide; just a quick note here in our numbers. We used – we launched the accelerator platform in 2013 and this has proved to be really powerful way to work with partners. We now have over 20 – I'm sorry, 200 organizations participating in 13 accelerators.

Of those 13 accelerators, 4 are completed with comprehensive toolkits and you'll hear about 3 of those today and we have 9 active accelerators.

If we got to the next slide I'm going to just very quickly go through the nine active accelerators just in case you guys are interested, potentially, in participating in any of these. Most of these are still open to new partners.

Quickly we have the clean energy for low-income communities effort and this is working with city-states and community organization and utilities to develop programs to increase energy efficiency and solar installments in communities that have low to moderate income residents.

The next is the combined heat and power, or resiliency accelerator. In this effort we are working with communities and utilities who are designing resiliency plans and are looking to have different forms of distributive generation with, in particular, CHP and, perhaps, solar and storage to, basically, help keep their critical infrastructure up and running during external events.

In the data centers accelerator we are working to make data centers more efficient and the commitment there is a 25 percent reduction in one of the data centers by 2019. Our home energy information accelerator works with – is focused on residential sector and I think this is a really exciting one is working to hopefully make energy information available in the multiple listing systems. When you go to buy a house you can see energy information.

Another residential program is the home upgrade program and this is working with administrators of home energy upgrade programs to streamline systems to make it more cost effective and higher quality.

We move to the next slide. Alright, so four other ones here. Smart labs is working with labs across federal agencies, corporations, universities, national laboratories to, once again, increase the efficiency of laboratories.

The waste-water infrastructure accelerator is focusing on sustainable infrastructure for the future with waste water facilities and that is working with states who then are working with local agencies or facilities in their state and partners commit to 30 percent reduction and then we have energy efforts; one is focused on 0 energy districts and the idea there is really working across a set of buildings.

Maximized efficiency and then bringing renewable energy so you're essentially able to meet zero energy goals.

The last one is also zero energy focused; that's working with schools to develop zero energy designs to meet zero energy goals for schools.

We move to the next slide. These are the accelerators that are accomplished and I'm not going to go into those details, because that is what Alice and Andrew and Crystal will be doing a deep-dive on.

At this point before we start with Alice's presentation do have two questions related to ESPC's that I'm going to go ahead and launch upon.

The first question is "How would you describe your current involvement with ESPCs?" The options are, "Interest in learning more about ESPCs", "Just starting an ESPC project." "Interested in developing and expanding my ESPC program." Or "Not interested in ESPCs."

I'll give you a few seconds here to provide your feedback. Alright, seeing answers come in. Looks like we have a good majority of the responses, so I'm going to go ahead and close the poll at this point and show the results.

The majority of you, 70 percent, interested in learning more about ESPCs. A few of you have just started the ESPC project at 4 percent. Some of you are interested in developing or expanding your current program, 22 percent, and we have a few, 5 percent, not interested in ESPCs.

Alright, so that's good for Alice to know as she moves forward. We have, actually, one other set of questions here on ESPCs. For those that are interested in ESPCs you can describe what challenge you are most concerned about related to ESP implementation.

Identifying and selecting the right financing option, developing projects including selecting contractor, conducting measurement and verification, tracking results. Providing technical assistance for ESPC or marketing the results and benefits for ESPC.

This information will be really helpful, because Ellis actually, through her work, has, with the accelerator, developed great tools around all of these and she can highlight the tools that people were most interested in based on this response.

Okay we'll just – I see some responses still coming in. Let's give it five more seconds here and I'll close the poll. Okay.

The results were this and sort of pretty evenly split, it looks like, 32 percent interested in financing, 24 in developing projects, 22 percent in tracking results, about 20 percent interested in technical assistance and a few of you, 3 percent, in marketing results and benefits of ESPC.

Okay and with that I'd like to go ahead and turn this over to Alice.

Alice Dasek: Okay. Thank you very much, Monica. Good afternoon, everyone, and thank you so much for spending part of your afternoon with us today to hear about the great efforts of our state and local partners over the accelerators.

I am particularly excited, specifically, to talk about the ESPC accelerator where our state and local partners really, I would call them, the unsung heroes. They toiled over three years and really did some innovative and hard work to unlock the potential of energy savings performance contracting or ESPC to advance their retrofit projects.

Just quickly, to bring everyone on the same page, ESPC is a contracting and financing method that provides up front financing for energy efficiency projects that is then repaid by the savings on utility bills resulting from those upgrades.

DOE sees ESPC as a promising tool to enable your energy efficiency projects and under _____ began offering some regular assistance to expand access to ESPC.

Three years ago, then, with that in mind DOE launched a set of initiatives called the accelerators and specifically focused one of them on energy savings performance contracting. It's one of the first of the accelerators.

Next slide, please. And next one after that.

Today we will take a look, a quick look, at the accelerator. We need to move quickly through it and some of the work that the partners completed to resolve barriers to using ESPC and from there we'll move really quickly to the focus of today's discussion, which is a description of the actual toolkit that resulted from that hard work.

It's a collection of the barrier resolution that partners worked on during the three years that then were adapted and generalized to help other state and local governments implement ESPC.

Along the way we'll call out a few of the individual tools and then wrap up by sharing some of the trends that we saw coming out of the accelerator and how DOE plans to continue supporting ESPC into the future.

Next slide please. This accelerator, like many of the others that Monica pointed out is – was a three-year initiative. It launched in December 2013 and ran from January of 2014 until recently concluding at the end of 2016. There were 25 partners, and as you see on the slide here there were 18 states, 6 cities, and 1 school district.

The goal was, as I mentioned earlier, was really to enable ESPC investment and to enable as much access to ESPC as the partners wanted. The goal in the end was to enable investment of $2 billion and I'm very pleased to report that our partners exceeded even that ambitious goal; recording, in the end $2.1 billion in ESPC investment in the MUSH market.

Next slide please. Here I've just included a complete list of the partners for your reference. Next slide please.

In terms of the activities that the accelerator undertook you can take a look, at your leisure, at these areas listed here and the activities that were serving them. I wanted to draw your attention, particularly, to the final area, area three, resolving individual ESPC barriers.

Each partner elected one barrier to their ESPC investment to work on resolving over an 18-month period during the entire term of the accelerator and partners received customized peer exchanges. They participated in year-long series of discussion groups and then worked individually with DOE to complete individual barrier solutions.

The goal was really to support successful, permanent, innovative and replicable resolution of these individual barriers and so the solutions were intended to meet he immediate needs that partner expressed and then, also, adapt those solutions to help other state and local governments that face the same barriers.

Very often the barriers that were identified by the partners were common in the area of the ESPC for state and local governments.

The accelerator then adjusted the solution once the partner made it as unique and specific as possible and then the accelerator was able to adjust the solutions and the supporting resources to be universally applicable and then make them available to other public organizations in the form of this toolkit.

They really form the basis of what is now known as the toolkit combined with a few other significant resources or pieces that we have found to be helpful also to ESPC.

Next slide, please. Here and then, Britney, if you could call up the home page, please, I'd like to show everyone kind of a live shot of what it looks like.

When you go to the link that was listed on that slide you will see exactly the visual that was there and we will not be able to navigate through it with you today on the webinar just for time's sake, but I wanted everyone to see how it's divided into these sections.

Just a few words about that structure, because it's pretty important.

The other resources that DOE had around ESPC that were beyond the solutions coming out of the accelerator were combined with the resources that came out of the individual partner solutions and those two sets of resources were combined into one package.

Then to make navigation as intuitive as possible and help people locate those resources when they needed them the structure followed the decision making process that you follow when you decide whether and how to pursue and energy savings performance contract.

Thus you see the categories of when you're considering ESPC, then moving to the right when you're actually implementing a project. Then you move down to actually establishing a program to support ESPC of a regular component of your retrofit projects. Then you might look to expand to new markets with ESPC and then, finally, and very importantly, to evaluate the results of those projects.

Next slide, please. We'll go back to the slides. Thank you.

For a quick run through of the sections and then we'll take a stop at some of the individual tools and maybe I can incorporate with some of the responses that you provided. It looks like expanding program was probably the second highest, after learning more about ESPC, so we'll stop there a little bit later when we go to the third section and some of these others I'll bring up as they become relevant.

Here in the considering ESPC section we included resources that help users understand the general legislative and market conditions for ESPC and then, further, help them decide whether ESPC is the appropriate vehicle for their specific retrofit.

Next slide, please. The new tool that we're very happy to announce is a brief summary of the elements involved in an energy saving performance contract.

I apologize, it does look blurry when it's blown up to this size, but when you see the slides in real size, or go to the website, you'll be able to take a good, closer look at that.

We had to make the print pretty small to fit everything on one page. We wanted a handy-dandy kind of one-page reference sheet. That would summarize all of the elements involved in an energy savings performance contract in the process from the benefits of doing an ESPC project to what is actually required of you at every step of the way.

Then, importantly, we compared it to what is, probably, most familiar to actors in the public sector would be the standard kind of design, bid, build approach.

Then readers, or users, of this sheet can compare the details of implementing a project using ESPC versus designing – versus using, excuse me, design, bid, build and comparing the benefits of both projects to assess which approach is better suited for the project in question.

Next slide, please. The next section is implementing ESPC and that's helpful once you've actually made the decision to use ESPC for your project. It includes resources that support the specific steps in implementing a single project. Like selecting the Escrow or developing the ESPC contract.

Next slide, please. I'd like to pause at two of the tools in this section. This gets at one of the responses about 32 percent of you were interested in looking at the finance thing that is available for ESPC.

This new tool helps to identify what options are available and then, also, to understand what they involve when you're trying to use them in an energy savings performance contract.

By answering a series of questions that you see here on the screen you then arrive at the financing options that appear in the tool kit below the line that you see that says "financing".

The whole thing didn't fit here, but this is just to give you an idea of what it looks like.

By answering those questions, you then arrive at the options that meet the conditions in your particular jurisdiction.

Each of the options appears in an individual box, like you see here, and you can click into the individual boxes to see an explanation of the tool, exactly what it is, and then also some of the benefits and considerations that you should know about when deciding whether to use that financing option for your contract.

This arose from the barrier that you see listed here where several partners in the accelerator actually said, "Have we actually considered all financing options available to us?" They just wanted to make sure that they had covered all of their bases and understood what was available, what worked in their particular jurisdiction, and that they had not overlooked any particular option.

Next slide, please. This second tool in the implementing ESP section came out of a specific partner's request under the accelerator and as posed on this slide.

How can your jurisdiction offer technical assistance for ESPC with limited staff and budget resources?

This also goes back to one of the responses where more than 20 percent of you were saying that's something that you're interested in looking at expanding your ESPC program in your jurisdiction.

The idea here was with those limited resources how to overcome those limitations and so we decided that the best way to overcome both of those limitations at the same time was to take the general assistance services for an ESPC project online and then direct project owners to in-person consultations, something that would require a little more detail, a little more discussion, and to offer those in-person consultations at limited and very targeted points in the ESPC process. Therefore, you could cover everybody's needs at a more economical level.

The visual that you see on screen here is the front door, so to speak, of what has become known as the ESPC virtual technical assistant. Consider it your Siri of ESPC.

When you click into it you will see the ESPC process for a single project laid out in phases, in project phases, and then when you click into each, individual phase you are then taken to a step-by-step guide to carrying out the phase complete with links to other resources or documents that you might need while you implement that particular step in the process.

Next slide, please. Establishing ESPC is our next section and that really gets at how do you set up a technical assistance program; whether at the state level or some cities have decided to do the same thing to offer a set of tools, or services, that support your state or local organizations to help them in the jurisdiction utilize ESPC to move projects forward.

Next slide, please. In this section, too, I'd like to take a quick look at two of the resources. On this slide you see some of the components of what we call the ESPC networking toolkits. We developed this resource in response to the barrier that a partner in the accelerator expressed in the question that you see at the top of this slide.

That was, namely, "How do you establish ESPC as the standard project vehicle in our jurisdiction? Particularly given that leadership or staff changes and maybe more frequently than is possible to manage when you're talking about a long term contract like an ESPC?"

Similar to a job search we recommended that networking was really a good solution; much like in a job search when you really should keep your contacts informed of your progress at all times; not just when you need something, like a job.

The solution here was the same; that the solution to the barrier of keeping ESPC supported was that the same approach applied. The components here in this toolkit help you identify the stakeholders that are really critical to establishing that support network for ESPC and it also provides templates for messaging and communications that help you keep your network informed and to understand the potential of ESPC and, more importantly, the benefits to your state or city once projects are completed.

Regular communications with that network maintain that support over the long term even through staff changes and so it's a very important tool to build and maintain support or ESPC over the long term.

Next slide, please. The next tool was similar, but addressed a lightly different request and so I wanted to make sure to cover it in the same presentation and that is; it also is a toolkit with a set of components where, again, the issue was that there are not very many people; perhaps a low budget, but how do we then go about using ESPC and expanding the use of it to help our projects move forward and then help us really achieve our state energy savings goals, or in that city energy savings goals.

The tools here are, again, pieces that help you identify who champions could be across your network of – could be facilities directors or in the case of the partner that developed this it could be a set of folks that were already designated as the sustainability coordinators in various agencies.

Those folks can then form a network and by providing them with the tools that are available in this toolkit complete with a really detailed step-by-step process of how they can remember where they should be going and really becoming the advocates for ESPC within their agency.

That is also a very important tool for states or cities looking to expand the use of ESPC, because it requires a concentrated and long term effort of many folks and not just a limited set who sit in the central office.

Next slide, please. One of the last sections; expanding ESPC, is for those who are looking to really apply ESPC in a concerted effort to a specific sector.

Very often there are sectors that a state or a city can target to really help them unlock the potential of a particular sector and help them meet the saving's goals that jurisdiction has set.

To date we have the primer for K-12 schools and we have the guide for fleets and _____ infrastructure, which is kind of a nascent area. The ESPC guide for water resource recovery facilities is coming very soon and then the last – the implementation model that some of you may be familiar with from DOE talks about expanding ESPC to new markets and really talks about the process that was followed by several partners in the

	accelerator and provide some of their experience and insights from that experience.
	Next slide, please.
Monica Neukomm:	I was just doing a quick time check. I want to make sure we save time for questions and the other presenters, too.
Alice Dasek:	Oh, sure. I have two slides left. The last section is about assessing ESPC results, as I mention; a very important part of the contract process to make sure that you measure and verify the results that are coming out of your ESPC and then also very important to take those results and make sure to promote it and reinforce the value of the ESPC for stakeholders in the city or state.
	Next slide, please. This last slide really talks about from the experience in the accelerator working with these partners and then putting together the solutions to those common barriers, to using ESPC, is that the state and local ESPC market is healthy. There is a lot of growth there and there is still a lot of opportunity in the broader kind of MUSH market.
	There are, of course, still needs in the area of technical assistance and so these tools are a beginning to that. We will continue to hear from you, the stakeholders, as well as collaborate with stakeholder organizations to make sure that the toolkit remains a living, breathing component and that we will continue to expand it with resources as we hear the need and really expand it.
	Next slide, please. We are at the end. Thank you. Thank you so much for listening today and I really appreciate sharing this experience with you.
Monica Neukomm:	Great. Thanks so much, Alice. As Alice noted, this work build on the previous work that we did under the recovery act as well as active work under the state energy program and is just a great set, collection of information, so I think it can answer a lot of questions under ESPCs, so encourage you all to check out that website
	We're running a little bit short of time, so I think I'll look here to answer a question or two and then I'd like to move to Andrew. Let's see here; One question that's just come up, "You seem to be assuming that ESPC is the way to go and that the jurisdiction has decided to go that way. Could you go over the pros and cons of ESPC?"

That's a really long response, Alice.

Alice Dasek: Yeah, it's long, but I can answer briefly, which is we tried in structuring the toolkit to break it into two sections, which the considering ESPC is before you get to that point and then the resources and tools are really for implementing it once you decide that's what you're doing. That's why the other sections address the actual implementation.

Then for the plusses and minuses you can take a look at that ESPC versus design, bid, build, which is in the considering section.

Monica Neukomm: Okay, we'll take one other question and I see a few other ones that have come in and we will address those. Afterwards we'll _____ make sure your questions are answered.

"We've seen ESPC contracts that are borderline predatory. Any tools to encourage and help, especially smaller units, do technical reviews of these conducts to ensure quality, value and properly manage expectations to the unit of government?"

Alice Dasek: Yeah. The brief answer is there are probably two resources to start out with; one is encouraging – we always encourage best practices to have a project facilitator or a consultant that helps walk through that and does those technical assessments when you're looking at a contract. The second is to always be aware of your resources at energy services coalition. Then, of course, your state office if there is a program in your state.

Monica Neukomm: Okay, great. Thanks, Alice. Now we're going to shift direction a little bit and Andrew will share information from the energy data accelerator. Really quickly we're going to have a poll to get your input on that topic.

This question's pretty quick, "Have you had difficulty assessing the utility energy info to assess building energy efficiency or conduct an energy efficiency project?" No, yes, or I haven't needed that information.

Great. _____ results are coming in here pretty quick. We'll give another 10 seconds. Okay, I'm going to go ahead and close the poll and we'll share the results.

Looks like the majority of you, 50 percent, say yes, you've had some difficulty with this, some of you, 35 percent, say no and then another 15 haven't really needed that information to date.

With that I'd like to turn it over to Andrew.

Andrew Burr: Thanks, Monica, can you hear me alright?

Monica Neukomm: Yes.

Andrew Burr: And thanks, everyone, for joining. Go the next slide, Brit.

This is the energy data accelerator. We were, like Alice's accelerator, one of the first ones out of the gate and the first one to close.

Let me talk, for just a moment, about the problem that we were trying to solve. As many of you know real estate owners are measuring and benchmarking the energy performance of their buildings more than ever and, in many cases now, in 20 cities, states and counties there are requirements on industry to benchmark their facilities.

Part of what you need to do the benchmarking, to measure energy performance, is information from every energy meter in your building and this is sort of a counter-intuitive problem. You would think that real estate owners have access to that, but in many cases they don't.

In places where there are multiple tenants in buildings and multiple meters the real-estate owner often doesn't have a legal right to access that information.

Which means, practically speaking, that the owner has a couple options available if they want to benchmark; they need to go to every tenant individually and get them to provide that information; sometimes on a monthly basis. You can see how this becomes a problem when you have 20 or 30 tenants in an office building or hundreds of residents in a multi-family building or they need to go to their utility provider and get waver forms and get each tenant to sign a waiver form.

It's the same type of problem and it's been a very fundamental, structural problem to real estate understanding the basics about how their buildings are performing and then being able to do energy efficiency projects.

About 10 years ago we did start to see some utilities coming to the table with solutions; one of them is Commonwealth Eddison in

Chicagoland and what they did is work with their real estate industry to really streamline the process by which an owner with multiple tenants and multiple meets could access that information without having to go to every tenant, or without having to go to the utility to get wavers for each tenant.

What you see on the screen are accelerator partners, so what we set out to do was work nationwide with 21 sets of utility city partners to, one, look at the models that had been out there with Commet, in Chicago, with National Grid, in New York City, with the Puget Sounds energy in Seattle, with Pepco here in Washington DC.

Look at the models that some of the utilities have put out there and then work with other utilities and cities and other stakeholders so that when it gets to this type of solution where there may need to be some evolution to these models.

Next slide, Brit. This was a two-year accelerator. We started in 2014 and ended at the very beginning of 2016. This is our closeout event on the White house campus. It was a terrific event. We had partners and utility cities and others from all over the country.

Next slide, Brit. We made several announcements there. This was a really, really successful accelerator. At the end of it 18 of the 21 utilities that we were working with had either put in place a data access solution, or had committed to do so by this year and that covers 2.6 million commercial customers.

We published a really thorough and readable that I'll go over briefly. We worked with the environmental protection agency and their energy star buildings program. They created a category coming out of this accelerator to reward data innovation and, specifically, data access innovation.

That first reward, I think a couple months ago, went to the City of Seattle with major contributions by their two utilities; Seattle City Light and Puget Sound Energy.

Then, finally, since our accelerator was ending we worked with disorganizations who committed to continue progress, continue working with real estate, with municipalities and utilities.

They're the American Council for an Energy Efficient Economy, the Institute for Market Transformation, the National Multi-Family Housing Council, Natural Resources Defense Council, the Urban Sustainability Directors Network, which has about – works with

150 North American cities and then the U.S. _____ Building Council.

Next slide, Brit. Briefly, to go over the toolkit; some of this is very technical, so I would encourage anybody who's interested to go to the accelerator webpage and take a look at this stuff.

We had several different audiences that we were developing toolkit product for, so in brief; the best practices for developing utility whole building data access solution is a resource for utilities; it takes the best practices by utilities that have gone through this process. It looks at what a utility needs to think about on the IT side, on the cost side.

In terms of its customer information systems and then in terms of building a bridge to the EPA's energy star product

The second product here, the Stakeholder Engagement Guide, is mostly for municipalities. What we saw work was cities in a convening role working with stakeholders from their – from local nonprofits, from local foundations in some cases, from the real-estate industry and then also working with their utilities.

It really worked when all of these parties were at the table and, frankly, it didn't work, or we didn't see it work, when there wasn't a kind of strong coalition led by a city.

The third is a guide to data access and utility customer confidentiality. Confidentiality is a big issue for utilities in that, essentially, they're being asked to provide information to a building owner, which is, technically, a third-party to tenant information.

The confidentiality; it's just been a very significant issue. We use this first resource to document best practices and, Brit, if you can go to the next slide. We also worked with our Pacific Northwest National Laboratory to do a statistical analysis. When a utility starts to wrap up individual meters; to aggregate them and send them as a lump number to building owners; how does that impact the quality of information? How does that impact the confidentiality of individual tenant information?

We went through in a very thorough way; we worked with, I think, six utilities across the country and something like 120,000 different customer accounts to do a very scientific study on this.

Then last is beyond benchmarking. I'll talk a little bit more about this. This resource is a discussion on how data access programs can create value for utilities beyond just sort of doing it as a favor to their customers or this or that.

Next slide, Brit. Then to continue that thought; a couple take-aways from the accelerator. Solutions are out there, there are a number of utilities that had come up with solutions before our accelerator and that number grew significantly post accelerator.

That said there are still a lot of challenges and there's still not, I think, a real, clear pathway to scale this given that 18 or 20 utilities have done this cross-country and there are something like 3000 utility providers nationwide.

The third thing, and I did mention this, progress requires local support. Again, we saw solutions where the community was involved. In places where the community wasn't involved. We did not see interests on the part of utility and we didn't see a whole lot of progress.

Then the fourth is this value question for utilities in that, as a utility, often they look at a data access program and they see potential liability. They see potential customer confidentiality issues. They see potential costs and they don't see real value in it for them.

This is an area that I think as the Department of Energy we would like to see industry and non-profits really take a look at, because it is something that needs to be addressed if this scales.

Next slide, Brit. Then just to close on a related note on some other data work that we have going on at DOE on the city side; our Office of Strategic Programs has had a program running for a little over a year now called Cities Leading through Energy Analysis and Planning. The acronym is C-Leap, CLEAP.

The intention there is to really provide some data analysis capability to cities; there are four things that this program is doing. You can Google CLEAP and bring us up in more detail. It provided a little more than $1 million in grants. I think principally to 3 municipal recipients to do some deep-dive data analysis work related to energy efficiency. That was last year.

It's created a database that's publicly accessible called SLED that stands for State and Local Energy Database that brings together a

whole bunch of federal, regional, national data sets and enables a city to search by city name or zip code and pull up a whole lot of energy information estimates city wide.

This could be transportation sector, this could be building sector, this could be for renewables. It's really a terrific resource.

The third is CLEAP is providing some technical assistance through our national renewable energy lab to a broader set of cities to work on some lower touch energy data analysis issues and the fourth is that it's now merging in really sophisticated real estate data from a company called Costar, that provides this type of information to real-estate markets to help cities that are interested in benchmarking programs and potentially benchmarking requirements.

Get a better handle on its local building stock; how many buildings it has above and below a certain size, what those building uses are, information that has been very hard for municipalities to come by in the past.

I'll stop there and take some questions if we have time and thank you all very much.

Monica Neukomm: Great. Thank you, Andrew. If folks want to type in questions, I don't see any right now, but if you do have some questions go ahead and type those in and we can take one or two before we move on to the next accelerator topic.

I would just reiterate what Andrew said: This was a very successful effort and we found solutions for the partners we were working with, but as Andrew also noted there is a lot of work that needs to be done in this space and so I think one of the great outcomes of this accelerator was the partnerships you mentioned with the six organizations who are still carrying this work forward.

For the sake of time I think we're going to go ahead and move to Crystal's presentation, but if you have questions please go ahead and type those in and we can get them at the end.

With that I'd like to, well, we have one last set of polls here around outdoor lighting that I am going to try to launch here.

Actually, unfortunately, I don't see those coming up, so, Crystal, we're a little bit short on time, so I think I'll just go ahead and turn this over to you for you to start your presentation.

Crystal McDonald:　　Okay, thank you. That's fine, Monica. Thank you, again, everyone for sticking around with us. As you can tell we have a rich body of work to share with you, as indicated by the previous presenters.

I will try to move through the slides for the outdoor lighting accelerator toolkit pretty quickly given our time here.

The way the slides are organized are – we will talk a little bit about the accelerator profile itself, the partners who helped us to achieve the accelerator outcomes, and then the key focus areas to remove or mitigate barriers. Some of our successes, the toolkit and how it is organized and then, of course, we'll take a quick look inside and then some of the ongoing support and actions around street lighting retrofit projects.

Brit, you can move on, please. Thank you. The outdoor lighting accelerator was launched in May of 2014 and we actually extended it by an additional 6 months and conclude at the accelerator in December of 2016.

We work to help state and local governments move closer to achieving their clean energy economy using high performance technologies that reduce the cost of an essential public service, which is street lighting.

The purpose was to collaborate with state and local governments to curate best practices and resources that could be replicated and to help municipalities scale up their system-wide replacement projects.

Next slide, please. Here you have a view of the partners, our participating partners. We work with 3 states, 6 regional energy networks, 16 cities and these partners were very transparent and candid about their retrofit experiences.

While we did set a goal to commit 1.5 million lights we got very close to a commitment of 1.3 million lights to be retrofitted. These partners adjusted the scope of their project and lighting commitments due to the barriers I'll cover today.

We do know that the ultra-lighting accelerating inspired other cities and states to action given some recent press release on broad scale projects.

Next slide, please. While LED street light technology was gaining greater acceptance in some regions across the country the market conceptions and barriers still presented local governments from taking full advantage of the energy savings and cost benefits of LED upgrades, primarily.

Local governments, as we know, are under tight fiscal constraints and they are constantly looking for ways to do more with fewer resources.

With the street lighting costs accounting for up to 60 percent of a municipalities electric bill coupled with technology improvements LEDs were a way to offer some fiscal relief for these communities and we were wondering why more communities weren't doing more with their street lighting, because street lighting is often considered low-hanging fruit in pursuit of energy goals and, of course, cost savings, but it was still difficult to achieve these retrofits in some areas due to street light ownership and maintenance costs, which is the starting point for assessing your retrofit opportunities.

Then, of course, the capital costs for upgrades; money is always an issue. The perception of the risk with new technologies and then, finally, in the regulatory space we looked at utility tariffs and the outdated tariffs that didn't, necessarily, incentivize efficiency.

There were other things like connection fees and unmetered service that prevented some cities from moving forward with their projects.

Next slide, please. After working with these cities and states and regional networks – I appreciate the regional networks, because they acted as an aggregator and advocacy group for the smaller communities. That was very insightful for us.

We did have quite a few successes here with the outdoor lighting accelerator again we garnered the commitment of $1.3 million lights to be retrofitted and then we did make the strategic case for LED street lighting due to partners sharing their data and lessons learned.

We estimated the value of electricity saved to be about $48 million per year and that is just with our participating partners, which only represented about less than 1 percent of the street lighting market here in the U.S.

We also developed user friendly resources to assess energy and cost savings opportunities. We worked with our technical partners to update the equipment specifications and then we opened the

conversation with utility commissions around the country to understand the conditions slowing the removal of tariff related barriers to scaling up projects.

Next slide. This is just a snapshot of the toolkit landing page, so once you get there you'll know you're in the right place. I'll take a little bit of time to talk about the resources and how they are grouped.

Next slide. Okay, so the resources are grouped by the barrier and the solution designed to address that particular barrier.

For example, here we have the financial bucket I'll call it. These resources were designed to address the obstacles that we list here. There was a need for a quick assessment, a quick kind of economic feasibility, of whether or not to move forward with the street lighting project. There is a need for procurement strategies and then partner information to compare price ranges for technologies, because as a technologies improve we did see a declining cost curve for LED street lights.

Again, partners were very transparent about sharing their cost data with us, so we appreciate that. These are just a few resources; this is not a comprehensive list that I have here for the financial category.

Next slide, please. Some of the obstacles, as I mentioned before, in the regulatory space was around understanding the LED tariff offerings and the rate making process.

Rate making process: Typically, a utility rate case may come up every five years, but with the advancement of technology we were looking at examples of whether or not there were some shorter rate cycles, like could a rate case come up every – within a two years period, or a three-year period, to advance technology and to address technology advancements.

We do have some _____ around that space. Discussing it from the perspective of the municipality as well as the perspective of the utility.

Then we wanted to look at the buy-back options. I mentioned street light ownership being an issue and some communities we're looking at purchasing their street lights or maintaining or allowing the utility to maintain ownership or a mixed bag.

We looked at developing a cost comparison tool, so the more we work with Lawrence Berkley lab to develop the tool and that will be posted very soon.

Next slide, please. Then the finally category around a barrier area was around technology and understanding the technology.

We developed some resources to sort of distill the technology. There was an issue with technology standardization; how to include controls for connected lighting systems and then, of course, we had the health and environmental concerns that came up last summer and so our technical experts quickly addressed that.

Some of the information we were able to curate existing resources from. The Pacific Northwest National lab has a large party of work around that and then we also requested that some other resources be developed to address the hot topic of the day. For example, the lessons learned from outdoor connected lighting systems installation.

That discusses the value proposition of control and I think we have about 12 city examples in that particular webinar, which is archived on the website.

Then we've provided some blue light guidance around the blue light issues related to dark skies and some people may call it lighting pollution, etcetera.

All of that information has been compiled and places a technical category of the tool kit. Next slide, please.

This is just a quick inside look of a few of the pages. I'm especially proud of the partner profiles. As I mentioned they were very transparent with us and so we tried to capture a synopsis of their experiences and then we also did hyperlinks to any resources or media that is related to their particular project.

Then we looked at the general concerns and tried to categorize their experiences, so if you are interested in a retrofit project you can look at the page that says, "This is how they did it." Pathways to energy savings with street lights.

You can look at the scenario, see if you identify with the scenario, and then there's a corresponding link to the partner's profile that went through a similar experience.

We do have quite a few reports. I've listed two reports here developed by DOE staff, but we also work with our regional energy efficiency organizations, our partners there, to develop more localized resources.

We have issue briefs, cloth comparison tools, updated model specifications for LED roadway luminaires.

I also mentioned that the webinars and then additional projects created by our other stakeholder and partner groups.

Next slide, please. One of the more popular tools on the toolkit is the outdoor lighting decision tree tool. This is where we curated existing resources from partners and stakeholder groups and then we also created new resources where there were gaps in information and this is, essentially, an interactive visual representation of the decisions that need to be made when you're upgrading your public outdoor lighting system.

It follows a typical project lifecycle for a streetlight retrofit project, and so you can take a path depending on where you are in the process and click on the decision node; the square box there, which is populated with a lot of the resources that I just referenced.

Next slide. Our ongoing support around this issue will be continuing under the municipal solid-state street lighting consortium that is still active. You can go to the consortium's web page for more enrollment information and contact information on the energy.gov website or you can just contact me directly and I'll put you directly in touch with the streetlight consortium staff.

Next slide, please. Just wanted to capture some next steps and opportunities around outdoor lighting to let you know we're not dropping the ball on this issue just because the accelerator has been completed, but we are continuing to monitor progress, communicate the benefits, and then we're continuing to collaborate with our partners and stakeholders groups to promote successful opportunities and replicable solutions for other cities to follow.

Next slide. Wanted to be sure to include links to the different portals that we have available with a lot of, like I said, rich resources on street lighting and other outdoor lighting applications along with my direct contact information should you have any particular questions.

I think I did that in record time, so with that I'm going to hand the mic back over to Monica and, again, I thank you for your time today.

Monica Neukomm:	Than you so much, Crystal. Sorry for cutting you a little bit short there on time. I just wanted to note; as Crystal mentioned that the outdoor lighting decision tree has actually been consistently all through 2016 one of the top tools on the DOE Better Building _____ Center, so definitely encourage you to check out that resources as well as the rest of the toolkit.
	We are running a little bit late on time here. I apologize for that. If folks are able to stay on I think we will go through a few questions now and then we'll conclude this webinar. I think I'm going to just pull up here two or three questions and then we will commit to getting back to those who we weren't able to answer questions, or you can directly e-mail the presenters as well.
	Here is a question for Andrew around the CLEAP information he provided: "With the CLEAP and _____ technical assistance regarding area building stock work with the county?"
Andrew Burr:	My understanding is yes.
Monica Neukomm:	Great. "There's a clear distinction between the internal government operations and the broader community facing work to drive energy consumption and emissions reduction." I guess this is just a note and then it's followed up here with a question.
	Does the _____ that's available help internationalize and, or bridge a city's interest in driving both its internal and community facing energy-related goals.
	Do you know the answer to that, Andrew?
Andrew Burr:	I think there's flexibility to meet data analysis needs for a community, so that could be government or municipal or county operations, or it could be community energy planning.
Monica Neukomm:	Okay. Then, Andrew, your last question, "Do you know if the resources and energy data toolkit translate to affordable multi-family housing provider?"
Andrew Burr:	I don't quite know how to answer. I think yes, with the exception of maybe federally subsidized housing. It depends on what's meant by "affordable housing". HUD, Housing and Urban Development, pays energy costs for the federal subsidized portfolio. It works a little bit differently there.

Monica Neukomm: Yeah and wasn't HUD a partner, actually, with and actively engaged in a lot of your work with the energy data toolkit?

Andrew Burr: Yes. HUD has been very interested in this to reduce the federal energy expense; which runs into the billions for the subsidized portfolio.

Former secretary Castro wrote a letter to several hundred CEOs in Invest your own utilities. This was before he left office asking if there was a way for HUD to work with those utilities to help provide more information to HUD that would enable it to reduce some of those costs.

At least under prior leadership this was an issue, a big issue, for HUD.

Monica Neukomm: Okay, great. Less, I hope that addresses your question. Then the last question we'll take is actually for Crystal.

Crystal, do you know the overall potential for outdoor lighting? As you noted; many think the market is saturated. Any thoughts on that?

Crystal McDonald: The Pacific Northwest National Labs did an inventory they were actually, I think, a completely part two of that inventory to do a national inventory on street lighting.

I think we're somewhere around 40-45 million street lights in the U.S. I don't have that number in front of me and I think we're far from being saturated just based on our experiences and conversations with partners for the accelerator.

In talking to other municipalities that are not, necessarily, partners in the accelerator. Yeah, I think there's still a huge market potential out there.

Monica Neukomm: Okay, great. With that I think just because we are running over we'll go ahead and move to the last site here. If you have any additional questions please feel free to follow up directly with – to the presenters.

We have here a link to the tool kits; I hope you guys are able to visit those. If you switch to the next slide, Brit, I think we have just a note here that we'll have our next webinar July 27 from 2:00 to 3:00 PM. The focus will be on wireless technology and how the company Mayzon, met the specifications set forth by the low-cost wireless metering challenge.

Please join us for that if you are able to. I think we'll end, Brit, with the list of our panelists for people to follow up with.

Just want to thank Alice, Andrew and Crystal very much for taking the time to share this information with us today. Please feel free to directly contact them, or you can directly contact me if you're interested in any of the other accelerators we weren't able to talk about today.

I will close with the fact that you will receive an e-mail notice with the archive of this session, so with the slides and the recording once its' available online. Thanks again and for sticking around here 10 minutes late; thank you for your time and have a great afternoon.

[End of Audio]