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Timothy Unruh: Hello. I'm Timothy Unruh, Program Manager for the Department of Energy's Federal Energy Management Program. Welcome to First Thursday Seminars. Now in its second year, this series provides you, the Federal energy and environmental professional, with current information on critical topics that you have identified and requested. We encourage you to continue to provide us with this important feedback through the evaluation at the end of this program.

This year, First Thursday Seminars will offer training on alternative financing investments through public-private partnerships and public benefit funds, the generation and deployment of renewable energy, alternative fuel vehicles and fleet infrastructure development, procurement of energy-efficient products and the design, operation and maintenance of sustainable high performance buildings. These practices demonstrate Federal leadership in sustainability, lessen dependence on foreign oil, reduce greenhouse gas emissions, and save taxpayer dollars. They are critical to meeting the important mandates of Executive Order 13514. We hope these programs help you reach your energy, water, and greenhouse gas reduction targets.

While we present several of the most important topics, no single one is a standalone solution. Only through an integrated, whole systems approach, can we meet our executive order mandates. Visit the FEMP website at any time to view an archive of previous First Thursday Seminars and to find additional resources, technical assistance, and guidance to help your agency meet its mission critical goals. Enjoy the seminar and thanks for joining us.

Kathy Hyland: Hello. Welcome to the Federal Energy Management Program's First Thursday Seminars. I'm Kathy Hyland, and I will be your moderator today. This is the third course in the series, and we'll focus on utility energy service contracts, or UESCs, and energy project incentive funds. If you have not already printed a copy of the learner guide and handouts, you may do so now. You can do that by accessing the website on your screen, www.femp.energy.gov/firstthursday. You can also print them out after the seminar. The materials and a video archive of this presentation will be available 24/7.

Now let me cover the objectives for our training today. It is our hope that, after completing this training, you will be able to: for UESCs, explain the purpose and benefits of a UESC; explore how a UESC might be helpful to address your site's specific needs; explain the purpose and use of an areawide contract, or an AWC; discuss UESC contracting options; discuss a three-step process for implementing a UESC project; list some FEMP resources available to support you; and, for energy and project incentive funds, recognize the different types of energy project incentive funds; identify when, why, and how Federal agencies can take advantage of these funds; understand national trends in the funds and what's driving them; use FEMP's website to locate which energy project incentive fund is available for your facilities; and, finally, leverage these funds to enhance existing – and stimulate new – energy projects at those facilities.

Our format today is simple. There'll be a presentation, followed by a question-and-answer session, and we really encourage your questions. From time to time, on your screen you will see an e-mail address, a fax number, and a phone number so you can pose your questions. If you'd like to speak to the instructors live, you can phone in your questions and someone will speak with you directly. We really encourage you to do that.

There will be two instructors today: Julia Kelley and Phil Coleman. Julia is our first presenter, so let me introduce Julia. Julia Kelley is a group leader for the Residential, Commercial, and Industrial Energy Efficiency Group at Oak Ridge National Laboratory, where she has worked since 1991. Julia has more than 14 years of experience in utility demand-side management, and serves on FEMP's Federal Utility Partnership Working Group steering committee. Ms. Kelley has provided professional support to FEMP since 1996, especially in the utility program area.

We also have with us, live from Washington, D.C., at the Department of Energy, David McAndrew. I will introduce David further to you in the broadcast.

So without further ado, let me turn the presentation over to Julia Kelley.

Julia Kelley: Thank you, Kathy. It's a pleasure to have the opportunity to speak with you today about utility energy service contracts. We have a simple agenda set up to go through with you on utility energy service contracts. We're going to cover the basics and background information about UESCs. Then we'll take a look at the authorizing legislation that enables Federal agencies to use utility energy service contracts. We'll take a look at the mechanisms you have to place contracts that are utility energy service contracts. We'll go through the steps in the UESC process. And then we'll conclude with pointing you to some additional FEMP resources available to help you implement UESCs at your site.

So let's first take a look at some UESC basics, including the purpose of UESCs and their benefits. There's nothing more basic than starting with a definition. And the definition of a utility energy service contract is a contracting vehicle that allows companies to partner with their Federal customers, and provide those customers with comprehensive energy and water efficiency improvements and demand-reduction services. So it's really a way of establishing a partnership between a Federal agency customer and their serving utility.

With a utility energy service contract, the utility may front the capital cost for energy efficiency improvements at the Federal site. They will assess the opportunities with the Federal site for energy and water efficiency improvements. They'll design and implement the accepted energy conservation measures, get those measures installed at the Federal site. Then the agency, if using regular appropriations to fund the project, pays the utility company back right at project acceptance with those appropriations dollars. If the utility is providing financing for the project, the agency pays the utility company back over time from the energy cost savings achieved as a result of the installation of the energy conservation measures. And that is how a utility energy service contract is a way for Federal agencies to get projects in place when they don't necessarily have project dollars in their pocket to pay for those measures.

What are some of the other benefits of utility energy service contracts for the Federal customer? This is one of the tools that you have in your toolkit to help you meet agency-directed demands and also legislative-driven mandates related to energy efficiency improvements, water efficiency improvements, and other mandates that you must achieve. This is a way to use energy more wisely at your facility, and a tool to help you reduce your operating costs.

If you're wondering whether Federal agencies are using the UESC tool, the answer is yes. All the information on this chart is voluntarily provided to FEMP. So we believe the actual investment in Federal-sector UESCs could be much higher than what's shown here. But this is what's documented today: a total capital investment through January of 2011 of over $2.3 billion in UESC projects in the Federal sector, with $1.7 billion of that coming from private-sector investment – that's where the utilities are financing the projects – and another $581 million coming from the Federal sector – that's where the Federal agencies are using appropriations to fund their UESCs.

Let's talk a little bit more about using UESCs to meet Federal mandates just from executive orders and EISA 2007. These recent legislations call for Federal facility energy use per square foot to be reduced by 3 percent per year, between 2006 and 2015, relative to a 2003 baseline, and that brings you to a 30 percent reduction by the end of 2015. They also call for increases in the use of renewable energy technologies, including implementing renewables on agency property for agency use where feasible. In addition, EISA 2007 calls for a reduction in water use by 2 percent per year, between 2008 and 2015, and that gets you to a 16 percent reduction by the end of 2015. Of course, other Federal mandates pertain to the reduction in greenhouse gas emissions at Federal sites, the use of solar water heaters, energy auditing requirements, and much more. These challenging mandates lead Federal facility managers and energy managers to turn to different tools, like utility energy service contracts, to help them make these improvements.

So what can you do with a utility energy service contract? You can certainly achieve your energy efficiency goals. You can use it to reduce energy demand, install some high-efficiency equipment

at your site, install energy control systems, and even projects like retro-commissioning your facilities. You can also use it to achieve your water efficiency goals, like installing water efficiency measures and the control systems that go along with those measures, so that you're reducing your water demand at your site.

In addition, what else can you do with a UESC? You can use a UESC to implement renewable energy projects at your site, including on-site renewable energy generation, installing solar parking structures, installing wind projects at your site, and including cogeneration systems.

That was just a quick look at some background information on UESCs and how you might use them to help address Federal mandates for facilities. Let's take a look next at the authorizing legislation behind UESCs.

There are a couple of key pieces of UESC authorizing legislation. One is found in the Energy Policy Act of 1992, which was codified as 42 U.S. Code 8256. And then the others, for the Department of Defense, are 10 U.S. Code 2913 and also 2866. So let's take a closer look at both of those.

For civilian agencies, codified as 42 USC 8256, Section 546(c) pertains to utility incentive programs. This is where civilian agencies are authorized and encouraged to participate in utility programs that are generally available to the major customers of that utility company. It allows you as a civilian agency representative to accept utility financial incentives, goods, and services that are generally available to that utility company's customers, and actually encourages Federal agencies to enter into these types of partnerships with their utility provider so that they have this as a tool to address the unique needs of your facility.

Now, following along with that, there's 10 USC 2913. That is for the Department of Defense agencies, and if you look at Section 546(c), that has to do with utility incentive programs. The language there is very similar to the language that encourages civilian agencies, and it just simply states that these Department of Defense agencies are encouraged to participate in gas or electric utility programs for the management of energy demand or for energy conservation purposes. And it allows Department of Defense agencies to set up these types of partnerships with their serving utility company.

Now, also in the Department of Defense, there's 10 USC 2866, a special water conservation authority for the Department of Defense. This specifies the authority for water conservation, and it enables individual sites to retain half of their savings for water conservation projects implemented at that site. This does not mean, however, that only Department of Defense agencies can do water efficiency improvements with UESCs. Actually, all Federal agencies can do that. You can use UESCs to do energy efficiency improvements, water efficiency improvements, and renewables.

So that was a look at the authorizing legislation that enables Federal agencies to use utility energy service contracts. But let's also take a look at the UESC contracting mechanisms. How do these contracts actually work? How do you put them in place for a project at your site?

Many of you are already familiar with FAR Part 41 and with the purchasing of utility services under the General Services Administration, or GSA, areawide. Typical utility services include, of course, electricity, natural gas, water, steam, and others as shown at the bottom of this chart. A UESC, however, is not a utility service, but it's still available to Federal agencies through the use of GSA areawide contracts. So let's take a closer look at this.

A UESC is actually an agreement for energy management services. A utility energy management service is the furnishing of energy management services or demand management for the purpose of load management. With the authority found in those U.S. codes that we've already talked about, utility energy management services, including comprehensive projects with financing as an option, can be purchased under a GSA areawide. That's what UESCs are all about, and that's found in the lower right-hand corner of this chart. Those comprehensive projects with financing as an option are what UESCs really consist of.

So how does this work? How do you actually go about using a GSA areawide for your UESC project? First of all, the General Services Administration has worked with different utilities across the country, and they have placed with these utilities that were interested areawide contracts. Once a utility has that areawide contract in place with the General Services Administration, that gives them the ability to provide utility energy services to all the Federal customers in their service territory. So under that areawide contract, any agency that is served by that utility can partner with that utility. They can work together to develop a master agreement, with specific contract terms and conditions for their needs under the areawide contract. And then, under that master agreement, they place individual task orders for the different phases of the utility energy service contract project.

Let's take a look at this a little bit more closely. The Energy Management Services Authorization (EMSA) is the agreement document that is used with the GSA areawide. This agreement outlines the nature of those services, their cost estimates, account data, energy conservation measures you select, and other items. And that's signed off on by the agency and the utility company involved.

Now, what are you supposed to do if your utility company and the General Services Administration don't have an areawide contract in place with each other? You can still work with that serving utility company and do a utility energy service contract. What you would do is place a separate contract or master agreement directly with your serving utility company. Within that, you'll have the contract terms and the conditions that you need for your UESC. And under that, you place UESC task orders for the individual phases of the UESC project. This mechanism has been done with much success across the country, so you don't need to be concerned if your particular utility doesn't have a GSA areawide in place. One example is at Fort Knox, where they have installed, over time, millions of dollars of project investment at that site, with their serving utility company, with a separate contract, no areawide contract.

Just taking a closer look at these UESC projects, a UESC is a service type contract, as we've said. Within that agreement, there can be technical services and financial services in a mix to meet your needs. Some of the technical services end up looking a lot like some of the steps involved in developing UESCs, like energy audits, feasibility studies, engineering and design, and construction. Others look a lot like services that you might want to consider as part of your UESC as optional services, like training for your in-house staff or operations and maintenance services.

And then there's performance guarantees. Utility energy service contracts are service contracts, not performance contracts, so they don't typically have performance guarantees. However, with some utility companies, you can negotiate a performance guarantee as part of your UESC.

Then, of course, in addition to those technical services, there are financial services that can be included in your UESC, one of which would be the actual project financing for the whole project itself, if desired. And the other might include rebates from that utility. You'll be hearing more about those from Phil later in the program.

Let's assume that you're going to finance your UESC with your serving utility company. This chart is going to talk us through a little bit more about how that works. Before the UESC project, you're paying your full utility bill, as shown in the bar chart on the left side of this screen. And then during the UESC project, the Federal agency is realizing energy cost savings because of the energy conservation measures that have been installed at that site. And they're paying the utility company back over time for the cost of the project and also the cost of the financing, the cost of borrowing that money. After the UESC, the Federal site is continuing to benefit from the energy cost savings and is retaining their remaining savings from the implemented energy conservation measures, so that's what's represented on the right side of the bar chart.

So let's next take a look at the different steps in the UESC process, and we'll also talk about some of the best practices that FEMP recommends for some of the key elements of those steps.

We like to think of the UESC process as having three major phases: a project preparation phase, a project-development-to-award phase, and then the construction and post-construction phase. During that project preparation phase, there is pre-work that needs to be involved, including pulling together your own in-house team to work this project; getting that team trained so they understand what a UESC is and what the project is going to be all about; spending some time, internally, identifying what you see as your key site needs (Do you know that you've got antiquated boilers in one part of your campus that you want to have replaced? What are some of those challenges that you want to fix with this UESC project?); and working yourself toward that initial contract document with the utility company that allows you to partner with them on identifying the energy conservation measures.

So then in the next part of the UESC process – that would be project development to award – you're actually working with that utility company to identify the energy conservation measures that are going to be implemented at your site. You have proposals that you're receiving from them about what they recommend should be done at your site. You're reviewing those proposals and negotiating with them about the details there. And then you have final contract documents that you and the utility sign to move you forward to the next and final step of the process, which is where you actually start construction and have that post-construction period, where you're reimbursing the utility company for the project costs.

Now, if you'll take a look at this chart with me, underneath where it says "project preparation," "project development to award," and "construction and post-construction," we've put some time ranges there. And I've put those time ranges there because every time we do this training, whether it's in classroom or Web-based training, we always get the question: "Well, how long do these projects take? How long should this take from beginning to end before we start reaping those energy savings?" And I can't really answer that question for your project. We've put these ranges here, and they're valid ranges for many projects. But this might not be how your project turns out at all, because there are many different factors that influence the timing of these projects, and each project is just a little bit unique. So don't hold me to those dates.

All right, we're going to take a look now at a few of the best practices associated with key elements of these steps. During the project preparation phase, this is where you're putting that internal agency acquisition team together, and you're going to have to think about who needs to be a member of that team, what are their roles and responsibilities. You're going to need to include contracting personnel, legal personnel, technical experts about your facilities, and an energy champion. Maybe that energy champion is you, but it needs to be someone who has a passion for this project, wants to see it through from beginning to end, to make sure the project keeps rolling along.

That agency acquisition team is needed to keep the UESC project moving forward correctly and efficiently. This is where you want to bring together all the people that have knowledge, experience, and responsibility. Now, this slide says "responsibility," but I would also add "authority," because you need to have the people involved that can sign on the dotted line on these contracts and have the authority to say, "Yes, we're going to do this; let's move forward."

You'll also want to use this opportunity while you're pulling this team together to gain support for the whole effort early on. Get those people on board and excited about the changes that you're going to be making at your facility that are going to benefit everyone there and also benefit the taxpayer. You want to involve those who will be affected by the project, such as tenants in individual buildings, and others that might just be touching the project. Establishing a strong team at the very beginning of the project is probably one of the best recommendations FEMP can make to you to make sure you have a successful project.

Now, again, that agency team should consist of a contracting officer or technical representative for the agency – ideally, everyone who can help, hinder, or be affected by the project in any way. Depending on the needs at your site, this might include a NEPA compliance officer or other specialists that might be needed – security personnel, etc.

Now, another key element related to project development would be that preliminary audit. I'm going to talk about the preliminary audit and the feasibility study later as two separate deliverables from the utility company. But in some cases, these two items may be combined as one deliverable, depending upon what the site needs are and the way an individual utility company handles UESCs.

For that preliminary audit, though, this would just be a broad assessment of the potential for energy and water efficiency measures, and it's based on a review of existing facility use and conditions. During this audit, they're going to examine your energy- and water-consuming equipment and the control systems associated with it. They're going to look at what you direct them to look at. You might direct them to look at a single building; you might direct them to look at your whole campus. You're going to have them look at certain buildings that you want them to focus on that might have different purposes – office spaces, laboratory spaces. They're going to examine the operating hours of those buildings and the age of that infrastructure – are they dealing with buildings that were built in the '50s or just a few years ago?

As part of this audit, they'll analyze all the energy- and water-consuming equipment, systems, and controls in the buildings, and look at your past history on the utility data usage of electricity, natural gas, steam, etc. Give them a broad brush when they do this audit. Give them your ideas about the energy conservation measures, but let them come up with their own ideas as well. That way you can have a comprehensive project that will reap the most benefits for your facility.

Now, to get started with that preliminary audit, you would negotiate the cost of the audit with the utility company. They might want that audit paid for up front. More often than that, they can bundle the cost of that audit into the financing agreement for your UESC project – either way, you want to negotiate that cost up front. You want to make sure it includes a description of your facilities and systems to be studied in the statement of work for the audit. You want to include in that statement of work any agency-specific requirements you have. Like, if you know you want PV installed on the top of a certain building, you want to tell them all these things up front. And then you sign the task order for the audit that allows them to get started and indicates the cost and scope of work.

So let's assume, after you've received that preliminary audit report from the utility company, you've sat down with them and gone over it, reviewed the energy conservation measures they recommended, and discussed it, and decided you're ready to move forward at least with some of those measures on a feasibility study. That feasibility study is more of an investment-grade analysis of the site's conditions and your potential for efficiency improvements. This is a much more detailed report. It gives you details on the technical and economic viability of the proposed conservation measures. It's going to comply with the task order and statement of work that you issue to launch the feasibility study. And when you receive that feasibility study report, this provides you with sufficient information to make a decision to stop the project or go forward with the project.

The feasibility study establishes the baseline for the project design, the basis for the project design, and also finalizes the energy baseline that you agree on with the utility company. Then there's a detailed assessment of existing facility use and conditions, and a much more detailed analysis of your energy- and water-consuming equipment and that utility data, again, but going into much more depth.

Best practices from FEMP related to launching that feasibility study include, again, negotiating the cost of the feasibility study with the utility company, signing that task order. It should indicate the negotiated cost and include an attached scope of work that you've both sat down and agreed upon.

Let's talk a little bit about performance assurance for utility energy service contracts. Again, UESCs are service type contracts, not performance contracts like ESPCs. That means they don't normally include performance guarantees. But FEMP does recommend that you include a minimal level of performance assurance planning to make sure your project is a success. And that's going to include startup performance verification; performance verification at the end of the warranty

period; operations and maintenance training at construction; and periodic inspections and performance verification; and an assessment and resolution of performance discrepancies.

Also, along with performance assurance, this is important where you're doing the planning for this, in the project development phase of your project, that you sit down and agree on that energy baseline with the utility company. You clarify with them your performance objectives, what you want to see accomplished as part of this project. You make sure that their reports coming back to you are considering interactions between different energy conservation measures. For example, if you have a lighting retrofit in a building and an HVAC retrofit in that same building, well, the lighting retrofit can impact the HVAC load. Have they considered things like that? Specify a verification method for each energy conservation measure. And you're going to work with them to identify your own financial and staff impacts and requirements associated with this performance assurance process, and indicate a reporting format and schedule for the performance assurance plan.

Also, another key element of project development is commissioning. Commissioning is a key to project success with UESCs. It supports effective operations and maintenance with training, documentation, and maintenance strategies. It identifies operations and maintenance procedures that improve the energy efficiency of even newly installed equipment, which might not have been installed or set up operationally just so the first time. And it helps optimize that equipment and the control systems associated with it, so you don't have problems like wrong temperature set points or stuck dampers, things like that. During your project development phase, then, you're working with the utility to develop the design and operating intent for the energy conservation measures you want to have installed, and you're doing this early in the process, such as at that feasibility study kickoff meeting.

A little bit more on commissioning. As you're reviewing the design and proposal packages from the utility company, you're doing this with a focus on commissioning and maintenance. And as you work with them to develop an actual commissioning plan, that should include specific actions for commissioning during construction, acceptance, and post-acceptance of your project.

One more thing I'd like to say. We've already discussed performance assurance for UESCs and commissioning. But I just want to take a minute to mention FEMP's five steps for effective M&V, which align very closely with what we've just discussed: establishing that M&V option and method for the energy conservation measures; preparing the site-specific M&V plan; defining that baseline is very important; monitoring the installation of the energy conservation measures; and conducting periodic verification and reporting.

I'd just like to wrap up this UESC portion of the program with a look at some of the FEMP resources available to you to help you implement your own UESC project. There is, of course, the FEMP UESC website, which has information about the types of contracts; laws and regulations; financing mechanisms; technology resources; individual UESC case studies, with project examples from various Federal agencies; and a link with information about additional training opportunities available to you.

The UESC Enabling Documents book is one of the most important guides available to you on UESCs. This has a wealth of information under one cover, and it's a free download from the FEMP website. One of the most important things in this Enabling Documents book is that it has sample documents, and by that I mean you don't have to start from scratch when you're writing terms and conditions for your task orders or your master agreement with your utility company; you can use the templates found in this Enabling Documents book. Many people say that's 70 or 80 percent of what you need to write to start your UESC contract, so do download that as you're getting started on your project.

Also, it's great to be able to talk to other people that have done UESC projects before, and for that I recommend the Federal Utility Partnership Working Group. This is a group that meets twice a year, utility company representatives and Federal agency company folks coming together. The

next open meeting of this group will be in April, a little bit later this month, in Portland, Oregon. They welcome new folks to come all the time.

Also, FEMP helps facilitate communication with strategic partnering meetings. They set these up with individual utility companies and invite that utility company's Federal customers to come along. These are great opportunities for sharing as well.

I also wanted to point out some other educational opportunities. We have more classroom workshops available around the country, additional Web-based training. But the most important one I wanted to point out to you is GovEnergy, coming up August 7th through 10th in Cincinnati, Ohio. I hope to see you there.

Now, DOE also has FEMP-sponsored project support, including direct project support, where you can get help from individuals on your particular project. They can review technical audit reports that you get from the utility company, feasibility studies, and more.

Here are just a few folks out in the field to help you. This is our Federal financial specialists. They can get you started on any type of alternatively financed project, and we've got their contact information available to you. Also available to you is the utility energy service contract team. These are just a few of the folks on that team, including David McAndrew at FEMP headquarters. We're happy to help you.

That concludes the UESC portion of this program. I'm going to turn it over to Kathy.

Kathy Hyland: Thanks, Julia. Now let's hear from David McAndrew. Let me introduce David. David is the supervisor of the Utility Services Program for the Department of Energy's Federal Energy Management Program. He is also responsible for review of utilities contracts at DOE facilities nationwide, including technical oversight of DOE's utility rate intervention program. Prior to joining FEMP in 2001, Mr. McAndrew worked for the Federal Energy Regulatory Commission and the Defense Energy Support Center. So now to David.

David McAndrew: Hello. I'm David McAndrew, the lead for the Utility Services Program for the Department of Energy's Federal Energy Management Program.

Faced with rising energy costs, expanding agency missions, and uncertain operating budgets, Federal energy and facility managers must meet taxpayer expectations for cost-effective, high-quality services, while meeting the growing environmental and energy security needs of the nation. It's a difficult job, but it doesn't have to be done alone. Fortunately, the Federal government has created the UESC, a proven public-private contracting vehicle that saves energy, cuts utility costs, and improves facility operations, with no upfront congressional appropriations required.

As you know, FEMP can help you begin and develop your utility energy services project. FEMP offers technical assistance and advice from experienced professionals; training; case studies; templates; and best practices to help you get the most value from your investment. These resources will help you have a successful UESC project that best meets your site or agency needs.

To facilitate public-private partnerships, collaboration, and networking, FEMP hosts meetings of the Federal Utility Partnership Working Group twice each year. These meetings bring together Federal agencies, utilities, and energy services organizations to discuss a broad range of opportunities for technology transfer and the most effective purchase of utility services. Check the FEMP website for the most recent calendar of events and more information.

Federal agencies and partnering utilities can request onsite FEMP partnership meetings, where experts can train participants in contract development, financing options, audits, and M&V procedures. You can find materials from past partnership meetings on the FEMP website.

FEMP offers recent case studies of successful UESC partnerships that cover different projects at different agencies. Fact sheets, summaries, guides, and other publications are also posted online.

Screening tools developed by DOE National Labs can also help you determine which renewable energy technologies are a good fit for your project. FEMP also provides software to conduct economic analysis and fuel price calculations to make your work faster, easier, and more reliable.

Energy incentive programs at the state level support energy efficiency, renewable energy, and demand response. You'll learn more about these programs later in the seminar. FEMP researches and compiles information about current energy incentive programs in each of the 50 states and the District of Columbia. You can access this information from the FEMP website by clicking on the color-coded map.

You can count on FEMP's National Laboratory contacts to help your agency and utility partners with any aspect of UESC development and implementation. Contact Karen Thomas, Bill Sandusky, or Julia Kelley to take advantage of their customer assistance and expertise.

We hope this First Thursday Seminar accelerates your utility partnership efforts, and I look forward to answering your questions at the end of this program.

Kathy Hyland: Thanks, David. As I said earlier, David and Julia will be able to answer your questions at the end of this seminar. Now let me introduce our next instructor, Phil Coleman. Phil Coleman has worked in the Environmental Energy Technologies Division at Lawrence Berkeley National Laboratory since 1996. He spearheads an initiative sponsored by FEMP to educate Federal facilities on efficiency and renewable incentives, demand response, utilities procurement, and rate-responsive building operations. He has 20 years of experience working in energy, over half of which has been devoted to Federal energy management.

Now let me turn it over to Phil.

Phil Coleman: Thanks, Kathy. What I'm going to be talking to you about today is some easy money that's available from utilities, state governments, and sometimes third-party providers that'll help you in leveraging your energy projects at your sites. So let's get into the presentation.

What are energy project incentive funds? Generally, they're funds designed to promote energy efficiency and renewable energy projects at your sites, and they're available in roughly 90 percent of the states in the United States. While the funding for these various programs across the country was about $5.3 billion in 2010, we're expecting that figure to approach about $6 billion in 2011. And that's about double the figure from just three years ago, in 2008, and it's up dramatically from where it was in 1998, when we saw less than $1 billion available. These funds are really taking off.

Where's the money coming from? The conventional avenue, the typical avenue, is really from the utilities. And the method is really that the utility takes the revenue from the sales of electricity and gas to you, the customers, and devotes a portion of them to these funds. But a more recent advent is what we call the public benefit fund, and these are what are sometimes listed on utility bills as a systems benefit charge or a state conservation surcharge. And these are generally from just electric utilities, and usually applied only to the customers of the investor-owned electric utilities. But these are statewide funds that are mandated by the legislatures in the states. So they're sort of the new player on the block.

What's driving these funds? Really, the ultimate driver is their cost-effectiveness. And what we found – a number of organizations that have studied these funds have found that the savings of electricity are affected at about $0.02 to $0.05 a kilowatt-hour, so roughly a third or a half what it might cost to generate, transmit, and distribute that same electricity. On the gas side, what ACEEE found – American Council for an Energy-Efficient Economy – is that the savings are usually enacted at about $0.30 to $0.60 per therm of gas, so, again, much cheaper than the supply of the energy.

Secondly, another driver is that these funds really, at least on the electric side, really relieve a lot of headaches for the state and for the utilities, because it's much easier than trying to create generating plants, with all the siting problems, permitting, and transmission issues.

I want to go over some of the trends in these funds. And what we're seeing, again, as I said a couple of minutes ago, is a lot of growth, and we generally think that that growth is going to continue. A study by some of my colleagues a couple years ago found that the likely funding for these programs by 2020 is expected to be somewhere in the range of $7.5 billion per year to about $12.5 billion per year, so, really, maybe about a doubling at the high side from what we see today.

But there's one caveat that is worth mentioning, which is that in a few states we have seen instances where the state government has taken back some of these funds, where they're public benefit funds collected statewide. This has happened on a few occasions. We don't think this is going to continue. We don't think it's a major trend, but it is a problem and it is something to be aware of, where it's a non-utility provider providing these funds from public benefit funds.

Who administers the programs? In the great majority of the cases, it's really the utilities themselves that are running these programs, but there are some states that have different structures to try to deliver these funds. In a number of states –Wisconsin, Oregon, Vermont, and Delaware – there's third-party organizations that the state has chosen to administer the funds. In those latter two, Vermont and Delaware, the term that they use in that state is a sustainable energy utility or sustainable electric utility.

Another structure that we see in a couple of states and is the main deliverer of these funds in Illinois is a state agency itself. I'll discuss that a little bit more later. Another structure, in New York, that has worked very well for a number of years is a state-chartered corporation, NYSERDA, that is responsible for the programs.

Let's get into a little bit of the details about which programs, what types of programs are offered. The most common that many of you are certainly are familiar with are equipment rebates. And these can come in two forms: prescriptive or custom. A prescriptive program is one in which the utility or a non-utility provider of these programs is giving you a refund, a rebate, of a certain dollar amount per each occupancy sensor or each efficient light fixture that you put in. Sometimes these are dependent on the efficiency of the equipment, so more efficient equipment gets greater rebates, and, of course, the capacity of the equipment, so a larger chiller would be eligible for more rebate money than a smaller chiller.

There's also custom programs, and more and more states seem to have these. These are programs where, unlike the prescriptive program, the utility is opening itself up for the fact that you might be able to save some energy in your facility through other products that aren't part of their prescriptive program, let's say an ice-making machine that's very efficient, or something a little more exotic like a desiccant air conditioner. In these cases, usually the onus is on you, following their measurement verification rules, to sort of demonstrate the savings from the equipment, but they will give you a rebate or a refund for some of the cost of the equipment.

In addition, there's also custom programs that are focused on, really, whole-building savings, so interactive savings from comprehensive projects, like the ones that Julia was talking about from utility energy service contracts. So in this case, again, the payments would usually be based on savings at the kilowatt-hour or therm level that you have to demonstrate. But they are available, and the utilities and non-utility providers do encourage these kinds of programs, these kinds of savings and rebates, in some states but not all.

What are some other program types that are available? Some states and utilities offer new-construction incentives. And this generally is in the form of, you institute a new construction project, and what they're remunerating you for is your ability to exceed the code on your new building. Another type of incentive might be for design assistance for a new construction or major renovation project.

Another type of incentive is no- and low-cost energy audits. And these can be as simple as a walkthrough or drive-by audit to something more sophisticated, like the investment-grade audits that we see in UESCs that Julia talked about.

An additional type of incentive offered in some states is re- and retro-commissioning incentives, and I'm seeing these more and more across the country. And the remuneration is similar to the custom, whole-building type programs, where really what you're paid for is what you can demonstrate in savings from the recommissioning project or retro-commissioning project.

A few states – and I'm thinking of New York and Texas; there might be a couple more – offer incentives for performance contractors. In those cases, again, you're getting remuneration based on your kilowatt-hour or therm savings. And the idea is that an energy service company, or ESCO, would come into your site and do the project, and this would be an incentive to buy down some of the project for them.

Lastly, I want to mention load management programs. These are not different than the energy conservation programs that I've been talking about, but the payment is – in these programs, is really based on your kilowatt reduction and not your savings of kilowatt-hours, so it's a focus on demand and not energy that you're saving. And that's really driven by what the utility or the state is after at that point through that program.

Next, I want to turn to renewable energy incentive programs, which are also pretty common in the states. And, again, the funding for these is not as generous as the energy efficiency, but there's about $1.5 billion available, we think, this year, and these are increasing as well. The most common of these renewable incentives are rebates for on-site solar photovoltaic installations, and these are very, very common. Usually they're upfront payments based on the kilowatts of the system that you install. Less frequently, they can be performance-based, so, really, where the payment is based on the electric output of the system. And there's also incentives for other technologies in some states, such as wind, particularly small, decentralized wind; geothermal projects; small hydro; and biomass.

Another form that the incentives take for renewables is through renewable energy credit sales. And this is particularly a generous type of incentive for solar installations, and it's really driven at the state level where the state legislature has instituted a renewable portfolio standard. The utilities are anxious to meet that renewable portfolio standard, so they're willing to buy the output from your renewable system – again, particularly solar, where there's often a set-aside. The RECs, or renewable energy credits, are very, very valuable, sometimes $0.20 to as high as $0.60 per kilowatt-hour.

Lastly, I want to mention that, for renewable energy incentives, a big driver in the U.S. now is tax incentives, particularly from the Federal government, but then also from some state governments. I'm not going to delve into this in great detail, because this is sort of a separate topic. But these are funds that are usually available through power purchasing agreements or other, similar agreements. And they require outside ownership of the installation, because, of course, the Federal government doesn't pay taxes.

Now I want to turn to some of the authorizing legislation for accepting these funds. So the question arises: Can Federal agencies really accept these funds? Before 1992, this was not permissible. What really changed was, that year the Energy Policy Act was signed by George Bush Sr., and this really changed the whole landscape for the feds accepting these incentives. I just want you to look at some of the language.

The Energy Policy Act specifically states that agencies are authorized and encouraged to participate in these programs. Then it goes on to say that each agency may accept financial incentives, goods, or services generally available from any such utility, to increase energy efficiency or to conserve water or manage electricity demand. This really gave the license to the Federal government to take these incentives.

Now, one caveat is that language from the Energy Policy Act specifically calls out utilities. This has been a little bit of a source of confusion, and some people have asked, given that it says utilities, what does that mean vis-à-vis the non-utility provision of these incentives? How FEMP interprets the language from the Energy Policy Act is really expansively. What we think is that this language was written before these non-utility providers were really part of the game in terms of incentive provision; and, therefore, we feel that these are acceptable sources for Federal agencies to accept these funds.

That language from the Energy Policy Act was really written before the third-party providers and state agencies were in the game, and that's why we interpret it this way. But I should say that there have been attorneys at a couple of the Federal agencies who've argued otherwise on this and had a more limited interpretation of the statute.

So, given that you're able to accept the money, what about the mechanics of doing it? A lot of agencies say, "Well, we have difficulty accepting checks from our utility or any other source." This is a problem we've seen in a lot of different forms. Some agencies, like the General Services Administration, have specific mechanisms to handle this so that the facilities can accept the funds.

But there's a couple workarounds that we suggest, and the first is simply just taking the incentive from the utility or non-utility provider and just assigning it directly to a contractor that's doing the work for you, like an electrical contracting firm, or maybe an energy service company, or even a utility – for instance, if you're doing a UESC, like Julia was talking about. Maybe you're working with the electric utility; the gas utility has these incentives available. That means the electric utility doing the work for you can still turn to that gas utility and get these funds, but you need to sign them over to them. But this is a pretty easy thing to do in most of the programs. It's a simple form, and you just really need to give a signature to say it's okay.

A second type of workaround is to have the incentive applied directly to your utility account. Naturally, this is often not so difficult when you're working with the utility directly. It can be a little bit more complex, obviously, if you're working with a different party, a non-utility provider. But we have plenty of precedents where that's happened, and Federal agencies have been able to accept the – have been able to assign the funds to their utility accounts.

What are some other things to watch for when you're pursuing these funds? There's a couple landmines, but usually they're avoidable. One of the things is that many of these programs require, for you to take the incentives, they require some sort of preapproval. You can't just do the project and turn back to them and say, "Hey, I've gotten these savings" or "I put in these widgets; now hand over the money." What they want to see, especially if you're pursuing a rather large refund or if it's a custom and more complex project, they want you to get preapproval for what you're going to do ahead of time. And it's usually a very simple matter. It's just that they want you to apply and notify them that you're doing this project, and they'll give you an okay. And, again, some of them have measurement verification requirements to demonstrate the savings, so that's another reason to turn for preapproval.

A second thing that you want to watch out for is that some of these programs – this is not uncommon – have annual budgets, and some programs are more popular than others and they might get exhausted before the end of the year. So this is another reason that you might want to look into the preapproval to find out if funds are still available for the types of projects that you want to do at your site.

And then, the programs change and the rules change each year, and you're talking about programs across 50 states and across a lot of different utilities even within a state. So you really want to make sure that you're paying attention to the rules. Especially if you're looking to pursue a lot of these incentives, the best policy is to get acquainted with a representative at the utility or the non-utility provider, so that you can make sure that everything you're doing is kosher.

Okay, so how do you figure out which funds are available for your facility? FEMP provides a map of the U.S. It's a clickable map with an annotated listing of all these programs that are open to

Federal facilities. We've listed the website here; it's a rather long one. And then beneath that, you'll see we've noted that another way to get to the site is just to navigate through the "Project Funding" tab of the FEMP site.

So FEMP's site is very similar in some ways to another site that many of you are probably familiar with, called the DSIRE site, or Database of State Incentives for Renewables and Efficiency, and that's at www.dsireusa.org. But there's a couple distinctions. FEMP's site includes demand-response programs, and DSIRE does not include those. And what we do with the FEMP site is we try to whittle down what's available from any one of these program providers to just those programs that are open to Federal facilities. We cut out all the residential programs and so on, and just show you what is likely to be of interest to you.

Both FEMP's site and the DSIRE site are great sources, and I encourage you to look at both of them. The advantage to the FEMP site, again, is that it is really directed specifically to Federal facilities, and it includes demand response as well.

This is a shot from the site itself, and you'll see that color-coded map. The legend is simple. What we do is we break down the various states in terms of how much money they're devoting to these programs. Basically, darker is better. The dark green means that there's 2 percent or more of electric revenues that have been devoted to electric energy efficiency programs in the state, so they're the most generous states. The lighter green is where between 1 and 2 percent of electric revenues are being devoted to the energy efficiency programs. In the brown states, about 0.5 percent to 1 percent of the total electric revenues are devoted to these programs. And in the lighter, beige states, it's between zero and about 0.5 percent of electric revenues. And there's also about six states for which we are not able to get data, so they're also included in the beige.

In addition, we also indicate the renewables programs or distributed generation programs – sometimes they're combined – and heat and power, combined heat and power incentives, or other types of distributed generation programs that are incentivized. And the states that have these types of programs, we have vertical hashing for.

And then, the gas programs are available in some of the states, generally more towards the northern half of the country. We marked those with horizontal hashing. I should say that most of the money that's available through these funds are really on the electric side. That's about 75 to 80 percent of all the energy efficiency funds are on the electric side. So it's really less on the gas, but we do indicate, again, if the state has gas programs, with those horizontal hashes.

Okay. So, basically, for each state we tried to answer about six questions, and those questions are: What public-purpose-funded energy efficiency programs are available in my state? And, really, what we're saying there is: Does the state have one of these statewide public benefit funds? And then next we turn to the utility energy efficiency programs and identify what utility energy efficiency programs are available in the state. And then what load management or demand-response programs are available? And, again, we go through all the programs that the feds could take advantage of that are available in that state from the various utilities and, again, non-utility providers as well.

The next question we address is: What distributed energy resource programs or distributed generation programs are available? And this is where the renewables programs would be highlighted. Next question is: Are there energy efficiency programs sponsored by state government? Now, I identified before that, in Illinois, this state agency is the primary provider of the incentives. But a lot of the states have smaller programs. Even where they have utility programs available, the state might have some taxpayer funds in general, that they're devoting to some type of niche program that you can advantage of, so we highlight those in that section.

The last question we ask is: Are there energy efficiency programs – or what additional opportunities are available? And this is really a catch-all for any miscellaneous programs that might be available. A couple examples: The four states in the Northwest US – Oregon, Idaho, Washington, and Oregon [*sic*] – have – customers in those states can take advantage of the

Northwest Energy Efficiency Alliance. They have programs that are essentially regional, and any customer in any of those four states can take advantage of them. So we profile that there.

Also, in this last question, we talk about the utilities in the state that offer areawide contracts, and think back to Julia's presentation. What these utilities are, are the ones where you're likely to be able to negotiate a utility energy service contract, so we try to tell you which utilities you might be able to get a UESC from.

I just want to turn now to one of the profiles, just give you a little bit of an idea of what one of these profiles looks like – if you clicked on the state of Idaho, among other things you'd see a little profile of the programs offered by Idaho Power. Their overall program is called the Energy Efficiency for Business Initiative. And it's got a couple subprograms in it. One's called the Easy Upgrades for Simple Retrofits. That's one of the prescriptive programs, so that's where you can get a payment for each efficient boiler or each efficient packaged air conditioner that you put in.

Next, they have a Custom Efficiency for Complex Projects program. And as I was just describing before, how they remunerate you is based on your savings really in the first year after installation. What they're saying here is they'll pay you about $0.12 a kilowatt-hour for your documented savings.

This is what the profiles look like, and there are any number of them for each given state. One thing that is important to note also is that, if you look at the slide, you'll see that there's underlining for the program names. And what that underlining indicates is that you can click there and go directly, in this case, to the utility program, so you can go right to the horse's mouth and get a detailed description of how the program works and whether it would be beneficial for you.

In summary, I just want to say that there are a lot of opportunities available to Federal facilities to get these incentives. Where you see some now, there's probably more coming later, depending on where you live. And to access what's available, really, what you need to do is just go to FEMP's site and click on that map for whatever state you're looking at, and that'll give you the information you need and let you click right to the utility program or non-utility provider program and see all the details.

The last thing I wanted to say is just that the program manager for this program for FEMP is Ms. Tracy Logan, located in Washington, D.C., and we've listed her contact information there, so you can feel free to contact her about these programs. I just want to say thank you for your attention.

Kathy Hyland: Thank you, Phil. So it is now time for your questions. We don't have a long time for questions today, so please phone them in now. I have a couple of questions that have been phoned in during the seminar, and we'll start with those. Julia and Phil and David, first question I have is: What is the best way to approach a utility when discussing a partnership opportunity? For example, are there particular offices or divisions within a utility to start with? Julia, you want to take that one first?

Julia Kelley: Sure. Any Federal agency is already paying a utility bill to their utility, and one place to start is to talk to the person responsible for those utility bills, and they'll have a representative that they're working with at the utility. And then, of course, Phil just mentioned another easy way to start is visiting the databases that he referenced and looking at the utility company offerings there, which ones are offering UESC services.

Kathy Hyland: Okay. Phil, David, anything additional?

David McAndrew: On the reference that Julia just mentioned, on the website, we have the list of the Federal account reps for each of those utility companies. So if it's one of the utility companies on that list, it'll give you the name of the person and the phone number where you can reach that person.

Phil Coleman: I'd just say that the greater the incentive that you're expecting to get, that you're looking at from that utility or non-utility provider, the more worthwhile it probably is to get in touch and get friendly with the representative.

Kathy Hyland: Phil, this one's directed at you. Which states or regions of the country have the most progressive incentive programs, and why?

Phil Coleman: Traditionally, this was really concentrated on the East and West coasts, particularly in New England and New York and New Jersey; California, Oregon, and Washington. But, over the last five or six years, it has spread over the whole country, and there's a whole lot of states that you might not expect would be leaders in this – Iowa, Minnesota, Wisconsin – that are very generous too. What the drivers are, again, is the cost-effectiveness, and I think a lot of the states have really gotten wise to that, and these are offered, again, in more and more of the states.

Kathy Hyland: David, this one's directed at you. Can you talk more about the relationship between the utility partner and a third-party financing partner, particularly in a UESC project?

David McAndrew: Many of the utility companies have subcontractors, ESCO subcontractors, that help them do project management or project implementation. The prime contract is between the Federal government and the serving utility. It has to be between the government and the utility. The ESCO is a sub to that contract. What we recommend is that the utility uses a competitive process to select that sub. GSA requires that when subs are selected under the areawide contract.

Kathy Hyland: Thanks, David. We have a question from Fort Meade, Maryland, that is live with us.

Audience Member: Regarding EPAct 1992 and the assignment of payment from our demand-response and curtailment activities, is there any legal information on the website? He mentioned the form, but we want to make sure we get it right.

Phil Coleman: We don't really have legal information on the website about accepting specifically demand response from funds from curtailment service providers. But you can turn to the Defense Logistics Agency Energy, DLA Energy. There's a fellow there named Larry Fratis who's got a lot of experience and has really pushed this whole issue forward in the Federal government. I would call Larry, and I can get you his number after the program if you'd like. He and his crew are an authority on how to handle payments from curtailment service providers that are independent of utilities, and make those acceptable.

Audience Member: Thank you very much.

Kathy Hyland: Julia, this question is directed towards you. What are the agency's options when commissioning or M&V proves that the project is not performing like you'd hoped?

Julia Kelley: Thanks for bringing that one up, Kathy, because it is important. One of the things that you're negotiating with that utility in your pre-project planning is how you're going to handle discrepancies and issues that may arise. Now, with a utility energy service contract, as I mentioned earlier, these are not performance contracts, so, typically, there's not a performance guarantee for the energy conservation measures, unless you did happen to negotiate one up front. But you do have a mechanism that you have established during your project development phase with that utility company, what you're going to do if there is an issue with a particular piece of equipment.

Kathy Hyland: Thanks, Julia. This caller says: It seems like UESCs are a win-win for the public and the private. What are the keys to getting more agency sites involved?

Julia Kelley: Some of the keys to getting more agency sites involved in these projects would include – I think just the actual Federal mandates are kind of driving that very organically. As people run out of Recovery Act funds at these different agencies, they've kind of passed the hurdle of allocating those funds and getting finished with those Recovery Act projects, I think they're going to start

turning back to utility energy service contracts and other alternative financing mechanisms to get more and more projects done to help meet those Federal mandates.

Kathy Hyland: Okay. This question is directed towards you, Phil. Do the audits that you talked about count towards EISA Section 432 requirements for agencies?

Phil Coleman: That's a good question, Kathy. Really, there's a full range, as I mentioned in the formal presentation. These audits can be anything from a simple – to be cynical, a drive-by audit, to something much more sophisticated, an investment-grade audit; and the level of subsidy from the utility or non-utility provider can have a wide range. So what would meet the 432 requirements? I think the best advice I can give on that is really to turn to FEMP's guidance on what constitutes an acceptable Section 432 EISA audit. Basically, except for the most simplified audits, most of them are going to qualify and get you towards that 25 percent goal.

Kathy Hyland: Okay. David, you'd like to weigh in on that?

David McAndrew: Yeah, what we recommend is that when you work with a utility provider and you develop the statement of work for the audit, you basically structure the statement of work so that it meets all the points of the 432 requirements, so that your preliminary audit will allow you to satisfy the law.

Kathy Hyland: Thank you, David. Next question. Julia, what is the best way to ensure you have the most highly qualified individuals serving on your agency acquisition team?

Julia Kelley: I think that's a good question too, Kathy. I know that one thing that ensures whether I do a good job or not is that, if my supervisor at work asks me to do a project, I'm going to do a good job on it. So I think one way to ensure you're getting the total buy-in and top support that you need is getting top-level buy-in in these projects and making sure that all the players are involved. Don't leave somebody out that has an area of expertise that you need to be involved in your project.

Kathy Hyland: Okay, thank you. David, let me direct this one towards you. Are there any major differences in working with an investor-owned utility versus an electric cooperative when it comes to either UESCs or incentive programs?

David McAndrew: Contractually, they're the same. I mean, signing a UESC with an investor-owned utility or cooperative are the same. They're a contractor, and you're signing a contract with them. In my experience, investor-owned utilities tend to be bigger, more bureaucratic; they have maybe more lawyers or more rules and regulations. On the positive side, they tend to have much better incentive programs. For the cooperatives, they tend to be more informal, maybe a little more focused on the Federal government customer, because he's going to be one of their biggest customers. Also, one real advantage that the cooperatives have is access to very low-cost financing, so they have very, very cheap financing from CoBank or the Rural Utility Service.

Kathy Hyland: Okay. That concludes our seminar today. I want to thank Julia, Phil, and David, and I want to point out that this is a series of seminars. And next month, on Thursday, May 5th, there will be a session on renewable energy, featuring Andy Walker of the National Renewable Energy Laboratory, and also Anne Crawley of FEMP. Now, here's a quick look at our upcoming seminars.

[Music plays]

Once again, thank you for joining us today. We hope you'll register for additional seminars by accessing the website on your screen, www.femp.energy.gov/firstthursday. Finally, please take a moment to complete a brief evaluation to help us determine what future training topics you'd like FEMP to offer and also ways that we can improve these First Thursday Seminars. You can also complete a quiz to reinforce your learning and print a certificate for your records. You can access this quick evaluation and quiz in one of three ways. You can go to the website at www.femp.energy.gov/firstthursday and find the quiz and evaluation there. If you pre-registered for this course, you'll get an e-mail with a follow-up link. And, finally, if you're watching this

today by live webcast, you can click on a paperclip icon, and it will take you to the evaluation and quiz.

We would like to thank the Department of Energy's Federal Energy Management Program; our instructors, Julia Kelley and Phil Coleman; and David McAndrew for making this seminar possible. And thank you for joining us today. We'll see you the first Thursday of May for our next seminar on renewable energy.

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