*Richard Kidd:* Hello. I'm Richard Kidd, program manager for the Department of Energy's Federal Energy Management Program. Welcome to First Thursday Seminars. If you've participated in previous seminars, welcome back. If you are new to the program, you can access our earlier seminars at any time by visiting the FEMP website.

Each year, the Federal Government consumes more energy than any other single organization in the nation. That energy provides light and electricity to our buildings, heats and cools our facilities, fuels our fleets, and provides power to Federal projects across the country and around the world.

Because of this, we have a responsibility to use that energy wisely. With Executive Order 13514, the president has challenged each agency to set and meet new targets to reduce energy and water use, and to increase renewable energy production, with greenhouse gas reduction as our common collective metric of performance.

FEMP assists Federal customers in meeting these goals by implementing cost-effective energy management practices and smart investment decisions. We work with agencies to identify and leverage financial and technical solutions to meet and exceed our national energy goals. We hope this program, and others in the series, will help you reach your energy, water, and greenhouse gas reduction targets.

While we have selected six 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 for additional resources, technical assistance, and guidance. Thanks for joining us, and enjoy the seminar.

*Kathy Hyland:* Hello. Welcome to the Department of Energy Federal Energy Management Program First Thursday Seminars. I'm Kathy Hyland, and I'll be your moderator today. Today's seminar is on Federal Greenhouse Gas Accounting and Reporting.

If you haven't already printed the learner guide and handouts, you may want to do so now. You can do so by accessing http://www.femp.energy.gov/training. A couple of the slides are a little bit complicated, so you may want to print those handouts. If you prefer to do so after the seminar, those will remain on the FEMP website, so you can print them later.

I want to quickly cover our objectives for today. We hope that after completing this seminar, you will be able to explain common greenhouse gases and their effect on the climate, discuss Federal sources of greenhouse gas emissions, identify Scope 1, 2, and 3 emissions and give examples, access existing greenhouse gas accounting protocols, describe a process for managing greenhouse gas emissions reductions, and locate resources to assist you in greenhouse gas emissions accounting and reporting.

Our instructor today is Matt Gray from the Federal Energy Management Program. Matt is the program lead on sustainability and greenhouse gases. He's chair of the Interagency Sustainability Working Group, and he's leading the development of the greenhouse gas accounting and reporting guidance based on Executive Order 13514.

Matt has a degree in industrial engineering and anthropology from the University of Pittsburgh and an MPA in environmental science and policy from Columbia University.

We will also have with us today Rob Hardison from the Logistics Management Institute (LMI), and he'll be with us later in the program. So I would like to thank Matt and turn this over to him.

*Matt Gray:* Great. Well, thank you so much, Kathy. And, really, thanks to the whole FEMP communications team for doing all this great work on these First Thursday Seminars, and for inviting me. I think this is a timely and important topic, and I'm really excited to be here to talk to you all today. And,

I hope you get some new information out of this seminar. Hopefully, at the questions at the end, we can be able to answer most of those things.

The greenhouse gas accounting and reporting guidance has not been issued yet. But I think that's okay for the purposes of today's seminar. The purpose is to give you a good sense of the greenhouse gas accounting world, and all the stuff that's out there, which has already been done. And I think it'll prepare you, pretty well, for what's coming down the pipe.

So if we could start off quickly with a little bit of the background of the science on climate change. I don't want to go into too much detail here. We could write many books on this, and people have written many books on this. But we just want to give a little background for what's applicable to what we're talking about here.

Greenhouse gases – what are they? They're trace gases in the lower atmosphere that trap heat through a natural process called the greenhouse effect. We like this effect. It basically keeps the planet warm, keeps the planet habitable, and lets us do the things that we do. Greenhouse gases – they're nothing new. Many currently in the atmosphere are naturally occurring.

The natural carbon cycle: what is that? It's made of a variety of sources, and syncs with carbon and other greenhouse gases flowing between reservoirs through natural processes. Vegetation and soils decompose. Volcanoes erupt, as we've seen. Animals breathe. All these things release greenhouse gases. Conversely, the atmosphere, the oceans, plants, animals; we also store carbon dioxide, and that basically serves as that natural sync.

On the other hand, there are manmade emissions, or anthropogenic greenhouse gas emissions, and those result directly from human activities. Burning coal is one example. Concentrations of naturally occurring greenhouse gases have remained fairly steady for thousands of years.

Since the industrial revolution, human activity has drastically increased the atmospheric concentrations of these gases. And there are many, many reasons for that. It's not really the time or the purpose for this seminar, but I encourage folks to do more research on that.

But it really comes down to two primary reasons, looking globally. And it's really the acceleration of the sheer number of people on the planet. And, secondly, all those people, on average, across the globe, are consuming more. They're consuming more energy. They're emitting more greenhouse gases.

So that combination of more and more people, and on average, those people emitting more greenhouse gases has basically created the situation we're in now, be it through emissions from our homes, our businesses, the vehicles we drive, the land use changes, the deforestation and things like that.

Like naturally occurring emissions, the manmade ones stay with us for a certain amount of time due to the greenhouse effect, which I think many are familiar with. But here are the basics. It basically refers to the circumstances where short wavelengths of visible light from the sun pass through a transparent medium and are absorbed, often on land.

But the longer wavelengths of the infrared that gets reradiated from these surfaces – from the heated objects – are unable to pass through that medium again. And they're basically trapped. They're trapped in our atmosphere, and the trapping of the long wavelength radiation leads to more heating and, as a result, a warmer resultant temperature.

So whereas an actual greenhouse basically traps that hot air in the greenhouse and prevents it from escaping, the greenhouse effect, when applied to atmospheric conditions, is really talking about trapping this infrared radiation I just mentioned. Just think of it in terms of greenhouse gas mitigating strategies – strategies for reduction.

I think one good example of how this applies is with cool roofs, or white roofs, as they're also commonly known, in that the incoming solar radiation, as these short wavelengths hit the surface of that roof. But because it's highly reflective – these surfaces are highly reflective – it reflects back out still on that short wavelength, and allows escaping back into space.

Whereas generally, your darker roofs, which are less reflective – again, it gets absorbed. It gets reradiated, and it gets trapped in the atmosphere. So that's one easy example of a technology, and how that relates to the greenhouse effect.

A lot more great stuff out there in climate science. I recommend you go to the EPA website – the Environmental Protection Agency. Great stuff there, as well as the National Oceanic and Atmospheric Administration, or NOAA, has really, really great resources.

Again, what are greenhouse gases? There are six main ones here that we're going to focus on today. It's carbon dioxide, methane, nitrous oxide, hydrofluorocarbon group (HFCs) – somewhat of a tongue twister – and the perfluorocarbon group of greenhouse gases (PFCs). And then the final one is SF6, which is sulfur hexafluoride.

The first three both have manmade and naturally occurring emissions. And then the final three, on the bottom, are all manmade emissions. And just to point out – these are the ones specifically referenced in Executive Order 13514, and they're also the same ones in the original Kyoto Protocol from the early 90's.

I have some columns here. You see the common sources and uses of these different greenhouse gases. And then the final one, on the right – you have the global warming potential. That's a basic concept in greenhouse gas accounting, in that – just taking it as an example here, you see a methane with a number of 21. What that really says is that for each molecule or mass of methane that goes up in the atmosphere, it has 21 times, basically, the heat-trapping ability as carbon dioxide, which is that one. And you see a whole range here across the six. The idea, though, is to get to a common metric to measure our performance.

To get to that point, we use this term, the carbon dioxide equivalent, or CO2E. You really multiply the amount that you're emitting of each type of gas by this global warming potential. And then they all get into this common metric – CO2E. And that's a way to track your emissions.

Another key point here is – it looks like, from this table, that carbon dioxide isn't as serious; it has the smallest global warming potential. But that's not the case, really. Because despite it having the least potential, just the sheer quantity of them in the atmosphere is much greater than all these other greenhouse gases combined. So globally, carbon dioxide does have the greatest amount of global warming potential, currently.

The other thing that could have been on this chart, but it's not, is one more column on atmospheric lifetime. That really gets at how long each of these gases stays in the atmosphere. Another example is methane. It's one of the lower atmospheric lifetimes, at 10 to 12 years. The other ones are generally much larger than that. That's the basics on different greenhouse gases.

Here's a graph, and I think it really says a couple of key things. You see the red, which is the carbon dioxide, thousands of years before the present. And in the blue, you see the temperature change over that same amount of time.

The key here is just to show how highly correlated they are, in that CO2 is a great indicator of what the temperature is going to be at that period in time. Therefore, if you increase CO2, generally you're going to see, over time, increases in temperature. The other key thing about this graph, on the far right. You see that it does naturally cycle over time, in terms of the CO2 that's emitted.

You see a sharp increase on the right there, near that zero line, near present day. That's what really has climate scientists and many people so worried – that sharp increase. The fear is that resulting blue also increasing at that same rate, and that's not sustainable. I think the administration certainly understands the sciences behind the sciences, and the policies that are coming out are reflective of that.

I just want to read a quick quote. This is from a National Academies report from about a year ago. And I think that it gets at, certainly, the issues that were faced, and also some of the impacts from climate change. It says:

"There's growing concern about global warming and the impact it will have on people and the ecosystems on which they depend. Temperatures have already risen 1.4 degrees Fahrenheit since the start of the 20th century, with much of this warming occurring in just the last thirty years.

"And temperatures will likely rise at least another 2 degrees Fahrenheit, and possibly more than 11 degrees Fahrenheit, over the next one hundred years. This warming will cause significant changes in the sea level, ecosystems, and ice cover, among many other impacts. In the arctic, where temperatures have increased almost twice as much as the global average, the landscape and ecosystems are already changing rapidly."

That sums it up pretty well. There's much more to learn about the impact of climate change, and I definitely recommend you going to those sources I mentioned earlier.

I want to shift a bit from some of this background science to how we're beginning to approach management of greenhouse gases in the Federal Government itself.

When managing greenhouse gases from an organizational perspective, the common approach is to group emissions into the three scopes that you see there. This is what many corporations do, and this is how the Federal Government is going to do it under the new executive order.

To date, most organizations – especially from the private sector – have focused on tracking and reducing Scope 1 and 2 emissions. As you see, we were also really focused on Scope 3.

So what is Scope 1? Scope 1 is considered direct emissions, whereas Scope 2 and 3 are both considered different types of indirect emissions. Scope 1 is direct because it's from sources that are owned or controlled by a Federal agency. Typically things that actually happen within the boundary of your agency, or of your campus or building. It's vehicles and equipment that the agency owns and operates. It's the stationary sources – actually the gas combustion on your physical site. That would be a Scope 1.

Some other less common Scope 1's are the onsite landfills and wastewater treatment. If you're actually treating your waste on the actual Federal land, then that would be a Scope 1 emission. And, finally, fugitive emissions, which is a key category. These are things like refrigerants – emissions from refrigerants that you may use. That's those three bottom ones I showed, in terms of greenhouse gases earlier – the HFCs, the PFCs, and the sulfur hexafluoride. That's Scope 1.

So what's Scope 2? Again, this is indirect. And these are purchased electricity, steam, and cooling that you, as an agency, purchase. Scope 2 is indirect because the emissions don't actually occur at your facilities. They occur at the generation source of the utility. These are key, and these are often a huge percentage of an agency's greenhouse gas emissions, or any organization.

And, finally, Scope 3. Scope 3 is really exciting. I think this is an area that most organizations haven't focused on too much, so it's a real opportunity for leadership Federally. And we're just generally excited about tackling them. What are they? They're often the ones that we're focused on Federally, because it really related to our operations – is more of the supply chain piece. It's the goods and services that we purchase, and the emissions associated with those goods and services. And there are some examples here. Transmission and distribution losses from purchased

electricity. That isn't captured in Scope 2 – the electricity you purchase – so it's captured in Scope 3.

So for every megawatt hour, for example, of electricity you purchase, about six percent is then lost in the transmission lines, from the source to where you consume it at the facility. And it's important to account for that, so that's accounted for in Scope 3. Business travel – very important.

I think great opportunities for reductions– air travel is in there, and ground travel. You're talking about the buses you take. It's the trains. It's your rental cars. It's that thing. And then a couple of others that are, again, upstream. Supply chain is your contracted solid waste disposal and your contracted wastewater treatment.

The key word here, again, is "contracted." We send those offsite, so the actual emissions are from outside of your organizational boundary. And that's why it's Scope 3. If you had solid waste disposal on your actual Federal site, then that would, again, be a Scope 1. So, hopefully, you can start to see those differences.

And there are many, many other upstream emissions. One that's not really upstream or downstream, technically, is employee commuting – another key Scope 3, which I'll get at in more detail later. As many of you know, there are many opportunities for reducing employee commuting at Federal sites.

And, finally, the category that's not really shown there, and largely because it's not as large a concern for the Federal Government is the downstream emissions. This is more for companies. If you sell a product, or that thing, once you sell it, the emissions that take place from that product, downstream, would also be a Scope 3 emission.

They're just interesting. Look at things, maybe in your office, or in the room you're in right now. All those products and all that stuff, you can think of in terms of these different scopes. Maybe one example is a lamp. There were emissions that it took to basically produce that lamp, in your room, and that would be an upstream, eventually Scope 3, emission down the line.

Once you actually own that lamp, and you put in the light bulb, and you turn it on, all of a sudden, those emissions are your Scope 2. You're paying for that electricity. That would fall into your Scope 2.

At the end of its life, you would hopefully recycle the lamp. But somewhat disposable – and you dispose of it. Those downstream emissions, again, would be another Scope 3. The idea is to get this full accounting of the emissions that we are really responsible for, and we have some impact on.

I've tried to establish, at a high level, what greenhouse gases are, the problems posed by emitting them, where manmade emissions originate, and also how the Federal Government is beginning to address management of these.

And while, yes, the climate crisis does pose significant threats to our health, our economy, our national security, our general way of life, it also presents an incredible opportunity, at the national level, to move towards this clean energy economy, to create the green jobs, especially in this economy.

But there's also additional opportunity at the Federal Government itself, and that's to really lead by example in doing just that, and to show that reductions can be done, and can be done cost-effectively. In recognition of that, on October 5th, 2009, President Obama signed Executive Order 13514.

One of the pillars of that executive order is establishing these targets for Scope 1, 2, and 3 emissions. On January 29th, 2010, the president announced that the Federal Government will

reduce Scope 1 and 2 emissions by 28 percent by 2020, based on a 2008 fiscal year/base year. So looking at it, that's over 12 years – 2008 to 2020 – a 28 percent reduction in absolute emissions.

I'm not talking about energy use or greenhouse gases per capita or per square stuff, but actual reductions off of that. I think that's something to really be proud of. Many of us know there's been a lot of work going on, in the last few decades, on energy management in the Federal sector. So a lot of good work's already been done, and I think we can be confident to meet this goal, and we should be proud of the goal.

There are many elements in the executive order. I'm just going to talk a bit about those that relate most to greenhouse gases. This is also in your learner's guide as well – the actual language. So I won't go into too much detail.

But, again, Section 2A was having agencies establish those Scope 1 and 2 targets. 2B was to establish the Scope 3 targets. 2C is for agencies to develop an inventory, which I'll talk about a lot today, to track against those goals.

Section 8 is developing a plan, the Strategic Sustainability Plan. A lot of it will revolve around do to plan for reducing emissions. Currently, agencies are really focused on 2B and Section 8. Both of those have due dates in early June.

The other key provision I'll talk about today is the Section 9 piece, and that's really getting at how you track these emissions consistently across the Federal Government's operations. It is no easy task. But it calls for FEMP working with all the agencies to develop these recommendations for greenhouse gas accounting and reporting.

Section 9 – that's a huge focus of today. But as you know, there are other sections. Section 13 is also important when we're thinking about greenhouse gas accounting. As I talked about, there's Scope 1, 2, and 3, and Section 13 is really locating at Scope 3 - supply chain emissions, the emissions from our vendors and our contractors.

How do we go about reducing those over time? Because we'll find that a very large percentage of our emissions in the Federal Government are from the supply chain sources. So definitely coordinating the Section 9 folks and the Section 13 folks working on that.

There are also many other regulations and EO requirements, which I'm sure you're aware of but we won't go into those right now – those relate to greenhouse gases: energy use reduction, renewable energy use, and so on.

I think we have a great eight-page summary, a crosswalk, really, on the FEMP site, with a link that crosswalks, by sustainability category, the requirements at a high level for each legislative mandate and executive order. So I recommend you going there.

Another thing to think about is the EPA's mandatory reporting rule. This was developed and issued in 2009, and many agencies are also going to have to report under this. This is at a national level, so not just Federal Government. But large sources of emitters – so those emitting over 25,000 metric tons are going to have to start reporting to EPA on an annual basis.

Given this, that's one of those elements that we've been thinking through, on how to make sure what they're doing at EPA with this rule aligns, as much as possible, with what we're doing in Federal greenhouse gas accounting. They also have a great tool on their website. I think it's called the Applicability Tool, and it allows you to assess, pretty quickly, whether your facility would fall underneath this reporting requirement.

I recommend you going to the reporting rule website. Other requirements? There are state and regional programs for greenhouse gases, and there's also international reporting. Some states, such as Wisconsin, require large emitters to report to the state.

Many of these states then report to a regional program. So, for example, the Regional Greenhouse Gas Initiative in the Northeast – a collection of states in the Northeast United States – they're measuring. But really, what the focus is here is that some Federal facilities – certainly not most – are going to have to report through some of these states, under these rules.

There's some international reporting as well. Each year, the U.S. Government sends the United Nations a U.S. Climate Action Report that sums up our emissions as a nation. There are some Federal facilities, again, that I think report underneath that. So all things to keep in mind.

This side gets covered a bit, so I think it's a good summary, also by due date, which is crucial, of when a lot of these things have been due, and when future due dates occur. On November 5th, a month after the executive order was signed, each agency designated a senior sustainability officer, and this person, in each agency, is responsible for implementing Executive Order 13514.

Three months after the executive order was issued, we had submission of the Scope 1 and 2 target for 2020 – I just referenced – and that resulted in that 28 percent target across the government. Important to mention here that not every agency, and, in fact, most agencies do not have a 28 percent goal. That is just a compilation of all the targets from across all the agencies.

Certainly work within your agency, if you don't already know it, what your specific agency target is. That's definitely an important note. April 5th – a very busy day, as you see there. We submitted the recommendations under Section 9 for the greenhouse gas accounting and reporting. Submitted that to the Council on Environmental Quality, as well as the Office of Management and Budget.

On the same dates, FEMP issued Federal fleet management guidance. This is posted on the FEMP site, and I highly recommend you looking at that document, if you're at all engaged in fleets. It's a very good document.

And, finally, GSA submitted a couple of sets of recommendations – one on that Section 13 I mentioned, the vendor and contractor emissions, and, secondly, on the Federal local transportation logistics.

Also just mentioned two things the industries are focused on right now is the sustainability plans, as well as those Scope 3 targets. That'll be due June 2nd. And then, finally, a year from the issuance of the executive order, FEMP, working with the agencies, is to provide electronic reporting capability to collect all that data from the agencies, which is going to be submitted, as you see, in January 2011. That will be when the first comprehensive inventories will be delivered.

One quick thing to mention here – you also see on October 5th, there's actually a working group focused on climate adaptation and developing a set of recommendations on how the Federal Government responds to climate change through adaptation planning.

Almost all of this presentation is on mitigation. Mitigation, again, is reducing emissions. How do you reduce your footprint? There's this whole other world, in greenhouse gases, on adaptation, and it's really recognizing that no matter what we do, there's going to be some impact on the climate. It's important to start planning now for that, and how it affects our operations. So a crucial endeavor.

Okay. That's really the summary of the due dates and what we've been really busy with at headquarters over these last few months. Moving on to the framework from which we had to work. Fortunately, on doing the Section 9 work, there's been a lot of work done already that we can pull from.

One that's almost complete is the U.S. Public Sector Protocol. It applies the principles of a corporate standard to state, local, and Federal agencies, and serves as background information for the Scope 9 work. That's been great to work with.

The focus here – you'll see this term thrown around in the greenhouse gas accounting world – is "entity-level accounting." Entity-level is looking at an organization. And that can be an entire Federal agency. That can be a campus at a Federal agency. That could be a region – like a GSA region.

That's what entity-level accounting is trying to get at. The stakeholder input into this process, in developing the protocol, was also fantastic. Almost all agencies "road-tested" this protocol, to see how it related to the Federal operations, to make sure it applied to the kind of work that we do.

And, also, it helped get some of the agencies more acquainted with greenhouse gases. It's been a really good process. And again, this should be coming out pretty soon. And you see the website there.

A lot of the organization-wide greenhouse gas accounting stems from a document from 1999, and it was published by the World Resources Institute and the World Business Council for Sustainable Development. It's the corporate accounting and reporting standard.

This is, again, focused really on corporations, to get them reporting in this Scope 1, 2, 3 framework that I've been talking about. This has been updated since, but it's also spawned a lot of other great works.

The Climate Registry Protocol – that's a voluntary registry that folks can submit to. It requires third-party verification of your inventory. There's been a California Reporting Protocol. The International Standards – the ISO – 14054. That is also largely based off this corporate accounting.

And, finally, EPA Climate Leaders. I think some folks are certainly familiar with that. That is also largely based off of this scheme. There's a lot of consistency in this greenhouse gas accounting world, and the Public Sector Protocol I just talked about also refers to this.

How do these all relate together? I've tried to establish this greenhouse gas accounting hierarchy to try to explain it. This protocol I just talked about – it's really at that, maybe, 10,000-foot level. It's getting at the framework for a consistent accounting approach across the entire public sector – so state, local, Federal Government.

Then there are the policies and regulations, the requirements. EO 13514 did a lot of that for us. And then what I'll talk about more is the Section 9 piece. This is the Federal guidance. Getting from that 10,000-foot level of the general framework to: "Here's exactly what you have to do. Here's exactly what you have to report to get those consistent inventories."

Finally, all this leads to planning at the agency level for doing inventories, and then actually completing your greenhouse gas footprint. This is my last slide before the break. But I think it's important just to lead in with kind of the general principles that are important to think about when you're looking at greenhouse gas accounting.

These really come from accounting principles that have existed. The World Resources Institute Protocol has these, and they've been adapted to the Federal Government.

Completeness – somewhat self-explanatory. You want a complete inventory. You want all the emissions that are required to report those. And if you can't report them, due to data not being available, or the quality not being up to snuff, at that point, then to be clear about what's not in there.

Consistency – and this is important, I think, at two levels – within an agency. You want each DOE installation, for example, reporting in the same way, or each DOE site doing it in a consistent manner. And then at the same time, every single agency reporting also in a consistent manner.

Then you can roll all these up into a Federal-wide greenhouse gas inventory. Then we can easily track against that 28 percent target I talked about, that the president announced.

Transparency – it's important when you submit your inventory, one, because if you don't have a complete inventory at that point, due to data availability issues or things like that, to be transparent and say that it's not there, and what the plan is for getting more of that data in the future. And then also transparency to the public for reporting this, to the greatest extent feasible.

Accuracy – I think pretty self-explanatory on that principle. And, finally maybe the most important is relevance. You know it's great to do a greenhouse gas inventory. I think it's valuable, in and of itself, to a degree, to get a sense of what your footprint is.

But this shouldn't just be a reporting exercise. The point is to have these numbers impact management and impact your strategies. I think when doing inventories, it's always important to remember: how does this number – how does this reporting impact, actually, my decisions for reducing these emissions, which is, in the end, what we're trying to do?

*Kathy Hyland:* Okay. Before we go to some comments by Rob Hardison, I would like to just make sure that you know that you can call in your questions, or email them, or fax them. Your questions are important, so that information is on the screen for you there. And we'll continue to display that for you periodically.

If you'd actually like to speak live to our instructors, you can do so by calling in at the end of the presentation. Or you can allow us to take the notes down and read the questions for you.

I'd now like to introduce you to Rob Hardison. Rob is with the Logistics Management Institute (LMI), and he is an energy and sustainability consultant specializing in alternative energy technologies and greenhouse gas management.

Rob has a BS in environmental science from the University of Notre Dame, and an MBA and MPA from the University of Washington. Let's listen to some comments from Rob.

*Rob Hardison:* Management of greenhouse gas emissions is a critical and urgent issue, because studies have indicated that human activity is increasing greenhouse gas concentrations, and may be causing major shifts in the global climate.

Hello. I'm Rob Hardison, an energy and sustainability consultant for LMI, supporting the Department of Energy's Federal Energy Management Program. Through Executive Order 13514, the United States Government is addressing this issue as an integral part of a sustainable approach to Federal energy and resource management.

Agencies must reduce emissions to meet new goals, improve operations, and ensure accurate and consistent reporting of greenhouse gas inventories. While we are raising the bar in setting new standards, we're not starting from scratch. In fact, we're building on a solid history of progress.

To start, the World Resources Institute and the World Business Council on Sustainable Development created the corporate accounting and reporting standard, one of the most widely known frameworks for conducting company-level greenhouse gas accounting.

EPA's mandatory greenhouse gas reporting rule requires large emitters, such as power plants, fuel suppliers, and vehicle manufacturers to report annual emissions. EPA's calculation methodology serves as the basis of GHG accounting under Executive Order 13514.

The Energy Information Administration's voluntary 1605B reporting program was one of the earliest programs allowing companies, government organizations, and other entities to report annual GHG emissions and sequestration efforts. Established to allow both public and private

organizations to report their annual GHG emissions, the EPA Climate Leaders Program provides support to help set and reach reduction targets.

The climate registry is a repository of GHG inventories for voluntary, mandatory GHG reporting from entities located in the United States, Canada, and Mexico. It sets methodologies for accounting, verifying, and publicly reporting emissions. Finally, the Public Sector greenhouse gas accounting and reporting standard was developed by the World Resources Institute and LMI to adapt the corporate standard to address issues most commonly faced by public sector managers.

In addition to these, FEMP provides targeted information, tools for ongoing guidance, common protocols, and training to help Federal agencies monitor and manage greenhouse gas emissions. FEMP is also developing new tools to help agencies meet their reduction targets. FEMP is developing an Excel-based GHG accounting template and calculation workbook that will contain formulas agencies need to calculate their inventories, in accordance with the EO 13514 GHG Guidance document.

Agencies can use it to calculate their activity-specific data at the facility level, as well as overall agency rollup for annual inventory reporting. An online GHG reporting portal, which will be released in October, per the executive order, will allow agencies to input their consolidated GHG emissions inventories for reporting to the Office of Management and Budget.

The portal will maintain the most current calculation methodologies and emission factors for annual inventories. FEMP is also integral to the Federal Greenhouse Gas Accounting Workgroup. Over the next year, the group will meet regularly to address the issues that may arise in the implementation of the new guidance. It will also be an important forum incorporating lessons learned and new procedures into the GHG inventory process.

Federal agencies are now getting a grasp on how to measure their greenhouse gas emissions, and are learning how to tackle the problems associated with GHG measurement, accounting, and reporting. As you move forward, visit the FEMP website to find the best resources to fit your needs. I look forward to answering your questions later in this program.

*Kathy Hyland:* Rob will also be available to answer questions, as will Matt. Let me turn it back over to Matt.

*Matt Gray:* Thanks. Basically, the second part is going to get into more of the nitty-gritty greenhouse gas accounting. But before I do that, I just kind of want to give a little bit on the process on Section 9 development, and a lot of the key players in this process.

You can see there, in the middle, DOE FEMP. FEMP is charged by the executive order to develop these recommendations to the Council on Environmental Quality, and in consultation with the Office of Management and Budget. And these were, again, submitted on April 5th.

Of course, we were not acting alone. Great expertise across the line - really helping and doing this, and are going to be crucial going forward. Two key labs – DOE labs – are The National Renewable Energy Laboratory and Pacific Northwest National Lab, which I'll talk more about later.

From the agencies, key players in this group have been the Department of Interior and the U.S. Department of Agriculture. I'll talk a bit about biological sequestration, in terms of greenhouse gas accounting. They have a lot of the expertise in that realm.

Department of Defense – they're the largest emitter, the largest energy user in the government – in the U.S. And they also have a lot of expertise in greenhouse gas accounting, done previously at some of their installations. So good work there.

GSA – General Services Administration, the Federal landlord– has also done some good work on more of this bottom-up inventory tool development, that I'll talk a bit about. They've been

involved. And, of course, EPA – the EPA Climate Leader folks – tons of expertise, and they've been crucial all along the way. Then as Rob mentioned, the other folks in DOE – the 1605B Protocol – they've been really helpful, because they have a lot of experience on voluntary emissions reporting.

A quick overview again, if you want the ten word summary of what we're trying to do – here it is: we're trying to standardize procedures for reporting greenhouse gas emissions across the Federal government. As I mentioned, this is currently under review by CEQ. And again, CEQ will issue this final guidance down the line.

Who are the users of Section 9? I think the intent of any guidance that comes out is that it's both for the folks at the headquarters, who are going to be compiling a lot of this data, as well as those in the field at the facility level, who have to do, really, most of the work in gathering the data and reducing those emissions.

Often you'll hear inventory approaches, in terms of these sorts of top-down versus bottom-up approaches at opposite ends of the spectrum. A top-down approach to doing an inventory would be where you have everyone at the facility level.

For instance, all the DOD installations would simply just report the activity- level data to headquarters, activity-level data being the actual gallons of gasoline purchased, or the amount of megawatt hours purchased, that thing. That would go to headquarters, and then headquarters would calculate the emissions, and voila, you have your inventory.

The other end is the bottom-up, where in this example each DOD installation would do its own inventory. Not only would they collect the activity-level data, they would then do the calculations to get those numbers into that CO2E equivalent – carbon dioxide equivalent I mentioned earlier, as the metric that we're working with. So those are really the two approaches.

But the idea is to have both headquarters and facility level working in tandem. Key topics we've been really looking at here. One – and this was talked a bit about earlier – but the emissions sources to include in a comprehensive inventory.

This is, in large part, the greatest challenge. There are a lot of Scope 1, 2, and 3 emissions out there, so to come up with a way to do that consistently, and to meet all the agencies needs, is, I think, the highest priority. We've been spending a lot of time on that. And that's specifically called out in the EO, to say, "Provide recommendations that address Scope 1 and 2, and specify Scope 3 emissions."

Another thing specifically called out in the executive order, Section 9, is to consider biological sequestration, so land use change on Federal land. Why is that important? In the long term, the vision is to have, again, full accounting for all the activities we have, and how they relate to greenhouse gases.

This includes the carbon dioxide that's absorbed by the soils and absorbed by the trees and that thing. If you covered up a green field with pavement, that would then be reflected in a greenhouse gas inventory down the line. That's the vision. Likewise, if land was previously deforested or never forested, and you reforest that land, that needs to be properly reflected in the inventory. The idea is you want the accounting scheme to promote those activities that would actually reduce the greatest amount of emissions. That's why these were specifically called out in the executive order.

Renewable energy, a key topic, especially the purchases and renewable energy certificates and the use of carbon offsets. How does that play? The reporting process and the reporting content – clearly important. You see for inventory recalculations. What we're really getting at here is, basically, your recalculations, which in our case is the 2008 fiscal year.

So say, for example, you have – in 2014, a major arm of a department comes online that wasn't there before, and it's a large source of emissions. In a way, it unfairly penalizes you, because your 2008 inventory didn't have those emissions associated. Something like that may reconstitute looking back at that 2008 base year, and seeing how to recalculate from these major organizational changes. Then, finally, validation and verification. Once you've done all this work, and you have your inventory, how do verify that as accurate?

One key concept in greenhouse gas accounting is organizational boundaries. An organizational boundary is those emissions – what you really need to determine an organizational boundary is to figure out which emissions to report, so that someone else doesn't report it. Examples here are looking at energy first.

Currently, we do it with energy reporting to FEMP. Basically, if you pay the bill, then you report it. So that's one way to ensure that there's no double accounting, that one agency isn't reporting the same emissions as another agency.

You can see the issue here. If we roll all these things up to a Federal wide level, if we're counting the same thing twice, and that's not clear, that presents a problem. So double accounting is a clear issue. And then looking at that, as an example, is our leased assets – the landlord versus the tenant, making sure that those folks aren't reporting the same emissions.

The same thing for fuel – purchased fuel. Currently, in our FAST database, which is where we currently report this stuff, if you're purchasing it, then you report it. You can work with existing reporting structures. As I discussed earlier, there are also these emissions that we haven't been reporting, and these are kind of new – so the fugitive emissions. A lot of agencies haven't been reporting them.

Scope 3, same thing, because it really hasn't been required for everyone. How do you go about figuring out who should report which emissions? There's a term called "operational control." For these other emissions, whoever has the quote, unquote, "operational control" could report those emissions.

For example, on equipment that has refrigerants, maybe it's the folks who purchase the equipment and/or manage and operate that equipment that would then report it. But to make it clear that there's only one entity doing it. Another thing that the executive order requires in Section 9 is, again, for FEMP working with other agencies to develop the electronic reporting capability for capturing all this data.

The term we're using currently is this greenhouse gas reporting portal. The idea here is to have all these emissions at the agency-wide level rolled up and in one place, where you can see the entire inventory together. This FAST data that's currently being reported on fleets – that would automatically be fed into this portal.

Same thing with energy reporting. The current energy reporting would now go through this portal. And then, again, those two areas we haven't worked a lot on – fugitives and Scope 3. So you enter in the activity-level data – again, for example, the gallons purchased – and then the portal would have all these emission factors and methodologies in there, would calculate it automatically, and then spit out your inventory by the different scopes.

The big advantage of this is you don't have accounting errors at the agencies, and it's good validation to make sure that we're all doing it right. That's the top-down agency-wide data. Clearly there's a lot of value in managing these things at the facility level or the site level.

GSA is developing a carbon footprint tool to do just that. The plan is to make that freely available as well, so that at that building or campus level, you can really manage your emissions. The idea is to have this portal and the footprint tool and others using the same methodologies, just so we basically get comparable data.

There are many other bottom-up inventory tools, developed by the private sector, already in this arena. I won't spend too much time on these. I've talked a bit about Scope 1, 2, and 3 already. But here they are laid out – the four major categories. Generation of electricity, heat, cooling, and steam – again combusted onsite – mobile sources, fugitives, and process.

I will mention that the methane and nitrous oxide emissions that get combusted from both mobile and biomass combustions – that would be a Scope 1 as well. That's important to consider. And the way, currently, EPA Climate Leaders does it, the CO2 emissions from biomass and biofuel combustion is reported separately, outside of the scopes.

The process emissions – just note that most agencies probably won't have to deal with too much of this. This is really for the larger agencies – have more of these process emissions. In Scope 2, emissions from purchase – required electricity, steam, heating, or cooling.

The current way this is done – as many of you are familiar, for electricity, you report those megawatt hours. And those all go up through your agency. They get reported to FEMP. And then we estimate greenhouse gas from that. We apply a national factor across the entire United States. There's one emission factor we apply to that.

A more accurate way to do that is to take advantage of EPA's resource, which are the eGRID regions. You see a map here. There are 26 eGRID regions, and each of those has different emission factors, depending on the fuel sources that go into producing that electricity.

Just as a quick example, purchasing one megawatt hour in Ohio is not necessarily the same thing, in the greenhouse gas world, as in Washington State. Ohio is more dependent on coal, and the Pacific Northwest is much more hydropower. By definition, there were fewer emissions that resulted from producing the power in the Pacific Northwest versus the Midwest. So that's where you get the advantage. You can manage better your emissions once you have that better granular data.

And, finally, Scope 3. Again, I think I talked about this previously, so I won't go into detail. But the key thing to remember here is it's a phased approached. We're taking a huge leadership stance on Scope 3, and the idea is to improve over time, both in the amount of sources – Scope 3 categories that we are capturing and reducing – and, also, improving that data quality over time.

It's recognized that this is a long-term project. It's really exciting, and I think all the agencies are going to be needed to really move forward on that.

Okay. The Scope 1, 2, and 3 are often termed your operational boundaries. So, again, versus organizational boundaries, which I talked about. Those are your operational boundaries, so that's the actual emissions. Which emissions are you actually capturing and managing?

And, finally, verification and validation. There are really three general approaches to doing this. First would be second-party verification. That's having someone within your agency – internal to your agency – review your inventory, once it's complete – but someone independent from the process. Someone who hasn't been involved at all in collecting this data or estimating the emissions. They should have some level of expertise in this area, so they can verify and validate.

Third-party is similar – third-party verification. But instead of internal to the agency, you have someone external to the agency come in and verify that. And I think folks who are familiar with environmental management systems and LEED buildings understand the value of third-party certification.

Finally is inventory management plans, which is grouped in this quality assurance realm. That's really getting at how you capture the process for doing an inventory, and identify the data gaps

that you may have in there, and, over time, plan to reduce those gaps, getting better data. Those are the key elements of verification and validation.

As a way of summary on these topics, here is a list of categories where I see a lot of opportunity for improving, over time, as we really get a lot more experience in doing this, as a government. One area is reporting.

I think greenhouse gas folks are really well situated to think about how we can really minimize reporting burden at the sites, as well as at the interagency level. Because greenhouse gases is inherently an integrating metric, as Richard Kidd mentioned in the introductory announcements. It's an integrating metric, so it presents a lot of opportunities for thinking about reporting in a more streamlined way.

Scope 3 data collection clearly is going to be an area where we're going to have to improve over time, so our working group will work on that. Renewable energy and how to account for the complexities of renewable energy in a greenhouse gas accounting world.

Vendor and contractor emissions – again, back to the supply chain. But getting at the full supply chain and our top X amount of suppliers, and working with them to see if we can reduce some of those emissions. That's a key element.

I mentioned organizational boundaries. Again, leased assets are the trickiest issue here because you have this landlord/tenant relationship. I think the vision, over time, is to get to a point where you have both the tenant and the landlord accounting for some level of emissions in their inventory, and that it's reflected in their inventory.

Because the issue is both of those – the tenant and the landlord – do have some sense of control over the emissions from those activities. There needs to be a way to account for that in the medium and the long-term. That's a big topic. And I mentioned sequestration.

Moving on, thinking about and looking at, basically, inventories that have been done previously. And just a big thanks to DOE labs that have done inventories, as well as a lot of folks – just champions at the site level in agencies who've done work on this previously, just because it was a good thing to do.

We've basically been able to reap those benefits from that hard work done earlier, and make this program stronger. It's just interesting to compare inventories, even at four DOE sites, which you would think would be somewhat comparable, in terms of their emissions profile.

One area to look at, maybe, is electricity, which is that nice teal color. You know electricity, for most Federal operations, is going to be a pretty significant portion of your inventory. We see that in certainly two of them. It makes up three-quarters.

But at the Hanford site, for example, it's only 24 percent. Again, part of this is because of where it is. It's in the Pacific Northwest. The grid is cleaner, because of the hydropower, and some nuclear as well. So that's one reason.

Another reason you can look at is their employee commuting – 39 percent of emissions from commuting. Here we're grouping Scope 1, 2, and 3, just for comparison purposes. But compare that to the other ones, where it's 11, 6, 8. And that's because of the nature of the site. It's a huge amount of land that folks have got to cover on four wheels. There are opportunities for reduction there as well.

The final thing I want to point out here is fugitive emissions. We see there that Hanford is 8 percent. I think we, at DOE headquarters – I'm not sure we understood how much, in terms of emissions, there was going to be in fugitives, before we started looking at these inventories.

This also shows the value of being consistent across the entire Federal Government. Because once we get fugitive emissions profiles from all the agencies and all these sites, we'll really have a much better understanding of how to manage our emissions.

A couple of other quick examples. Here's one from the Park Service. On the Y-axis, you have emissions. On the X, you have a bunch of acronyms. Those are all different parks. And the key is just showing how big Scope 3 is – I mean 83 percent of the total.

That is largely because of a decision that they're taking ownership over emissions from visitors in those parks. Once a visitor gets in that park boundary, trying to calculate what those emissions are. Because they have some sense of control. In theory, you can have, at some parks, everyone park at the boundary, institute clean buses, and they could transport via that way through the park. There are ways to manage that, and they acknowledge it.

Another one is the Postal Service. This is interesting here – that 64 percent is from fleets. I guess that makes sense. It's the Postal Service. There are a lot of postal trucks. But compared to the other agencies, this is a lot. I don't think another agency is going to have anything like this.

But it gets at that point that each agency's mitigation strategies are going to be a little different, and you've got to manage appropriately.

The other key thing here is that contract transportation is 52 percent of that, so it's pretty significant. The need to really look at not just the things that you pay for directly, but it's those emissions from your contractors.

Okay. Going through your calculating emissions and the basic steps therein. This generally applies across almost every single emission category, and it'll vary a little bit, depending on the different variables involved. You have, on your top right there, your Step 1, which is your activity data. This is your megawatt hours, or your gallons.

That's multiplied by an emission factor. These emission factors are done and calculated in a scientific manner and updated periodically to reflect the latest science, and that gives you tons of greenhouse gas in each of those greenhouse gases I talked about earlier – those six.

Step 2 is simple – to basically take those greenhouse gases and multiply by a global warming potential. I also mentioned that earlier. In the end, you get your carbon dioxide equivalent by adding up each of those different greenhouse gases.

I'll go through a couple of examples here. One on purchased electricity. So in this case, we have 30,000 megawatt hours purchased in one of these 26 eGRID sub regions – the SRVC. I think that's the Virginia/Carolina area. It's pretty simple. Right? You take the 30,000. You multiply that by these eGRID emission factors that are provided, and what spits out is CO2, nitrous oxide, and methane emissions. There.

The next step is basically multiplying each of those emission types by the global warming potential factor. Add those up, and, voila, you have your CO2E – your carbon dioxide equivalent. Same thing for mobile combustion. Here our activity-level data is gallons of gasoline, so 500,000 gallons of gasoline.

Again, these emission factors are provided. Multiply it. You get your CO2, N2O, and CH4. Again, multiply those numbers by your global warming potential, and you have your carbon dioxide equivalent. It's interesting, in both these examples, that while you have these three types of emissions, it's really the CO2, in these cases, that's really head and shoulders above the rest, in terms of the sheer amount of emissions, compared to nitrous oxide and methane.

Okay. I'm going to finish up quickly here with just a brief little case study. I mentioned the Pacific Northwest Lab earlier – it's 4,600 staff, greater than 2 million square feet of campus. Their main

campus is at Richland, but they have these satellite offices elsewhere. They have a unique set of circumstances, like some other DOE labs, in that it's privately owned, but largely operated as a DOE laboratory.

DOE, in a sense, as an agency has a lot of this operational control. Because of this unique structure, PNL has to draw their organizational boundaries appropriately, really depending on who they're reporting to.

For example, their boundaries for determining the thresholds on the mandatory reporting rule I discussed earlier can differ. Basically, how they report to Washington State, for example, on pending requirements in the state. There are different audiences they're trying to appeal to, in terms of reporting this inventory.

The results from the inventories that follow are really for all activities that take place on their main campus. But future inventories are going to look at these satellite locations, to really incorporate that, and really to continue improvement over time.

A quick look here at these inventories. We have FY07, FY08, and FY09. This graph really shows the breakdown of emissions, by category, for those three years, and you can see, in this case, purchased electricity is, by far, the biggest source of emissions.

Where does this data come from? Many sources. Folks at the site have done a great job navigating and trying to get this. The FEMP Energy Report has been key, of course, and the FAST database. All the data that goes in there, goes into this inventory.

Their chemical management system – really proactive on that piece. Fugitives, such as their sulfur hexafluoride emissions I discussed earlier, are captured in that chemical management. And employee-based survey – so how do you start getting at employee commuting? They use a survey publicly available from the World Resources Institute.

There are certainly many others out there. They implemented that across their facilities, and actually got over a 50 percent feedback rate on that, and a great sample size, to get a sense about employee commuting emissions. Records from their travel agencies. They talked to their travel agency to get air emissions and emissions from that source.

And then, finally, from their waste management contractor. Again, they're sending their waste offsite. But that is a Scope 3, so working with that waste contractor, getting a sense of those Scope 3 emissions. One thing to note on this chart is that the emissions from the different scope categories are all grouped together to show how they compare with each other. But, in the end, when you do an inventory, the Scope 1, 2, and 3 are all separated and made clearly separate.

Finally, the last thing to mention here is that they did purchase renewable energy certificates in these years, and they're using that to count against their Scope 2 reductions, and only their Scope 2 reductions of electricity.

As you can see, the emissions are broken up by scope for each year, and how the emissions have changed in those years. We see purchased electricity increased in 2009. But this is really the result of a newly installed super computer, which tends to do that.

This is a big issue across the Federal Government and the nation, these data centers and super computers – getting a hold on those, and really reducing emissions from there. They're working now to really come up with a plan to reduce the emissions from data centers.

In 2008, there was a reduction basically because a fairly large building left their control. So another thing we talked about earlier. And, finally, it's difficult to see at this scale, but in 2008 as well, emissions from fleet vehicles were reduced from fuel switching to E85.

That really sums it up there. I want to really finish here with the support that we're offering. I think a lot of the guidance is not out yet. But even before then, there's just a lot of room for information exchange among the agencies. And we, at FEMP, would be some need for technical assistance, so we're really ramping that up.

We're available for briefings, certainly at the headquarters level in person, but also through webinars and things like this. One-on-one technical assistance –we're willing to provide assistance to agencies on identifying data sources, figuring out, once the guidance is issued, the methodologies, and how they relate to your operations, and which ones might be most appropriate for you.

We don't plan on doing the actual inventories for you. I think that's something the agencies should do. But we are here to provide some technical Web-based training. What we really look forward to, hopefully in September or October, is to have – this is really a primer for a much larger Web-based training, maybe two to four hours on the overview of the guidance and assistance.

When that reporting portal comes out, we'll have that both in Web-based and spreadsheet form for you to see, and trainings on that. Onsite training – GovEnergy, of course, a great source for trainings, once it comes out, and then detailed modules on how to actually calculate emissions for each of the sources that you have at your facilities. We're really looking forward to doing that.

Finally, other technical guidance. We've been doing a lot of energy management over the years, but there is some new stuff here, especially on these fugitives in Scope 3. There's an opportunity to provide some more technical guidance on how to reduce those emissions. There's my contact information and a couple of good websites for you to hopefully reference.

Finally, just in conclusion, reducing and reporting greenhouse gas pollution will ensure the Federal Government leads by example in building this clean energy economy. Actions taken under this EO will spawn clean energy investments, which create new private sector jobs. They drive long-term savings. They build local market capacity and foster innovation and entrepreneurship in the clean energy industries. Thank you.

*Kathy Hyland:* Thank you very much. That was very informative. I have some questions that folks have asked, and I'll just start with the first one.

"Many of us are using ENERGY STAR Portfolio, as required for in LEED and Federal Leadership and High Performance and Sustainable Buildings Memorandum of Understanding. Will there be a relationship between the new FEMP database and ENERGY STAR? Or will double entry be required?"

*Matt Gray:* First, great. That's great news, that you're using that tool. It's a fantastic tool available from EPA. We're really leveraging that tool, so you can track energy and water performance with it. But also – not the topic of this – but of the guiding principles, for High Performance and Sustainable Buildings – you can also track performance against that.

The idea, over time, is that Chris Tremper at FEMP and others are developing a database for capturing the results from energy audits. The idea is to have that speak with the greenhouse gas portal I talked about, which should work. And then also for that portal – that auto portal – to work with Portfolio Manager, so you don't have to enter in twice.

The plan is to work with the EPA, once these things are in place – these databases – to ensure just that they're talking to each other.

*Kathy Hyland:* We have a question live at Y12.

*Question:* I'm interested in wastewater treatment. And I want to know…I'm having trouble because I'm in the same room here. I would like to know the type, sources, and calculation methodologies.

*Rob Hardison:* The wastewater treatment is going to depend a lot on whether or not you've got a Scope 1 emission source, which would be a wastewater treatment plant onsite, or a Scope 3, which would be something that's contracted.

The wastewater treatment can be kind of a tricky source, particularly because it's hard to decide if you should be tracking something over a long period of time, to account for a waste that's been put in the landfill in the past. Versus something that you're just looking at, at any given time, so you've got a slug in the waste treatment facility at any given time. We've used the mandatory reporting rule and some EPA methodologies as the basis for the calculation methodologies.

They're very well established and have been tested, and we've tried to focus them on the Federal facilities, to take into account that issue, whether or not it's Scope 1 or Scope 3.

*Kathy Hyland:* Matt, anything to add to that?

*Matt Gray:* No. That's perfect. And the idea is – again, there are these sorts of different methodologies – over time – for all these methodologies, is to get to the more detailed ones, or the more advanced methodologies in wastewater treatment.

*Kathy Hyland:* Okay. The next question is from the National Parks Service. It says, "I know national parks are required to submit energy data and FAST data in separate reports. They use the same data to calculate GHG inventories. Do I understand that when the FEMP portal comes online in October, parks will only have to enter the data once?"

*Matt Gray:* That's a great question. The FAST database, again for fleets. We envision that's going to stick around, and that's still going to be the database that captures that activity-level data. That would automatically go into this greenhouse gas portal, so yeah, you would not have to – the concept is you wouldn't have to actually go in and enter that in.

That'll automatically show up in this portal. It'd be the job of the agency then to validate that that's correct. Of course, there'd be no reason why it wouldn't be, but it's important to validate that. And then the energy reporting – fortunately, at the same time as we were doing greenhouse gases, there was already a plan to make that reporting more Web-based. That'll basically be embedded in this greenhouse gas portal – so the reporting for energy.

*Kathy Hyland:* Next question is from DOE headquarters. "When is the greenhouse gas reporting portal expected to go live? Will it support FY10 reporting?"

*Matt Gray:* Yes. The intent is definitely to support the FY10 reporting. Our hope is that once the guidance is actually issued, very shortly after that – within a month, hopefully – we have a spreadsheet that basically translates that guidance into a spreadsheet.

You can clearly see – "Okay, that's the cell that I need to fill out, and I can apportion it to this person to figure out how to get a number into that cell." So hopefully that's available quickly.

And then we want to translate that spreadsheet into a more Web-based function, and we're going to do that as quickly as possible, and certainly by the time reporting is due. I think in January, that will be up.

*Kathy Hyland:* He had another question. "Will it provide capabilities for sub agency elements to report and be rolled up to the parent organization?"

*Matt Gray:* We still need to figure that out. We're going to work with the agencies on developing all this reporting. Ideally, yes, we would have that. At a minimum, it's going to have the agency-wide

reporting, and then you could have – certainly you could send the spreadsheet, at a minimum, out to anyone – to all the facilities.

But I think, over time, we do want to make it more of an interactive tool. The key, in the early going, is to make sure we have a repository to capture the agency-level data in this first year, just to make sure it's good, and it works well. And over time, the functionalities will really improve.

*Kathy Hyland:* We have a question live from USDA and the Forest Service in Idaho.

*Question:* Hi, Matt. Great presentation. You've been discussing the energy reporting. But I work with the GPRA, or performance and accountability reporting for the agency. In the president's budget, his analytical prospectus this year, he mentioned that sustainability was a high priority performance goal across all Federal agencies.

I was wondering: have you heard anything about the Federal agencies having to report, in their pars or agency financial reports this year, any of the results of what we've been talking about today? Or is it going to solely remain in the realm of energy reporting?

*Matt Gray:* That's a good question, and I'm not sure I have the complete answer at this point. You know we're going to have these sustainability performance plans. Right?

*Question:* Uh-huh.

*Matt Gray:* And that's really going to be the vehicle to really show, to both CEQ and OMB, how the agency is implementing sustainability across the board. I think that's going to be a key function. And within that is budget. Right?

And they're really interested to see not only your emissions and what your plans are, but the budget estimate, how much it's going to cost, and that thing. I think this might relate to that.

*Question:* Okay.

*Matt Gray:* But yeah. I'm not 100 percent sure, at this point, how it's going to relate to GRPA.

*Kathy Hyland:* Thank you for your question.

*Question:* Thanks.

*Kathy Hyland:* I have another question from the Army. "Is the greenhouse gas corporate accounting protocol the same as the EPA DART tool that the Federal Government is supposed to use?"

*Matt Gray:* Initially, when we did the Scope 1 and 2 targeting, back end of last year, that's when we were using the so-called DART tool. That was actually out of the Council on Environmental Quality – working with FEMP, largely, developed that tool. And that was a way to get at – given we had these early due dates on doing the targets, how do we come up with a pretty reasonable estimate of our Scope 1 and 2 emissions?

The purpose of the DART tool was to get at that estimate with the current data available. That's going to be different from what you report in January 2011 for your "comprehensive inventory." And the key is that over time, you're really going to be doing these comprehensive inventories – from 2008, 2010, and beyond.

The DART tool is actually not being used anymore. We're really transitioning into more of this comprehensive inventory, now that we have more time to get it – have it be more comprehensive.

*Kathy Hyland:* This is the last question. There are unanswered questions, and we will try to respond to you directly on your questions. But we have Y12 in Oak Ridge.

*Question:* Yes. I'm interested in what types of greenhouse gas emissions come from an onsite wastewater treatment plant typically. And are there good tools on the Web available for doing those calculations?

*Matt Gray:* I'm going to give Rob another shot – our wastewater expert – if he wants to chime in.

*Rob Hardison:* The primary emissions that are going to come out of an onsite wastewater treatment plant are going to be methane. There are some others, and there are some tools out there that can help to calculate those, based on some various factors. The primary methodology that we've been using for these sorts of things can be found in – the Climate Registry is a basic methodology.

And some of these methodologies have been based on EPA and other organizations that have done some significant modeling and development of those tools. Those are what we use as the basis.

*Kathy Hyland:* Thank you. I want to thank both Matt and Rob for those presentations. This is a series of seminars, as we've mentioned. And there are two more that are upcoming, and I want to roll those before we finish and conclude today's presentation.

*(Music)*

*Kathy Hyland:* We would like your help. Feedback is important. And we would like to continue to offer seminar topics that are relevant to you, and in a format that's relevant to you. And the way we get the information about that is from the evaluation, so we ask that you please complete the seminar evaluation.

There's also a quiz. And by completing the evaluation and the quiz, you can print a course completion certificate for your records. There are multiple ways to access this information. You can go to the FEMP website under training and click on the link for the evaluation.

Also, if you're watching this by webcast today, there's a paper clip, and you can click on that, and that will take you to the evaluation as well. Also, if you registered for this course, you will get an email with a link to the evaluation.

So we really appreciate your giving us a little time, to help us shape the future of this. I want to thank Matt for his presentation today and for his time in preparing this, and also Rob Hardison for his time and to LMI for providing his time to participate in this. And I want to thank the Federal Energy Management Program for sponsoring these seminars.

The next seminar is Thursday, June 3. It's on Advanced Metering, and we'll see you then. Thank you.

*(Music)*

*[End of Audio]*