

**FEMP First Thursday Seminar:
Fleet Management 101; February 3, 2011**

Dr. Timothy Unruh:

Hello, I'm Tim 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 and sustainability, lessened 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 can 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:

Good day. Welcome to the Department of Energy Federal Energy Management Program First Thursday Seminars. This is the first of our seminars this fiscal year, and we're talking today about Federal Fleet Management 101. If you have not already had an opportunity to print the learner guide materials, you can do so now by going to www.FEMP.Energy.gov/FirstThursday.

I want to quickly cover the objectives for our seminar today. After completing this seminar, you will be able to explain the three driving principles of petroleum reduction. You'll be able to talk about the duties of a fleet location manager. You'll be able to discuss the importance of collecting good data in order to manage your fleet. You'll be able to explain different ways of reducing the vehicle miles traveled, or VMT. You'll be able to talk about ways of increasing the fuel efficiency of your fleet. You'll be able to discuss ways to increase your use of alternative fuels. You'll be able to discuss important reporting related to Federal fleets. And, finally, you'll be able to locate FEMP resources to assist you in Federal fleet issues.

Our format today is simple. There will be a presentation followed by a question-and-answer session. We really welcome your questions, and you can send those questions in anytime during the seminar. You can fax them in, you can e-mail them, or you can call them in.

So let me introduce you to the instructors. Our first instructor today is Amanda Sahl. Amanda is the Program Lead for the Federal Fleet Management Program at FEMP, where she oversees areas such as guidance and reporting. Amanda, prior to joining FEMP, obtained her master's degree in environmental science from Yale University. Prior to that, she worked with the Global Environment Facility, and the Environmental Protection Agency.

We also have with us in D.C. at the Forrestal Building Brad Gustafson who will join us later in the program, and also will be here to answer your questions, and I'll introduce him more later.

So before we go any further, let me turn this over to Amanda Sahl to begin the presentation.

Amanda Sahl:

Thank you very much, Kathy. As Kathy mentioned, we'll be talking today about how you as a Fleet Manager can help reduce your fleet's use of petroleum. We'll be talking about a number of different ways to do so, but in the background of all of this are the regulatory requirements. And on your screen now you can see a list of those regulatory requirements. Beginning substantially in 1992, and our most recent requirement was Executive Order 13514.

We have two main target audiences today, and I'll be walking through and highlighting those two now. The first audience is the Headquarters Fleet Managers. Headquarters Fleet Managers are typically involved in setting agency-wide strategies. And they also liaison with the Location Managers to help ensure that the goals that are set out in agency level can be translated to the fleet location level.

Our other main audience today is the Location Fleet Manager. Location Fleet Managers are critical to actually reducing petroleum in Federal fleets, and they're the ones, the boots-on-the-ground who are actually taking operating fleets, and they're working with the Headquarters Fleet Managers to help accomplish those goals.

Before we get into too much depth on how to reduce petroleum, it's important to go quickly over what greenhouse gases are, and that's because Executive Order 13514, as I mentioned earlier, established greenhouse gas emissions as the overarching metric for success for both Fleet Managers and Energy Managers within the Federal Government.

What you see on your slide here is an overview of how we account for greenhouse gases. There are three major scopes, and they range from direct to indirect. Scope one emissions are the most direct emissions, and these are the emissions most Fleet Managers will be concerned with, because they stem from direct combustion and emissions, which is what comes from vehicles. Fleet Managers may also be concerned about their scope two emissions because as we move to electrified vehicles, any electricity used counts towards purchased electricity, which is a scope two emission.

There's also scope three emissions, which are the most indirect of the emission categories, and some important categories in that scope are business travel and employee commuting.

So having discussed greenhouse gas emissions, which you'll see abbreviated here today as GHGs. Let's talk about how we can reduce greenhouse gas emissions, and for Fleet Managers the primary way to reduce greenhouse gas emissions is through petroleum reduction. So that's what we'll be discussing today, but please remember, in the end it's all about reducing greenhouse gas emissions.

You can see a large number of requirements on your screen. There's a long history of regulation in the Federal fleet community, and so there's a lot of different sub-goals that are important to keep in mind to make sure that you're meeting as Fleet Manager. These include creating an agency fleet strategy, requiring plug-in hybrid electric vehicles, or PHEVs, increasing alternative fuel use, requiring low greenhouse gas emitting vehicles, and reporting annually.

Historically increasing alternative fuel use has been one of the primary requirements and focuses for Fleet Managers, and so there are some additional sub-goals under that. These are to acquire alternative fuel vehicles, use alternative fuel in those vehicles, and install renewable fuel stations.

In response to Executive Order 13514, FEMP has developed a guidance document and complimentary handbook. The guidance document summarizes roles and responsibilities as well as all the requirements that you saw on the earlier screen. It goes into, at times, excruciating detail about all the information that you need to know about the requirements, as well as the applicability of those requirements. In contrast, the handbook is really focused on implementation and helping you identify what your role is, as well as how you can accomplish it.

So let's further clarify the difference between these two important documents with a visual. What you see on your screen here is the Federal fleet management framework. This is one of the core concepts of today's training. It's a cyclical process with four main steps to plan, collect, strategize, and implement. The guidance document I mentioned covers primarily the plan stage of this framework, whereas the handbook covers collect, strategize, and implement. We'll be walking through this training using this framework, going step by step throughout.

The other core concept that you should take away from this training today are the three driving principles of petroleum reduction. These are to reduce vehicle miles traveled, increase fleet fuel efficiency, and use alternative fuels. I also like to think of them as conservation, efficiency, and using alternative fuels, or substitution. You can think of them as driving less, becoming more efficient, and using alternative fuels. However you remember them, they're a core concept that you should try to remember and learn today.

So now let's begin walking through this fleet management framework I just mentioned starting with the first step, which is to plan. And the reason we start here, and the reason we start with requirements is because requirements form the baseline for what you have to accomplish as a Fleet Manager. They form your minimum goals, and typically agencies set additional higher goals, and in some cases, locations will set additional higher goals. So by understanding those requirements, we can then set our own goals and figure out where we want to go.

The other thing that the guidance document covers – and I want to point out that what you're seeing on your screen here on slide 13 is just an example of the detail that you can find in the guidance document. We have a number of different flowcharts that will walk you through applicability so that you can really identify which of these requirements apply to your fleet, and your agency, as well as how you can begin to address them.

As you're planning, there are four main pieces that you should include in your plan. And remember that there are two different requirements for planning. So we recommend that Fleet Managers combine these plans into one. And if you'd like to meet both requirements at once, these are the items that you need to include. Those are fleet inventory, petroleum reduction, alternative fuel use increase, and greenhouse gas emission reduction.

Now let's move on to the second step of the fleet management framework, which is to collect. Collect is a very important step, and I can't emphasize this enough, because you can't manage what you don't measure. I'd also like to point out that the quality of your data is just as important as whether or not you're collecting it. Because collecting bad data means that you're then managing your fleet using that bad data. The quality of what you get out of this process really depends on the quality of what you put in.

So I'll be walking you through how we collect that data, as well as what we do once we have it. How can we use that data to produce good fleet management? And a Vehicle Inventory Management system, or VIMS is one way to collect that data. You can collect your vehicle inventory and some other key characteristics and data points including your vehicle's emission requirements, and fuel use. That's an important first step in data collection, and if you can automate this – the more you automate it, the less work you have later on.

A Vehicle Allocation Methodology draws from the data that you've collected in a Vehicle Inventory Management system. It uses that data to form the initial impression, your initial picture of what your fleet looks like. You then use that picture – and that's the first step in a Vehicle Allocation Methodology piece. Where you generate a fleet profile from that picture you've gotten from your VIMS. Once you have a picture of your current fleet profile, you then create an ideal fleet profile and develop some minimum utilization criteria. And the VIM is really about reconciling those two. What do you have now in your fleet, and what do you want to have?

So you use that difference and you reconcile that difference by developing an acquisition plan. And since our fleet goals and the realities of our mission and fleet needs change frequently, it's important to update your Vehicle Allocation Methodology regularly. At least every five years. And I would like to point out that a VAM is required by the Fleet Management Regulations, or FMR. So this is something that every agency needs to be doing.

The goal of this data collection step, having an inventory management system, using a Vehicle Allocation Methodology is to help you optimize your fleet to develop the most optimal fleet you

can have any given moment so that you can be fuel efficient and cost effective while meeting your mission needs and all the requirements out there.

That concludes our discussion of the second step in the fleet management framework, which was to collect. We'll now move on to the third step, which is to strategize. And during this section we'll be talking again about the driving principles of petroleum reduction. Recall that they are to reduce vehicle miles traveled, increase your fleet fuel efficiency, and use alternative fuels.

So let's start with reducing vehicle miles traveled. Reducing vehicle miles traveled is typically one – it's the ugly stepsister of fleet management. This tends to be a step that many Fleet Managers are reluctant to take, and understandably so, because it can be really difficult to implement a lot of these measures. That being said, this is a critical tool in your toolbox to reduce petroleum. And especially in budget-strapped fleets, because this step contains low and no-cost solutions. This often is one of the best ways where you can actually reduce your fleet's use of petroleum at minimal cost.

One of the main ways to reduce vehicle miles traveled is through improving your scheduling and routing. A great example of this was United Parcel Service, which in 2007 took some steps to really improve their routing and scheduling. Things like reducing and minimizing left-hand turns. These simple steps they took in that year saved three million gallons of fuel, and reduced their vehicle miles traveled over thirty million miles. That's really substantial. So you see that taking these little steps can really add up, and at minimal cost.

Now let's move on to the second principle, petroleum reduction, which is to increase fleet fuel efficiency. In talking about increasing your fleet fuel efficiency, I'll cover acquisition, maintenance, driving styles, as well as idling reduction, and then we'll talk about how you can prioritize these different approaches, and figure out where you want to put all your efforts first.

So acquisition. This is an easy way to accomplish increasing your fleet fuel efficiency simply by acquiring more fuel efficient vehicles. Can you get a smaller vehicle? And is there a more advanced technology vehicle, or newer vehicle with higher fuel economy available? That's the easy one, and the one that comes to people's minds first. But let's not forget about maintenance, which is a very good way to improve your fleet's fuel efficiency. By taking simple steps like making sure that your tires are properly inflated, and checking and replacing air filters regularly, you can improve your fleet's fuel efficiency 1% to 2%, depending on where you're starting from.

Driving style is kind of similar to reducing vehicle miles traveled in that it involves a lot of behavior change and can be difficult to accomplish, but just because it's difficult doesn't mean that it isn't worth pursuing. We have national labs within the Department of Energy, and one of these labs has a bus fleet. They discovered when looking at their data that they've collected through their data management systems that some of their bus drivers were consistently getting twice the mileage, or fuel economy, of other bus drivers. Regardless of which vehicle they were driving and which route they were driving, these drivers were always getting twice the fuel economy. Now not all of us can be as efficient drivers as those bus drivers, so it's important to look at what they were doing, what these efficient drivers do to make them more efficient.

There's some simple steps you can take and you should share with your drivers such as drive at reasonable speeds, at slower speeds on the highway especially you can conserve a lot of fuel. Also, use cruise control when it makes sense. Especially on the highways again, but not in mountainous regions where it can actually use more fuel. And, most importantly, avoid those jackrabbit starts and stops. Make sure that you're accelerating smoothly, and braking softly. These little steps can go a long way to improving your fuel economy, and soon we can all become the efficient drivers that we found out in the labs.

Finally, I'd like to talk about idling. Idling is getting you zero miles per gallon. It's a real waste of fuel, and so it's important for a Fleet Manager to identify where their vehicles are idling, and once

you understand when the idling is occurring, you need to be able to recognize the difference between what I like to call legitimate and illegitimate idling.

And what I mean by that is that some idling is really necessary. There are auxiliary power needs. For example, police radios, or lights, or heating and air conditioning where it's really necessary. And I don't want to discount those at all. In fact, it's very important to identify when the auxiliary power need is real. If it's an illegitimate need as I call it, then it's very easy to address. It's really about just educating your drivers, and making sure that they're turning off the vehicle when they are not moving. And it's important to know that basically more than a second stopped it makes sense to turn off the vehicle. So at any given point, it is more fuel efficient to turn off the vehicle than to sit there idling.

Now let's talk about those vehicles where they have legitimate idling needs. What can we do for those? They tend to be vehicles like heavy duty trucks or law enforcement vehicles. We've also identified flight line support vehicles as having a lot of legitimate idling needs. The great news for these vehicles and these fleets is that there are ways to actually reduce or eliminate idling without losing that mission need. So there are idling reduction devices that use either a battery, or a small gas engine, or diesel engine, or actually that plug into a grid to obtain the power needed for these auxiliary systems without running a V8 engine, or large or smaller, that's meant to propel a vehicle very quickly down a road. So there are ways – there's always ways to reduce idling. It's important to recognize those and address them.

Now we've talked about the acquisition, maintenance, as well as driving style, and idling reduction. These are great ways to increase your fleet fuel efficiency, but it's also important for you to understand where to target those resources. Even once you've chosen your approaches, which vehicles? Which portion of your fleet do you want to target? And so to do that logically you just look to where you're using the most fuel.

And if you look at this chart on your screen, what you'll see is that basically the least efficient vehicles use substantially more fuel than the more efficient vehicles. And that means that that bus driver at our national lab that went from five miles per gallon to 10 miles per gallon was saving 1,000 gallons of fuel a year. Very substantial. Versus moving from a somewhat efficient sedan of 25 miles per gallon, to a very efficient sedan of 35 miles per gallon will save only about 100 gallons a year - 100 gallons versus 1,000. So look to where you're using the most fuel; those are the areas you want to target for increasing your fleet efficiency.

Kathy Hyland:

Now we're going to take a break, and Brad Gustafson will speak to us from Washington, D.C., and then we'll come back to Amanda.

Brad Gustafson:

Hello. My name is Brad Gustafson, and I'm the Supervisor for Applied Technologies at the Department of Energy's Federal Energy Management Program.

The Federal Government operates more than 650,000 vehicles including sedans, buses and trucks, and consumes more than 380 million gallons of petroleum every year. As I'm sure you know, the Federal fleets operate under numerous mandates, including petroleum reduction, greenhouse gas reduction, and a requirement to replace petroleum fuels with alternative fuels. Efficient fleet management is critical to meeting these Federal goals and decreasing our nation's reliance on petroleum.

In support of Federal agencies, FEMP offers guidance and technical resources to help Federal Fleet Managers plan their fleet strategies, collect critical data, and implement action plans to meet the many mandates.

First an update on FEMP guidance. To promote a thorough understanding of the requirements, FEMP provides guidance on legislative and executive order mandates. For example, we developed and published guidance for Federal agencies on Executive Order 13514, Section 12, which is available on the FEMP website. This guidance not only addresses the executive order

requirements, it also provides a comprehensive summary of all Federal fleet requirements related to greenhouse gas emissions, and petroleum consumption, making this document a tremendous resource.

As a compliment to the guidance document, the comprehensive Federal fleet management handbook was developed to help Federal Fleet Managers identify and implement measures to meet and exceed the Federal fleet requirements outlined in the guidance. To further assist you with fleet management needs, FEMP offers a range of resources and tools on its website, such as the database of frequently asked questions about alternative fuels, advanced vehicles, and fleet management. Also available, the monthly Federal fleet newsletter, detailed fleet success stories, and an annual events and reporting calendar.

FEMP sponsored and cosponsored conferences, workshops, national expositions, training seminars, and roundtable discussions helping network with other fleet professionals. Annual events provide industry interaction, education, and professional development opportunities.

For example, the INTERFUEL working group meets monthly in Washington to address critical fleet topics, network, and learn from one another. Members are actively committed to enabling Federal fleets to comply with laws and regulations. The annual GSA FedFleet conference brings together Federal Fleet Managers, and industry. Borrowing from GSA's Janet Dobbs, FedFleet is a unique one-stop educational experience that consolidates a comprehensive collection of fleet management, automotive procurement, aviation, and marine educational sessions into a single venue.

Another example of public-private collaboration is Industry Day. This annual event encourages the development of alternative fuel infrastructure by assembling Federal Fleet Managers and alternative fuel suppliers to identify and find solutions to barriers to alternative fuel infrastructure development. The event's primary goal is to develop nationwide alternative fuel infrastructure.

Discussion of DOE resources available to Federal Fleet Managers would hardly be complete without recognizing the work of the Department of Energy's Clean Cities Program. Clean Cities enables and supports local decisions to adopt practices that contribute to the reduction of petroleum consumption. Through a network of 90 volunteer coalitions, Clean Cities develops public-private partnerships to promote alternative fuels, and advanced vehicles. Their services are available to Federal agencies, and we encourage you to visit the Department of Energy's Clean Cities webpage to learn more about fleet coalitions in your region.

We hope you will take advantage of these many resources as we work together to accelerate our transition from a petroleum-based Federal fleet to one that increasingly runs on alternative fuels, and drives the new clean energy economy. Thank you for taking the time to join us today, and we look forward to working with you.

Kathy Hyland:

Thank you, Brad. Let me tell you just a little bit more about Brad before returning to Amanda. As Brad said, he serves as the Supervisor for Applied Technologies Services at FEMP. Prior to joining FEMP, Brad was an employee of the Lawrence Berkeley National Laboratory where he worked on Federal energy initiatives. Since he's been at FEMP, he's served as a project facilitator for energy savings and performance contracts, which is our topic of our next seminar. And he's also been a Project Manager in the areas of technology transfer, utilities, and Federal fleet. So thank you, Brad. Now back to Amanda.

Amanda Sahl:

Thank you, Kathy. We're going to pick up now where we left off, which is in the third step of the fleet management framework, the strategize step. And we've already gone through the first two driving principles of petroleum reduction, which were to reduce vehicle miles traveled, and increase fleet fuel efficiency.

So now let's pick up with the third principle of petroleum reduction, using alternative fuels. Alternative fuels are a great way to displace petroleum use. And because they displace petroleum

use, you can get up to 100% reduction of petroleum. Listed on your slide here are some of the primary fuels that Federal fleets have used to reduce petroleum. And those are E85, CNG, LNG, LPG, biodiesel and electricity. I'll point out that E85 refers to a blend of 85% ethanol and 15% gasoline.

As we use alternative fuels, it's important to remember that we're actually required to do so. So we're required to purchase alternative fuel vehicles, and then to use the fuel in any alternative fuel vehicle we have unless you receive a waiver from DOE. Waivers are only granted if you do not have access to alternative fuel. So if you have access to alternative fuel, you must be using that alternative fuel. And this is a good thing to remind drivers about because they may not be aware that they're actually required to use the fuel. Vehicles that you have to use the fuel in include E85 FFEs, biofuel CNG or LNG vehicles, and biofuel LPG vehicles.

So if you want to use alternative fuel, how do you develop an alternative fuel strategy for your location? That's a great question, and the way you start out is by understanding the potential demand for that fuel used at your location. So look at your current fleet and think about that ideal fleet you've identified through your VAM - or Vehicle Allocation Methodology. How much fuel could you possibly use? Once you understand how much fuel you could use, then understand what existing fuel infrastructure exists, both conventional and alternative fuel infrastructure.

Now that you know the potential demand, as well as what infrastructure options are there for you, you can develop a site-specific AFV or biodiesel vehicle acquisition strategy, and then develop an infrastructure development plan if needed.

As you're developing a vehicle acquisition strategy, it's important to recognize that there a lot of fuels and vehicles out there, as well as that each one of these vehicles and fuels has some unique costs and benefits. Some vehicles come with higher upfront costs, and many vehicles may come with lower operating costs. So keep those characteristics in mind, and then if you're considering a vehicle or a fuel type that requires dedicated infrastructure, consider your location.

Do your vehicles have a set route that they tend to go? If they do, then you can probably find one spot where it would make sense to put or try to get the private sector to put in a station. Or do you have centralized refueling? Again, if you have centralized refueling, it's easy to identify a logical location to put that dedicated infrastructure. And other different technologies you see on your slide here. Gasoline as a comparison technology, and hybrids are the only vehicle that don't require dedicated infrastructure.

So developing that infrastructure. You have a plan and you know that you need infrastructure. What do you do? Well, for E85 and biodiesel, you may have the option to convert an existing tank. I say may. It really depends a lot on the characteristics of your site, and that's a good easy way to get alternative fuel at your station if it's an option to you. It tends to be less expensive.

Now the other fuels, E85, biodiesel, CNG, LNG, and electric vehicles and their supply equipment require dedicated infrastructure most of the time, and getting that dedicated infrastructure does come at a cost, and cost will vary depending on your location. So take a look into your infrastructure options to see which infrastructure will be most cost effective and fit with the fuel availability for your fleet.

That concludes our discussion of that third step in the fleet management framework, which is strategize. We've now covered all the driving principles of petroleum reduction, and are going to go into discussing implementation, the fourth step of the fleet management framework.

In discussing implementation, we'll talk about acquisition, reporting and monitoring, and what FEMP can do to help you get your job done.

So first, Federal fleet acquisition. Remember that slide I showed everyone at the beginning of the presentation with the slew of requirements? Well, some of the requirements listed – three of them

were acquisition requirements. So agencies are required to purchase alternative fuel vehicles. At least 75 out of 100 vehicles need to be alternative fuel vehicles, and there is a credit system for that. You also must purchase low greenhouse gas emitting vehicles. And when they become cost effective, or commercially available and cost effective, you'll be required to purchase plug-in hybrid electric vehicles.

So keeping those acquisition requirements in mind, let's talk about what strategies you'll need to implement and what actions you'll need to take.

We walked through the driving principles earlier, and we can actually predict that there are some strategies and actions you'll need to take based on which strategy you've chosen. So for reducing vehicle miles traveled, a logical action that you may need to take is to dispose of or reduce some of your vehicle stock. Whereas if you've chosen to increase your fleet fuel efficiency, you may need to purchase or acquire higher fuel economy vehicles and/or idling reduction equipment.

Finally, if you've chosen to use alternative fuel, you'll of course need to acquire alternative fuel vehicles, EVs or diesel vehicles to support those strategies.

There are a number of tools available to you as you go to acquire these vehicles for your acquisition strategy. GSA offers Auto Choice, which is actually a required source for any vehicle purchases. GSA also has a Fleet Services division that will lease you vehicles at a very cost competitive rate. And EPA has a green vehicle guide where you can look up whether or not your vehicle is low greenhouse gas emitting so you can find the greenhouse gas score for vehicles on EPA's website.

Finally, FEMP has developed an optimization tool that can help you develop an optimal acquisition strategy, and I'll talk more about that in a moment.

All of these different tools are available to help you accomplish some of the main strategies for acquisition, which should be to replace your lowest fuel efficiency vehicles first, and place your alternative fuel vehicles that you do purchase where alternative fuels exist or will soon exist.

We're talking about this last stage of the fleet management framework to implement, but it's really not the last step because this is a continuous process. It's a cyclical process, and it requires continuous evaluation. So as you're looking to implement, it's important to always then begin to evaluate how you're doing, and assess whether or not your mission needs have changed, your fleet needs have changed so that you can then change your plans as appropriate, and change your strategies accordingly.

Data collection is of course very key to any evaluation, and reporting and monitoring really come into play here. So as a location Fleet Manager, your job is to ensure complete and accurate recordkeeping, as well as complete and accurate response to data calls. You can also help yourself by reducing your reporting workload if you develop a good data management system. A good Vehicle Inventory Management system will allow you to regularly download reports so you can see how you're doing, and also respond easily to data calls and annual reporting requirements.

This is a list of a number of different requirements that you see every year. In December, there's the FAST reporting cycle from October 15 to December 15. There is also some FAST data collection that occurs in June for the EPAct Section 701 waiver requests, and the EISA Section 246 data. OMB also has a twice-annual process where they have a scorecard that assesses agencies on their performance, actions and plans towards meeting agency goals.

We've covered a lot today. All of the fleet management framework and the driving principles of petroleum reduction, and I know it can get really overwhelming so I want to talk again about what FEMP has developed that can help you get your job done.

Remember that we have a guidance document and handbook out there available for you. Our guidance document on Executive Order 13514, Section 12, covers all the Federal fleet requirements that you should be concerned about, and it's a great resource and reference tool for you to look up what requirements you should be concerned about, which requirements apply to you and your fleet.

The handbook document covers all the strategies we've talked about today. The driving principles, the petroleum reduction, and helps you get to the implementation so that you can achieve and exceed your goals.

FEMP also has an excellent website that I'd encourage you to visit. www.FEMP.energy.gov. This website includes sections on Federal requirements, links to the actual language of the law, technology resources, information on infrastructure development, data analysis, and trends, as well as information on our INTERFUEL committee, other resources available to you, and of course, contact information.

I'd also encourage you to visit another website, and that's the AFDC as we call it. It stands for the Alternative Fuels and Advanced Vehicles Data Center. You can access it at www.AFDC.energy.gov. This website is just as its name implies, a great resource for anything you want to know about alternative fuels or advanced vehicles. I encourage you to visit the website and browse through it to get some great answers to questions you may have on these two items.

It also a number of great tools and probably the most important part of the AFDC and the most important online resource available to Fleet Managers is the Alternative Fuels Station Locator. The station locator is available from your computer, or on a mobile device, and it basically allows you to search a site or a route to figure out what alternative fueling infrastructure is near where you are, or are going. And it will let you search by fuel type, and identify information such as is the station publicly accessible, and the phone number for the station so you can call ahead to verify.

FEMP also offers technical assistance – direct technical assistance to agencies and Fleet Managers. And we're about to issue our first fleet call for technical assistance. It will be issued in the coming weeks, and I encourage you to subscribe to our Fleet Files newsletter to be notified. I'll tell you a little bit more on how to do that in a moment.

So why would you want to apply for some technical assistance? Well, FEMP has a lot of expertise and experience in giving technical assistance to agencies. For example, things like site visits and data quality review. With this most recent FAST data call, we identified a number of anomalies for four different agencies and have worked with them to resolve those issues and identify if any data changes are needed so they can get the most accurate data available.

We also offer tools such as fuel use tracking, so we can help you understand on a monthly or more regular basis whether or not your drivers are putting alternative fuel into your alternative fuel vehicles, and identify those locations where you could be using more fuel.

This is just a sampling of some of the technical assistance we offer, and I encourage you to give us more ideas on things that you need help with. We stand ready to help you with this. And I'll be going through some of the specific tools that we have available to agencies in the coming few slides. Things like the FleetAtlas, the TransAtlas and optimization tools.

On the AFDC, some great tools you can find are TransAtlas, and a light duty and heavy duty vehicle search. You will also find for fleets, FleetAtlas, which was developed from TransAtlas, and this is a secure site where you can enter your fleet data and then view it visually. It's a really good way to help with an alternative fuel use strategy. So if you're trying to increase your access to alternative fuel, increase your alternative fuel vehicle stock, or just to try to get the fuel into

your vehicles, you can see a lot of trends and identify where the best places are to do that visually using FleetAtlas. And this is available free to any agency or Fleet Manager who'd = like to use it.

We also offer something called the Fleet Optimization Tool. This is a tool that we've developed recently to help develop an optimal acquisition strategy for an agency. This tool really helps you identify ways you can be more efficient about your vehicle acquisition, and to exemplify that, let me talk about an analysis we did.

We looked at a small Federal fleet, about 1,200 vehicles, and compared their actual FY10 or fiscal year 2010 acquisitions to what they could have done. What would our model, what would we have recommended they do? Well it turns out with the same budget, they could have tripled their estimated petroleum reduction, dramatically increased their use of alternative fuel, and deployed some new technology vehicles that they were not able to do all for the same price and the same cost.

Turns out there's just a lot of little inefficiencies that are out there because it's really difficult when you're at a site to identify what is optimal for your agency. So using this tool on an agency-wide basis is one of the best ways to get to that optimal acquisition strategy. And that tool is now available either through our call for technical assistance, or directly from the National Renewable Energy Lab, who developed this tool for us, through a Work For Others agreement.

FEMP also offers training for agencies. This First Thursday is a great example. We have another Fleet-related First Thursday Seminar coming up in June. On June 2 we'll be talking about electric vehicles as well as their infrastructure, and the challenge is for Fleet Managers working with Facility Managers to develop infrastructure.

I'd also encourage you to attend the FedFleet conference that Brad mentioned earlier. That conference is annual, and is a great way to learn more about the tools and resources available for Fleet Managers. There's an excellent exhibit hall and over 50 sessions on Federal fleet management including 10 from DOE on how to reduce your petroleum use.

I've mentioned a number of times our web-based overview of the guidance document and handbook. And it's worth mentioning that you can access the guidance document and handbook through your learning guide for today's session. We also offer specialized training upon request, so if we don't have something out there that meets your needs, we're willing to work with you to develop that.

Now when I was introducing technical assistance I mentioned our call for technical assistance is coming up in just a few weeks. If you'd like to be notified when that call is issued, please subscribe to the Federal Fleet files. This is a monthly newsletter and to subscribe you should e-mail Ryan Daley at Ryan.Daley@NREL.gov, and you'll see that e-mail address listed on your screen.

In conclusion, as we're making decisions as Federal Fleet Managers, it's very important to remember the tools and resources that are available, but also the strategies that are in your fleet management toolbox, and those are to reduce vehicle miles traveled, increase fleet fuel efficiency, and use alternative fuel.

Kathy Hyland:

Thank you, Amanda. Before we go to questions, I would also like to refer you to the Learner Guide for this course. One of the things that it has is a glossary that was very helpful to me, because there are a lot of acronym in the Federal Fleet world, so if the PHEVs and everything are a bit confusing, I encourage you to access that glossary.

On your screen are the different ways that you can call and ask your questions, and we encourage you to do so. You can speak live with Amanda or Brad at this point. I have some questions that have already been submitted, and we will begin with those.

Amanda and Brad, what is the best advice you have for Facility Managers in rural areas that have poor access to alternative fuels?

Amanda Sahl:

Well, Kathy, I would say that for any Fleet Manager, the issue of looking at the options for driving principles for petroleum reduction and matching them to your fleet is really important. So if it's determined you're in a rural area and you don't currently have access to alternative fuel, then you want to look at well, can you develop the demand, or aggregate the demand to draw in some private sector development for that alternative fuel? But that's just one of the three driving principles.

So if you can't use alternative fuel, there are other options available to you, such as the reducing vehicle miles traveled, and increasing fleet fuel efficiency.

Question:

To help the implementation of these projects, is it possible now or maybe possible in the future to do fleet management work under a third party finance performance contracting, like the ESPC vehicles?

Amanda Sahl:

That's a great question, and I don't know if Brad's with us. I think he might be better fit to answer that if he's willing.

Brad Gustafson:

Sure, Amanda, I'll take that one. At this point in time, alternative financing, energy savings performance contracting in particular, is not available to us as Federal employees because we are talking about mobility assets here and mobility assets are not currently included in the authorizing statutory language. So sorry, we can't go there at this point, but I can tell you that there is an effort underway to modify that language so that we can take advantage of it to update our mobility assets and the infrastructure necessary.

Kathy Hyland:

Thank you, Brad. I have another question. What can we do to get more alternative fuel stations closer to our base? We don't have many resources.

Amanda Sahl:

It can be difficult, and if you're really looking to develop alternative fuel, then you need to aggregate demand. So you need to develop enough demand to rationalize installing your own infrastructure, or to draw in and encourage private sector development. And that's really – you have to meet some minimum levels of alternative fuel use for that to make sense. But it doesn't have to come just from your own fleet. I'd really encourage you to work with the Clean Cities coordinators out there. They can help you understand what different alternative fuel vehicles and resources may be in the area, as well as other fleets that may be interested in working with you to aggregate that demand. Brad, did you want to add anything to that?

Brad Gustafson:

Thanks, Amanda. I would add one thing. You've seen a number of URLs, and some of these get fairly complicated. It's fairly easy to find Clean Cities. If you go to your browser and you type Clean Cities, it will more likely than not be the very first one that pops up, and the first entry on the Clean Cities page is for the regional coordinators, and you can go there and you can get direct e-mail, contact information, and phone numbers to talk with the local or regional Clean Cities folks. They may be able to help you. They already know about many of the fleets in your region or your area who are looking for alternative fuel, but they just can't seem to find it. They're facing the same struggles that you are. So I would really add to Amanda's thoughts on that.

And there's an army of folks out there whose job it is to get infrastructure in place, and I would encourage you to contact them.

Kathy Hyland:

Good. Thank you. I have another question. Are the alternative funding sources available to our agency to increase our use of electric vehicles, which is part of our acquisition strategy?

Amanda Sahl:

That's a really good question. Electric vehicles at the moment are very new, and do have high upfront costs, so that is an issue for Fleet Managers. But remember that this is a really new technology and we expect that the cost for these vehicles will come down substantially.

At the moment there are no funding resources that I'm aware of for these vehicles in particular. However, they're not yet widely available and GSA is working on a pilot of these electric vehicles. So as they become available, I know GSA is doing all they can to make them available to Federal Fleet Managers as well as to make sure that they're available at the most reasonable cost possible.

- Kathy Hyland:* Great. I have a question from from Annapolis. Where do you find suppliers for E85 or ethanol? Is there a list of providers, and how do we get E85 in bulk?
- Amanda Sahl:* E85 in bulk. Well, in terms of finding fuel suppliers, generally I guess this is if you have your own infrastructure that you're working on, and DLA Energy, formerly known as DESC, is one of the best resources for Fleet Managers out there right now, because they have established large contracts for some of these fuels. If DESC isn't available to you, then we can certainly work with you offline to identify some fuel providers in your area, or you can once again work with your Clean Cities coordinators who tend to be very knowledgeable about what fuel providers are in your area. Brad, do you have anything you'd add to that?
- Brad Gustafson:* I would certainly support the idea of contacting the Clean Cities folks once again, but also contact us at FEMP. We've been sponsoring the Industry Day meetings with industry, and those are the fuel developers, and we have a lot of contact information there. We'd be happy to work with you as well, and help you find the fuel that you need.
- Kathy Hyland:* Okay, next question. I'm a new Fleet Manager. I am a bit confused about all the mandates that I'm dealing with. Can you help me with that? Amanda?
- Amanda Sahl:* Sure. Brad, did you want to take that?
- Brad Gustafson:* Yeah, I'll give that one a shot. First of all, I would highly recommend that you go to the FEMP website and have a look at the guidance document, and the comprehensive guidance document. They're very good. They're very complete. And in particular, for understanding the requirements that we are all dealing with. There's a very, very nice table, Table 1-1 in the document, which covers all of those requirements from A to Z. There's also a table which will tell you if your particular agency is subject to those requirements and which ones.
- And finally, in the comprehensive guide later on in the guide there's a – I believe it's in chapter eight, there is a calendar of events to show you just when at each point of the year these various requirements kick in. When is the FAST system open for data entry, for example. When are the 701 waivers due, and so on.
- So again, the guidance documents are a great resource for anyone who's managing a Federal fleet. And I would encourage you to grab those and even print out a couple of copies to keep nearby as a reference.
- Kathy Hyland:* Thank you. Next question. I think my campus could really benefit by adding electric vehicles and charging stations. Are there introductory resources I could use to get buy-in from the decision-makers on this?
- Amanda Sahl:* Well, FEMP is in the process of developing some introductory materials. I'd also point you to the AFDC, which I mentioned earlier at www.AFDC.energy.gov. They have a great section on electric vehicles that includes information on infrastructure.
- That being said, you're also welcome to contact me or anyone within FEMP and we'll work with you to get you the information you need up until we have some of those basic materials provided.

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- Kathy Hyland:* Okay. A related question. If we plug in electric hybrids in our buildings at our site, how does that affect the overall metering and accountability for electricity at our facility? There's a follow-up question, but if I could just start you on that one.
- Amanda Sahl:* Sure. Well, if you're plugging vehicles into your building, then you can report that electricity use into FAST. So that's your annual FAST reporting, or through FAST which is the Federal Automotive Statistical Tool. So you should report that electricity use if it's being used by vehicles, and it counts towards your alternative fuel use goal. So it's kind of a win-win.
- But the thing is that you should also be working with your Facility Manager because they'll need to report that electricity use for greenhouse gas purposes. So long as you're reporting it in FAST and the Facility Manager is reporting it through their annual reporting mechanisms, then we'll make sure that the data is properly captured and allocated, so that it isn't counting against a the facility energy intensity goals.
- Kathy Hyland:* Thank you, and you answered the second question there.
- Amanda Sahl:* Oh, that's good.
- Brad Gustafson:* Amanda, I'd like to add something to that. You want to make sure as a Federal Fleet Manager that you're working with your facilities folks so that they aren't charged with having this fuel, this electricity adding to their BTUs per gross square foot. So it's subtracted from their numbers, and added to yours, and in your column it's a very positive because it is considered a renewable fuel. So you very much want to make that happen.
- And in terms of measuring, there are a number of ways to do it. We follow the protocols which were established through the measurement and verification standards used for buildings. There's a couple of ways of doing it. You don't have to meter every kilowatt-hour. That would be ideally where we would like to see the data come from. There's a meter, you plug in, you just read it out periodically. It doesn't have to be quite that sophisticated. You could look at your vehicles and determine what the kilowatt-hour per consumption is per mile, let's say, and then use that as an average. But you would have to have some reasonably good sampling data and you would have to demonstrate through a plan that you are following a protocol that we would expect a plan, we would expect some quality assurance in the data, too. But I'm making it sound perhaps more complicated than it needs to be. It's pretty straightforward. I can see a plan less than a page. Very straightforward.
- Amanda Sahl:* Yeah, just to follow-up on that, if you're using electric vehicles, either low speed electric vehicles, or full speed electric vehicles, there are now a number of companies out there that provide electric vehicle supply equipment. And we'll go into some of this more in our next First Thursday training, but most of those electric vehicle supply equipment are electric chargers as we sometimes call them. Those come with meters on them. And they're good enough that those can capture the data that you need for your reporting purposes. I bring that up because it's one of the best ways for you to actually provide electricity to those vehicles safely.
- Kathy Hyland:* Next question. You hear a lot of rumors out there. What are the real environmental cost of E85, and biofuels? And are there external costs to biofuels that make them less cost effective than other alternative fuels?
- Amanda Sahl:* I think I'll let Brad handle that one. Do you want to start, Brad?
- Brad Gustafson:* Sure, Amanda. There is an emissions guide in the comprehensive guidance document that will give you the kilograms per gallon equivalent, I'm guessing gallon equivalent, I believe for each of the different fuels – diesel, gasoline, and all of the alt fuels as well.
- There's been a lot of debate as to whether or not corn-based ethanol really is environmentally beneficial. Our biomass group here at DOE has demonstrated that there is an 18% reduction in

emissions, carbon emissions, through the use of corn-based ethanol versus gasoline. The Holy Grail is cellulosic ethanol, and the reduction in emissions there is a whopping 86%. The good news is that while we are faced with corn-based now, there is an awful lot of work underway, and there are sites producing cellulosic ethanol as we speak in a pilot and demonstration quantity. We expect in the next couple of years for those to become mainstream, and the stock will change very much from corn to cellulosic.

If you look at some of the other fuels, diesel, for example, the carbon emissions from diesel may be a little higher than some of the other fuels, but if you look at the efficiency. For example, if you're driving a gasoline vehicle, and you're getting 28 miles per gallon, the new diesel vehicle is running more like 45 miles per gallon, suddenly the equation changes.

So the point there is don't get too caught up in those individual numbers, because there's more to it than that. But if you're using an all-fuel, whether it's E85 or a B20 biodiesel, there will be an environmental benefit in terms of reduced emissions.

Kathy Hyland: Okay. Thank you. Here's a good one. It's hard to convince a 6' 6", 250-pound Marine to give up his pickup truck for a neighborhood electric vehicle. Any advice?

Amanda Sahl: Well, I'm assuming here that when you say giving up his pickup truck, we're referring to the pickup truck he uses for his government job. So I'm not going to get into how to convince a Marine to give up his personal pickup truck.

That being said, I think the first piece I'd like to say on this is yes, we want to convince them that this is the right thing to do, but in the end, let's keep in mind that this is a government asset, and we have to be doing what's responsible for Government Fleet Management. So it's not ultimately an issue of convincing, but we do want to approach it that way.

So how do you convince them then, to get to the core of the question. I think for me the real issue, especially for military personnel, is energy security. And so while he may enjoy that pickup, and might like riding around in it or the way that he feels sitting in it, it's important to remember that for energy security purposes, every step we can take to reduce our petroleum use makes us that more energy secure, reduces our need for military action in this area, and really puts us in a much better place to accomplish some of our goals.

Kathy Hyland: Our next question is from Washington, D.C. It seems like there may be new fleet requirements coming. How do we stay abreast on what's coming?

Amanda Sahl: That's a great question. The Federal Fleet Files newsletter that I mentioned is a really good way to keep up with that, because through that monthly newsletter we at FEMP are always monitoring the status of these things, and will update you through that newsletter.

That being said, we'll also be updating our guidance and handbook documents as necessary. There tends to be a longer time lag on updating those, so if you get the newsletter and you can see what's happening, and then we'll provide some updated guidance. We're always available, and you can contact us directly if you have any questions. There are a lot of bills and things on the Hill now, and that's pretty common, and there's always something up for discussion.

So we keep an eye on that so that you don't have to spend all of your time keeping an eye on it. Just subscribe to the Fleet Files and you'll be updated when something happens.

Kathy Hyland: Okay. This question is, how can we improve our annual compliance reporting and FAST reporting? We're not very efficient at this point.

Amanda Sahl: Well, reporting efficiently really depends on having the data to report. So we've developed some great tools recently with FAST so that if you have your data in a data collection system, you can

upload it really easily. But having that data collection system, that Vehicle Inventory Management system is really the first step to making your reporting a lot easier.

If you have all your data in one place, you can see how it's a lot easier to put it all in one new place, and to report it. So I'd really encourage you to figure out a way to get that Vehicle Inventory Management system up and running, working for you, because it's not just the annual reporting. We know that we get regular data call requests from colleagues and from headquarters. They're very frequent, and a real time stress and strain for location Fleet Managers. The best way to reduce that – or not reduce it, but address it is through that Vehicle Inventory Management system.

Kathy Hyland:

Okay, that's our last question. So I would like to thank Amanda and Brad for their time today. Our next seminar is on Thursday, March 3, and it focuses on energy savings performance contracts. And I would like for you to just view the remainder of our fiscal year 2011 sessions.

There is an evaluation and quiz for this seminar, and we would really encourage you to complete those. You can access the evaluation and quiz in one of three ways.

If you registered for this course, you will receive an e-mail with the link in it. If you're watching this on live streaming, there's a paperclip icon that you can access, or you can access www.FEMP.energy.gov/FirstThursday and that will also have your evaluation.

So in order to continue to improve these courses, we'd like for you to complete that evaluation. Give some feedback to Amanda and Brad, and give them ideas for the future. And as well, there's a quiz, and if you complete this evaluation and quiz, you can print a course completion certificate for your training records. So we encourage you to do that.

I'd like to thank the Federal Energy Management Program for sponsoring these First Thursday Seminars, and I'd like to thank Amanda Sahl and Brad Gustafson for their time today.

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