



U.S. General Services Administration

# Fleet Sustainability & Telematics

GSA Office of Fleet Management  
Energy Exchange 2016



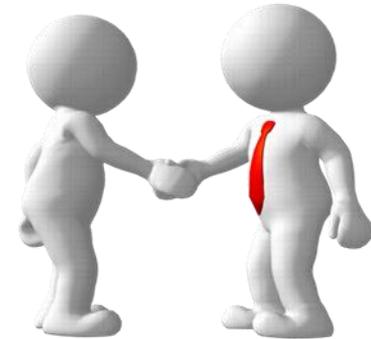
# GSA Fleet Management Value Proposition



Right Vehicle



Right Price



Great Service

*and the data required to effectively and efficiently manage a fleet*

# Agenda

- **Fleet Sustainability**
  - Federal Mandates
  - Implementing Sustainability
    - Electric Vehicles, Geographic Considerations, and Fuel Considerations
  - Current GSA Offerings
  - FY 16 Electric Vehicle Initiative
  - Looking to the Future: Plans for FY17 and Beyond
- **Telematics**
  - Federal Mandates
  - Current GSA Offering
  - Other & Future Telematics
- **Conclusion and Contact**

Mandates, Tools, and Solutions

# **FLEET SUSTAINABILITY**



# Federal Sustainability Mandates

Law/Mandate	Requirements
Executive Order 13693: Planning for Sustainability in the Next Decade	<ul style="list-style-type: none"> <li>• By 2020, 20% of new fleet acquisitions must be comprised of zero emission and plug-in hybrid electric vehicles               <ul style="list-style-type: none"> <li>• Increase to 50% by 2025</li> </ul> </li> <li>• Reduce federal fleet per-mile greenhouse gas (GHG) emissions by 30% by 2025 from a 2014 baseline</li> <li>• Plan for refueling infrastructure that can record vehicle level refueling data</li> </ul>
Energy Independence and Security Act of 2007 (EISA)	<ul style="list-style-type: none"> <li>• Acquire only low-GHG emitting vehicles with some exceptions               <ul style="list-style-type: none"> <li>• MY16 Passenger Cars: 300 g/mile max CO2 emission</li> <li>• MY16 Light-Duty Trucks: 375 g/mile max CO2 emission</li> </ul> </li> </ul>
Energy Policy Act 1992/2005 (EPAAct)	<ul style="list-style-type: none"> <li>• 75% of light duty vehicle acquisitions must be alternative fuel vehicles in metropolitan areas</li> </ul>



# Why Electric Vehicles?



**GHG Emission  
Reductions**

***No fleet GHG emissions  
counted from use of electricity***

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**Operating costs**

***Lower fuel cost per mile and  
maintenance costs***

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**Support market  
development**

***Lead by example in growing  
the electric vehicle market***

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**Performance**

***Quiet, comfortable, and quick***



# Electric Vehicle Features

	HEV	PHEV	BEV
Motor/Engine Type	Electric motor and internal combustion engine	Electric motor and internal combustion engine	Electric motor
Fuel Source	Gas and diesel	Electricity <b>AND</b> gas or diesel	Electricity
Battery type	Nickel-metal hydride*	Lithium ion	Lithium ion
Range	500+ miles	19-53 all-electric 420+ combined miles	70 miles*
Meets EO 13693 Zero Emission Requirements	<b>X</b>	✓	✓

\*Based on current model year vehicles available through GSA. Model year 2017 and later may have greater range

# Knowing Where and How to Deploy Electric Vehicles

- Average distance traveled per day or per trip
  - 60 miles or less for battery electric vehicles (this is increasing)
  - Plug-in hybrid electrics can switch to gasoline for 400+ mile trips
- Operated primarily on paved roadways
- Missions requiring start-stop driving, long idle times, or city driving
- Missions not requiring the carrying of large loads
- Transport five people or less
- Located near dealerships authorized to service/repair electric vehicles
- Infrastructure exists or the agency has the funding to obtain
- Replacing a less fuel efficient car

# What Impacts Electric Vehicle Range

- **Outside temperature**

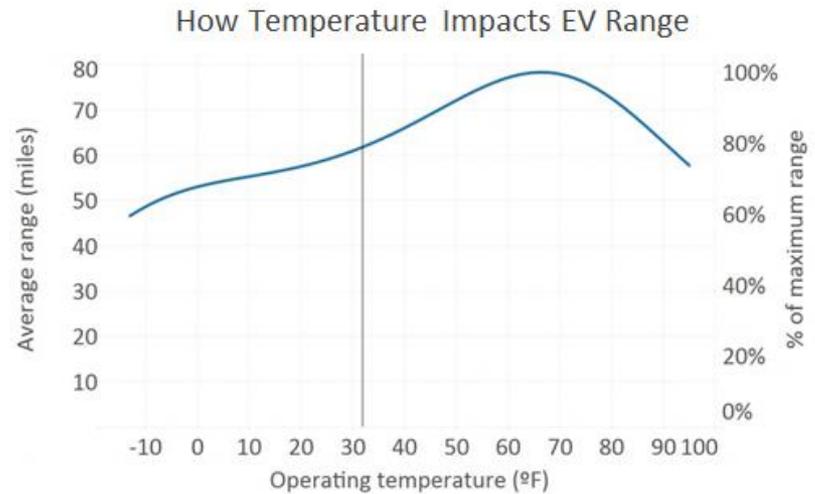
- ↓ Hotter and colder temperatures reduce vehicle range because more battery power is used to cool or heat the vehicle

- **Driver Behavior**

- ↑ Slower braking initiates regenerative braking systems in the vehicle, allowing drivers to recapture energy and extend range
- ↓ Aggressive acceleration and driving habits reduce range

- **Vehicle Loads**

- ↓ Vehicle range capacity is reduced when hauling heavy cargo



# Electric Vehicle Charging Infrastructure



## Level 1

***2-5 miles of range  
per hour of charging***

120V charging, 7-21 hours for full charge. Charging cord provided standard with vehicle.

**Harder to capture data by vehicle. Least expensive.**



## Level 2

***10-20 miles of range  
per hour of charging***

240V charging. 2-5 hours for full charge. Stations can collect data with optional data/network services.

**Works with any type of PHEV/EV. Moderately expensive.**



## Level 3 (DC Fast Charging)

***60-80 miles of range  
per 30 minutes of charging***

480V charging. Delivers full charge in 30 minutes-1 hour. Stations can collect data.

**Not all EVs can use all DC fast charger connection types. Most expensive.**

# Electric Vehicle Deployment Steps

- **Infrastructure development**
  - Plan for hardware/installation costs, become familiar with products, and ensure vehicle-level data collection and transmission
  - Identify new responsibilities, job roles and expectations
- **Deciding on Station Type**
  - Level, mount type, number of ports, manufacturer, network
- **Set up is a multi-step process**
  - Site planning, acquiring hardware, installing station (finding knowledgeable installers), activating station, accessing data portal, communicating with users

# Improving Overall Fleet Sustainability

FUEL ECONOMY				
	<b>More Green</b>			<b>Less Green</b>
<b>Size</b>	Small			Large
<b>Transmission</b>	Continuously Variable (CVT)			Automatic
<b>Vehicle Class</b>	Sedan			Truck/SUV
<b>Advanced Powertrain</b>	Battery/Electric	Hybrid	Diesel/CNG/E85	Gas
<b>Engine Displacement</b>	Smaller			Bigger
<b>Vehicle Weight</b>	Lighter			Heavier
<b>Cylinders</b>	Less			More
<b>Age</b>	Younger			Older

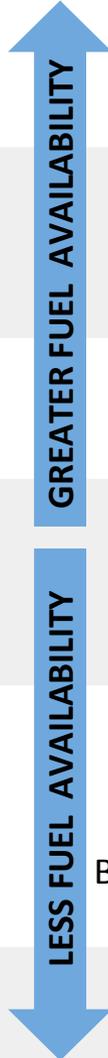
# AFV



## Pros and Cons

*When taking into consideration what kind of AFV to integrate into your fleet, think through fuel and vehicle availability, vehicle application, and costs.*

Fuel Type	PRO	CON
Electric	No GHG emissions Low fuel costs High fuel economy	High vehicle/infrastructure costs Long refueling time Limited vehicle class options
>85% Ethanol	Domestically produced Renewable Less expensive vehicles	Emits GHGs Lower fuel economy than gas Somewhat corrosive
Propane	Domestically produced Clean-burning	Lower fuel economy than gas Limited LD vehicle availability
Natural Gas (CNG/LNG)	Domestically produced Low fueling costs Can retrofit gas vehicles	High vehicle/equipment costs Limited fueling infrastructure
Biodiesel (B20)	Domestically produced Renewable Clean-burning Better fuel economy than gas	LD vehicles are expensive Limited fueling infrastructure Lower fuel economy than diesel
Hydrogen	Zero tailpipe emissions Domestically Produced	Limited availability Fuel storage difficult High production costs



# Locating Alternative Fuel Stations

- DOE Alternative Fuel Data Center Station Locator-  
<http://www.afdc.energy.gov/locator/stations/>
  - Use station locator as a guide to determine which AFVs are practical for use by your agency
  - Search for fueling stations by location, fuel type, and availability (public vs. private)
- WEX Connect Mobile App
  - Locate fueling stations that accept the Wright Express fleet credit card
  - Includes up-to-date station information and fuel costs for each fuel type and station
- Charging Station vendor apps



# Fuel Type and Geographic Considerations

## Rocky Terrain

- 4X4 or AWD SUV
- E85 or CNG pickup (pending availability of fuel & maintenance facilities)
- Consider Wheelbase, ground clearance



## City Driving

- Battery Electric Vehicle or Plug-in Hybrid Electric Vehicle (pending availability of charging infrastructure & maintenance facilities)
- Hybrid Electric Vehicle
- Low-GHG sedan



## Highway Driving

- Low-GHG sedan
- Diesel sedan



# Alternative Fuel Vehicles in the Fleet

- In FY15, 83% of federal vehicle purchases were alternative fuel vehicles, including low greenhouse gas-emitting vehicles.
- Since 2009, the Federal Fleet community has purchased 740 plug-in hybrid electric and 174 battery electric vehicles (including 168 YTD in FY16)\*



*\*Figure doesn't include commercial leases or LSEVs*

# Alternative Fuel Vehicle Offerings

- High Volume Ethanol (E85)
  - Emits 85% fewer GHG emissions per GGE than gas\*
  - Several vehicles offered through GSA come standard with E85
  - Available in many vehicle types: sedans, SUVs, and pickup trucks
- Compressed Natural Gas
  - Emits 25% fewer GHG emissions per GGE than gas
  - Available on pickup trucks, passenger vans, busses, and medium/heavy duty tractors through GSA.
- Biodiesel (B20 and greater)
  - Emits at a minimum 16% fewer GHG emissions per GGE than gas
  - Available primarily on pickup trucks



# FY16 Electric Vehicle Offerings



2016 8E Focus Electric  
\$180 / \$0.06  
Incremental \$12,039  
FRR: \$461 / \$0.06  
Purchase: \$26,684



2016 8P Volt  
\$180 / \$0.083  
Incremental \$15,655  
FRR: \$444 / \$0.08  
Purchase: \$30,300



2016 9P Hyundai Sonata  
\$181 / \$0.099  
Incremental \$11,105  
FRR: \$460 / \$0.10  
Purchase: \$28,800



2016 8P C-MAX Energi  
\$180 / \$0.083  
Incremental \$14,519  
FRR: \$444 / \$0.08  
Purchase: \$29,164



2016 9P Fusion Energi  
\$181 / \$0.099  
Incremental \$12,362  
FRR: \$460 / \$0.10  
Purchase: \$30,234

# Charging Station Acquisition

- Equipment, data plans, and installation services available through the Federal Supply Schedule
- View offerings on **GSA Advantage**
- Post requirements on **GSA Ebuy**
- Visit the **Motor Vehicle Hallway** for fact sheets and specific vendor offerings <https://hallways.cap.gsa.gov>

[https://www.gsaadvantage.gov/advantage/main/start\\_page.do](https://www.gsaadvantage.gov/advantage/main/start_page.do)

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**Products**

- Building & Industrial
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- Furniture & Furnishings
- Law Enforcement, Fire & Security
- Office Equipment
- Office Supplies

**GSA eBuy**  
The easy way to maximize competition

Compete your requirements among approved MAS, GWAC, or BPA contractors

[Learn More »](#)

# GSA FY16 Electric Vehicle Initiative

- GSA offered both purchasing and leasing customers the opportunity to purchase or lease the Ford Focus Electric for \$16,160 or \$199/month and \$0.064/mile (no incremental)
- Exclusively for delivery to ZEV states:
  - California, Connecticut, Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island and Vermont
- 70 vehicles have been ordered under this initiative to-date



# Looking to the Future: FY17 and Beyond

- GSA will continue to work with vehicle manufacturers to **negotiate the lowest price possible** for electric vehicles and alternative fuel vehicles
- **Government-wide charging station BPA** to be available for ordering in FY17
- **Mapping tool** to assist agencies with identifying and planning for future electric vehicle deployment
- **GSA mobile app** with map of maintenance and repair facilities and link to DOE alternative fuel locator map
- **Online training sessions** on EV deployment and new vehicle technologies that support E.O. 13693
- **GSA collaboration with DOE, CEQ, and federal agencies** to coordinate electric vehicle planning and acquisition activities
- **Additional acquisition solutions** for reducing fleet idling

# Sustainability Tools and Resources

- Acquisition Gateway
  - <http://hallways.cap.gsa.gov>
- GSA Fleet Alternative Fuel Vehicles
  - <http://www.gsa.gov/afv>
  - Links to annual AFV Guide and AFV Decision Tool
- GSA Fleet Drive-thru
  - <http://drivethru.gsa.gov>
- DOE Alternative Fuel Data Center
  - <http://www.afdc.energy.gov/>
- GSA Fleet Solutions
  - <http://gsa.gov/fleetsolutions>

Mandates, Options, and Availability

# VEHICLE TELEMATICS



# Federal Sustainability Mandates

Law/Mandate	Requirements
Executive Order 13693: Planning for Sustainability in the Next Decade	<ul style="list-style-type: none"><li>• Not later than March 2017, if an agency operates at least 20 motor vehicles, improve agency fleet and vehicle efficiency and management by:</li><li>• Collecting and utilizing operational data through deployment of vehicle telematics at a vehicle asset-level for all new passenger and light duty vehicle acquisitions and for medium duty vehicles, where appropriate (Agency determines where appropriate)</li></ul>

# What is Telematics?

The term “Telematics” refers to technology that combines telecommunications and information processing to send, receive, and store information related to remote objects, such as vehicles.

(Source GAO 14-443, Federal Vehicle Fleets)

# What Data Must Telematics Collect?

- Fuel Consumption
- Emissions
- Maintenance
- Utilization
- Idling
- Speed
- Location

# GSA Fleet Telematics BPA

- BPA awarded to AT&T Mobility LLC (BPA# GS-30F-CA51)
- 2 Categories:
  - GPS Tracking
  - GPS Tracking with Fleet Diagnostics
- Open to all federal agencies for both GSA Fleet purchasing and leasing customers
- Category 2 helps meet sustainability mandates in EO 13693
- Place orders directly with AT&T
- Agency is responsible for placing task order
- Agency pays the vendor directly

# AT&T BPA Pricing

	GPS Tracking	GPS Tracking with Vehicle Diagnostics
Device (Per Unit)	\$100.00	\$100.00
Installation (Per Unit)	\$46.55	\$46.55
Monthly Wireless Plan & Web Access	\$10.00	\$12.00
<b>Total Upfront Costs</b>	<b>\$146.55</b>	<b>\$146.55</b>
<b>Annual Service Cost</b>	<b>\$120.00</b>	<b>\$144.00</b>

Meets EO 13693 Maximum Vehicle Diagnostics



# AT&T Fleet Manager Security



- Hosted Portal Security
  - Strong Industry Encryption Protocols to Secure its Portals
  - Maintains IP Data Packets through Internet
- In Transit Security
  - Security Validates Subscriber & Device
  - Encrypts Cellular Signal & Device Pairing
- Device Security
  - OBD Module Passcode Security Lockout
  - Only Collects & Stores Data
  - Hardware has 'Read & Report Only' Relationship with Vehicle

# Benefits of GSA Fleet Telematics BPA

- Leveraged GSA purchasing power
- Reduced admin costs - eliminates repetitive acquisition efforts
- Reduces procurement lead time
- Streamlines ordering procedures
  - Competitive prices
  - Satisfies competition requirements
  - Pre-negotiated terms
- Satisfies recurring requirements
- Permits ordering activities the ability to incorporate terms and conditions not in conflict with the underlying contract

# Additional Info

- When ordering for GSA Fleet leased vehicles:
  - Must complete and submit Letter Of Agreement (LOA) to [fleetsolutions@gsa.gov](mailto:fleetsolutions@gsa.gov)
  - Place orders when vehicles are arriving; not when vehicles are ordered
- Installation
  - Customers coordinate directly with AT&T
  - Installations are performed at the vendor location or onsite
    - Customers take vehicles to an AT&T location(arranged in advance)
    - No self installation allowed under this BPA
    - Onsite Install Option at an additional fee

# How to Order Telematics

1. Go to [www.gsa.gov/telematics](http://www.gsa.gov/telematics) to download the GSA telematics package.
2. Complete the Letter of Agreement and submit to [fleetsolutions@gsa.gov](mailto:fleetsolutions@gsa.gov), for approval.
3. Agency contacts their contracting and/or finance office to initiate ordering process.
4. Submit the completed AT&T “Customer Order Sheet “ and supporting contracting documents as required by your agency to [sarah.fox@att.com](mailto:sarah.fox@att.com)
5. AT&T will contact customer for additional information including:
  - a. Setting up installation arrangements
  - b. Setting up the online account
  - c. Confirming contracting documents
6. Devices will be delivered to the arranged installer.
7. Customer takes vehicles to the assigned installation location for installation or has vehicles ready for onsite installation.
8. Once installation is complete, the vehicle will appear in an online account.

# Other & Future Telematics Info

- Legacy Fleet Monitoring - Networkfleet & Trimble
  - Currently can keep the service, as is
  - Transfer devices/service to Agency Ownership
- Looking Into OEM New Vehicle Options for FY 2017
  - Awaiting New Vehicle Awards (October timeframe)

# GSA Fleet Solutions Contact Info

**GSA Fleet Solutions**

[www.gsa.gov/telematics](http://www.gsa.gov/telematics)

[fleetsolutions@gsa.gov](mailto:fleetsolutions@gsa.gov)

## AT&T Contact Info

<http://www.corp.att.com/gov/fleet>

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703.272.2955



Fleet Optimization and Contact

# CONCLUSION



# Overall Fleet Sustainability Starts and Ends with Fleet Optimization

Optimizing Your Fleet



Greater ability to meet federal mandates



Reduced agency fleet costs

# How to Optimize

- Know your agency and your fleet
- Clearly define agency mission and goals
- Use the tools available to you
- Explore all available vehicles and options
- Use vehicle allocation methodology (VAM)
- Right-size vehicle fleet
- Have a mixed fuel portfolio
- Substitute vehicles for Fleet Solutions
  - Use Dispatch Reservation Module and look to Motorpool options
  - Look to short term rentals (STR) in place of vehicles that are sitting

# Contact

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