Green Purchasing Roundtable

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Alameda County General Services Agency
Agenda

• Introductions
• Why Fleets are Important
• Green Fleet Strategies
• Electric Vehicles 101
• Sonoma County Case Study – True Cost of Installing EV Charging Stations
• Purchasing Opportunities and Resources
• Q&A and Discussion
Global Impact of Fleets


Local Impact of Fleets

• Criteria emissions (smog, Nox, etc.)
• Asthma/cancer and environmental issues
It’s getting better!

Source: BAAQMD
Advanced Fuel Vehicles

Alternative Fuel Vehicles in Use

- Liquefied Petroleum Gas (LPG)
- Compressed Natural Gas (CNG)
- Liquefied Natural Gas (LNG)
- 85% Methanol (M85)
- Neat Methanol (M100)
- 85% Ethanol (E85)
- 95% Ethanol (E95)
- Electric
- Hydrogen
Advanced Fuel Stations

U.S. Alternative Fueling Stations by Fuel Type

- Electric*
- Propane
- Methanol (M85)
- LNG
- Hydrogen
- Biodiesel**
- CNG
- E85
Advanced Fuel $
What's the impact of a gallon of gasoline?
Focus on Fuel

Figure 10. CO2 Equivalents Lifecycle Comparison

Source: UCLA/CARB
Alameda County Fleet Facts

- 9,500 County employees
- Appx. 1,000 vehicles
- 3 motor vehicle shops
- Appx. .5 million gallons of fuel for internal fleet use and 9 million VMT
Countywide Emissions


Transportation 51%

Employee Commutes 39%

Vehicle Fleet 12%

Emergency Generators 0.1%

Leased Buildings (est.) 9%

Owned Buildings 35%

Waste - Leased Bldg. (est.) 0.4%

Waste - Owned Bldg. 2%

Water Pumps / Irrigation 1%

Streetlights/Signals 2%

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Rethinking Mobility

- Motor Vehicles
- Clean Commute Program
- Messenger Service
- Parking

GSA – Transportation Services
20% reduction in drive alone commuting by 2017

(about 1,200 commuters)
Vehicle Use Policy

Right-sizing through minimum usage requirements

Right-typing – only justified use of SUVs, etc.

Greenest vehicles available
General Fleet Best Practices

1- Measure your baseline (Fleet software, GPS, etc.)
2- Set goals
3- Measure progress
## Motor Pools

### Availability

<table>
<thead>
<tr>
<th>Oakland, CA 7th Street</th>
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<tbody>
<tr>
<td>7thStreet_Emergency</td>
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<tr>
<td>Hybrid Vehicle</td>
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<tr>
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<tr>
<td>Sedan</td>
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<tr>
<td>Sedan</td>
</tr>
</tbody>
</table>

#### Legend

- **Available:** Green
- **Reserved:** Grey

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[Image of key holder with keys]
Business Travel Alternatives
Bike Fleet
Alameda County Transportation Services

Eco Driving

This vehicle has a new “eco-meter,” which measures real-time fuel efficiency in miles per gallon (MPG) to help you conserve fuel.

Drive eco-friendly and the dial will move all the way into the green. Slam on the brakes or put the pedal to the metal, the dial will stay in the red.

Tip #1: Avoid Rapid Starts and Stops
Gentle accelerations and braking can save more than $1 per gallon and improve fuel economy up to 33%! Keep your eco-meter in the green by braking smoothly and easing into accelerations.

Tip #2: Use Cruise Control
Using cruise control on the highway keeps you steady and efficient. Lock your cruise control to 55 miles per hour, optimal efficiency, to help save even more.

Tip #3: Use AC at Higher Speeds
Using AC at higher speeds lets you cool off without creating fuel-guzzling aerodynamic drag.

Tip #4: Don’t Idle
Idling gets you 0 miles per gallon! And it’s also against County policy to idle unless necessary.

SUSTAINABILITY
Local Action, Global Impact
Reducing Waste

1- Re refined motor oil

- Coast Oil contract
- 5W20 (Ford) and 5W30 (GM)
- $1.30/qt (3x cheaper)
- American Petroleum Institute (API) standards
Reducing Waste

2- Lifetime Oil Filters

- Reduce waste from filters
- Doubles the life of oil
- Currently in beta testing
Reducing Waste

3- Lifetime anti-freeze

- Guaranteed for 100K miles
- Cost comparable
- Lifetime vs recycled

4- Re-tread tires

- Mostly heavy-duty
- Cost comparable
- Federal Executive Order 13149
Purchasing EVs for Fleets
**EV 101**

**Hybrid**
- Prius, etc.
- Idle elimination
- Electric at low speed
- Uses gasoline
- ICE
- No charging

**Plug-In Hybrid**
- Volt, Prius Plug-In, etc.
- Idle elimination
- Electric at highway speed
- Uses gasoline
- ICE or electric motor

**Electric Vehicle**
- Leaf, Spark EV, Focus EV, etc.
- Idle elimination
- Electric at highway speed
- No gasoline
- Electric motors
- Charging required
EV 101

Level 1
110v

Level 2
208/240v

Level 3
DC Fast Charge

SAE J1772 standard

Chademo SAE Combo
Why EVs?

- Eliminate tailpipe pollution, drastically reduce GHG emissions
- “Greener” over time
- Fits duty-cycle: most trips under 40-50 miles
- Cost savings
- Fun to drive!

<table>
<thead>
<tr>
<th>Vehicle</th>
<th>Fuel Cost</th>
<th>Avg. MPG</th>
<th>Cost per Mile</th>
<th>Cost/8000 miles</th>
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<tr>
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<td>$4.50</td>
<td>27</td>
<td>$0.16</td>
<td>$1,280</td>
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<td>Intermediate</td>
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<td>21</td>
<td>$0.21</td>
<td>$1,680</td>
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<tr>
<td>Full Size</td>
<td>$4.50</td>
<td>12</td>
<td>$0.37</td>
<td>$2,960</td>
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<tr>
<td>Hybrid</td>
<td>$4.50</td>
<td>37</td>
<td>$0.12</td>
<td>$960</td>
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<tr>
<td>EV-Peak</td>
<td>$0.15 per kWh</td>
<td>100 miles per charge</td>
<td>$0.036</td>
<td>$288</td>
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<tr>
<td>EV-Off Peak</td>
<td>$0.08 per kWh</td>
<td>100 miles per charge</td>
<td>$0.019</td>
<td>$152</td>
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</table>
Alameda County Transportation Services

**EVs Are Here!**

- **Coda**
- **Nissan Leaf**
- **Tesla Model S**
- **Ford Focus BEV**
- **Mitsubishi i-MiEV**
Alameda County Transportation Services
Alameda County Transportation Services

EVs

U.S. PEV Sales by Model

Thousands of Vehicles Sold

12.50
10
7.50
5
2.50
0

BMW Active E
Cadillac ELR
Chevrolet Spark
Chevrolet Volt
Fiat 500E
Ford C-MAX Energi
Ford Focus Electric
Ford Fusion Energi
Honda Accord
Honda Fit EV
Mitsubishi i-MiEV
Nissan LEAF

Alameda County SUSTAINABILITY
Local Action, Global Impact
Alameda County Transportation Services

Heavy-Duty EVs
Applications

- Our typical usage – under 40 miles
- Stop/go traffic
- City application
Challenges
Building an Electric Vehicle Charging Station Network

A Case Study – County of Sonoma

David Worthington
General Services Department
Fleet Manager
County of Sonoma

Green Fleets Roundtable
Oakland, CA – October 22, 2014
Grant Overview

40 EV Charging Stations
• BAAQMD TFCA - $84,960
• CEC/ABAG - $182,762
Total - $267,722

26 EV Charging Stations
• $286,000

26 EVs
• $526,000.
Total - $812,000
Current EV $

BAAQMD

• Public Agency PEV Rebate Program – doubles CVRP

But wait, there’s more!

Appx. $20,000 in CVRP last year

$1,500

$2,500
Additional Funding

HVIP
$20,000 - $95,000

https://www.californiahvip.org/docs/HVIP_Year4_EligibleVehicles.pdf
Alameda County Transportation Services

Local Government EV Fleet Demonstration Project

- Collaborative procurement with 10 other Bay Area municipal government
- 90 all-electric vehicles and charging stations
Benefits

- EV bid saved over $349,000.
- Successful utilization of federal tax-incentive in vehicle bid
- EV fleet is expected to achieve fuel costs savings of $500,000 and 1.5 million lbs. of net CO2 pollution prevention over the next five years.
Alameda County Collaborative EV Contract

- Two-year contract (start 5/2014)
- Delivery fee ($100-$125)

- Ford Focus EV
  - $31,361
  - Hansel Ford (Santa Rosa)

- Nissan Leaf (SV)
  - $33,947
  - South County Nissan (Gilroy)

- Zenith
  - $96,600
  - Zenith (KY)
Alameda County Collaborative
EVCS Contract

Contract starts
January 1, 2015
Collaborative Fuel Bid Details

- Currently led by Santa Clara County
- Award expected in December 2014

Fuels & Vehicles

- Unleaded (87 Octane)
- CARB Ultra Low Sulfur Diesel #2
- CARB Ultra Low Sulfur Diesel #2 (Red Dyed)
- Biodiesel (B5 and B20)
Resources

www.cleancitieseastbay.org

http://www.baclimate.org/impact/evguidelines.html

http://www.driveclean.ca.gov/images/pev/pev_logo.png
## Resources

### Graph: Life-Cycle Petroleum Use and GHG Emissions - Fleet

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<tr>
<th></th>
<th>Petroleum Use</th>
<th>GHG Emissions</th>
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<td>Passenger Truck</td>
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<td>Light Commercial Truck</td>
<td>625.7</td>
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<td>School Bus</td>
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<td>Transit Bus</td>
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<td>Refuse Truck</td>
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<td>Combination Short-Haul Truck</td>
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Total: 36,643.5

### Table: Resources

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<th>G</th>
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https://greet.es.anl.gov/main
For more...

Questions? Comments?

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Alameda County General Services Agency
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Phillip.Kobernick@acgov.org
Q&A and Group Discussion